PUREWater Soquel
Water Transformed

Grant Application for:
WaterSMART: Title XVI WIIN Water Reclamation & Reuse Projects for FY 2022

Funding Opportunity Number: R22AS00115

Project:
Pure Water Soquel: Groundwater Replenishment and Seawater Intrusion Prevention Project

Submitted to:
Bureau of Reclamation, Financial Assistance Operations
Attention: Title XVI WIIN NOFO TEAM

Submitted electronically through www.grants.gov

Submitted by:

SOQUEL CREEK WATER DISTRICT

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March 15, 2022

Collaborating with: City of Santa Cruz, County of Santa Cruz, and the Santa Cruz Mid-County Groundwater Agency

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List of Acronyms and Abbreviations

$/AF	Dollars per Acre Foot
AACE	Association for the Advancement of Cost Estimating
AACEI	Association for the Advancement of Cost Engineering International
ADW	Average Dry Weather
AFY	Acre-feet per Year
APE	Areas of Potential Effects
AWPF	Advanced Water Purification Facility
Basin	Santa Cruz Mid-County GW Basin
BMP	Best Management Practices
CCR	California Code of Regulations
CDP	Coastal Development Permit
CECs	Constituents of Emerging Concern
CEQA	California Environmental Quality Act
Chanticleer	Site of AWTF at Chanticleer Ave and Soquel Ave. Santa Cruz, CA
City	City of Santa Cruz
Clean Energy	Electricity from carbon-free sources such as solar, wind, and hydroelectric
CWA	Clean Water Act
District	Soquel Creek Water District
DPS	Distinct Population Segments
EI&C	electrical, instrumentation, and control systems
EIR	Environmental Impact Report completed 12/18/2018
EIS	Environmental Impact Statement
ENR-CCI	Engineering News Report's Construction Cost
ESA	Endangered Species Act
ESA	Environmental Science Associates
ESU	Evolutionarily Significant Unit
FTE	Full-Time Employee
GHG	Greenhouse gas
GP	Guaranteed Price
GPCD	Gallons per capita per day
GSP	Groundwater Sustainability Plan
IPR	Indirect Potable Reuse
MBCP	Monterey Bay Community Power
MBNMS	Monterey Bay National Marine Sanctuary
MCL	Maximum Contaminant Level
MF	Microfiltration
mg/L	Milligrams per liter
MGA	Santa Cruz Mid-County Groundwater Agency
MGD	Million Gallons per Day
MSA	Metropolitan Statistical Area
MWh/yr	Megawatt-hours per year
NEPA	National Environmental Protection Act
NMFS	National Marine Fisheries Service
NPV	Net Present Value
NWCI	Northwest Information Center
NWRI	National Water Research Institute
O&M	Operations and Maintenance
PHWW	Peak Hour Wet Weather
PDB	Progressive Design Build
Project	Pure Water Soquel Project
Prop 1 or Proposition 1	The California Water Quality, Supply, and Infrastructure Improvement Act, 2014
PV Water	Pajaro Valley Water Management Agency
PWS or Project	Pure Water Soquel
RO	Reverse Osmosis
RWQCB	Regional Water Quality Control Board
S&P	Standard & Poor's
Sanctuary	Monterey Bay National Marine Sanctuary
SC	Santa Cruz
SC WWTF or WWTF	Santa Cruz Wastewater Treatment Facility
SCCSD	Santa Cruz County Sanitation District
SEAWAT	US Geological Survey water model
SFPUC	San Francisco Public Utilities Commission
SGMA	Sustainable Groundwater Management Act
SkyTEM	Sky Transient Electromagnetic (Company)
SqCWD	Soquel Creek Water District
SRF	California State Revolving Fund
SWIP	Seawater Intrusion Prevention/ Recharge Wells
SWRCB	California State Water Resources Control Board
TAC	Technical Advisory Committee
USBR	US Bureau of Reclamation
USGS	U.S. Geological Survey
UV AOP	Ultraviolet Light Advanced Oxidation Process
UWMP	Urban Water Management Plan
WIIN Act	Water Infrastructure Improvements for the Nation Act

Technical Proposal

As a past recipient of a Title XVI grant award, Soquel Creek Water District (District) is requesting continued grant funding from the US Bureau of Reclamation (USBR) through the US Department of the Interior's WaterSMART Program for Title XVI Reclamation and Reuse Projects. The District completed a Feasibility Study in 2017 that was reviewed and found to meet the requirements of WTR 1101 and transmitted to Congress in September 2018 and deemed eligible to complete for Title XVI Project funding under section 4009(c) of the WIIN Act.

Date:	MARCH 15, 2022
Applicant:	SOQUEL CREEK WATER DISTRICT
Project Name:	PURE WATER SOQUEL: GROUNDWATER REPLENISHMENT AND SEAWATER INTRUSION PREVENTION PROJECT
City, County, State:	SOQUEL, SANTA CRUZ COUNTY, CALIFORNIA

1 EXECUTIVE SUMMARY

Soquel Creek Water District (District) is proud to have been selected as a previous recipient and is requesting continued USBR funding support for the Pure Water Soquel (Project), which is aimed at supplementing natural recharge of the Santa Cruz Mid-County Groundwater Basin (Basin) with purified recycled water. This Basin has been declared 'Critically Overdrafted' and a 'High Priority' due to the seawater intrusion and contamination that is occurring along the coastline. The Title XVI Program provides support for priorities identified in Presidential Executive Order (E.O.) 14008: *Tackling the Climate Crisis at Home and Abroad*. Consistent with E.O. 14008, the District has "*a narrow moment to pursue action at home...in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents.*" Coastal monitoring wells indicate the presence of seawater intrusion and the progressive contamination of the Basin at the coast. The District's wells are closest to the coast and most susceptible to seawater intrusion contamination, which can be irreversible. The District recognizes this "*narrow moment*" when opportunities can be seized, and the Project can be implemented to avoid catastrophic and irreversible impacts of climate change. The Project is being designed and constructed to:

- Reduce the critical overdraft conditions in the Basin,
- Protect against further seawater intrusion and contamination of the groundwater basin,
- Build resiliency against sea level rise impacts caused by climate change,
- Promote beneficial reuse and provide a reliable water supply during droughts,
- Preserve a federally protected marine area by reducing discharge of treated wastewater to Monterey Bay National Marine Sanctuary (Sanctuary),
- Comply with State mandated sustainability goals, and
- Avoid water restrictions that would affect tourism, businesses, quality of life and have a devastating economic impact on the region (estimated at over $900 million with added benefits of avoiding the loss of over 725 jobs and a moratorium on water meters that would prevent 2,100 new housing units).

The Project will capture secondary treated effluent that is discharged as a waste stream into the Sanctuary, purify it through an advanced water treatment process, and inject the purified water into the groundwater to replenish the supplies, raise groundwater elevations along the coast, and protect the Basin from further seawater intrusion.

Development and construction of Phase I of the Project is on an aggressively fast schedule (2015–2023) to protect against the imminent threat of seawater intrusion and contamination into the District's groundwater wells. Eligible Project costs through September 30, 2025, are $169,330,000 and the District is seeking a $20,925,000 Title XVI WIIN Act Grant, equal to the remaining balance of the $30,000,000 funding limit. These funds will be used to complete construction of project facilities including the tertiary treatment, advanced water purification, Seawater Intrusion Prevention (SWIP) wells, and conveyance facilities and stay on track to be operational by 2023. The Project's total benefits have been calculated to be over $900 million in both economic and environmental benefits which demonstrates the importance and significance of Pure Water Soquel.

The Title XVI Program, and the Project, are also aligned with other federal priorities, including E.O. 13985: *Advancing Racial Equity and Support for Underserved Communities.* An economic study funded by the District has found that, without the Project, 727 jobs would be lost, representing 3.8% of employment in the service area. The lost jobs would likely be from the service industry that would be significantly impacted by the severe water restrictions and loss of tourism. The analysis also found that 2,122 housing units would not be constructed, exacerbating a perennial problem of high housing costs and a lack of affordable housing. In addition, the study estimated that without the Project the customers would have to face mandatory curtailment and pay approximately three times more for their water. If the Project is not implemented, the economically disadvantaged would be most impacted and have less access to employment and housing in the region.

With the Project, the region can achieve a reliable water supply, achieve the state mandate to achieve basin sustainability by 2040, restore the basin and promote greater regional watershed enhancements that are drought resilient, increase resiliency against climate change impacts, and advance equal opportunity in the region.

2 TECHNICAL PROJECT DESCRIPTION

Purpose and Need of the Project

The Santa Cruz Mid-County Groundwater Basin (Basin) (**Figure 2-1**) is critically overdrafted and is threatened by seawater intrusion. Groundwater is the only source of supply for Soquel Creek Water District (District) and other municipal and private well owners in the region.

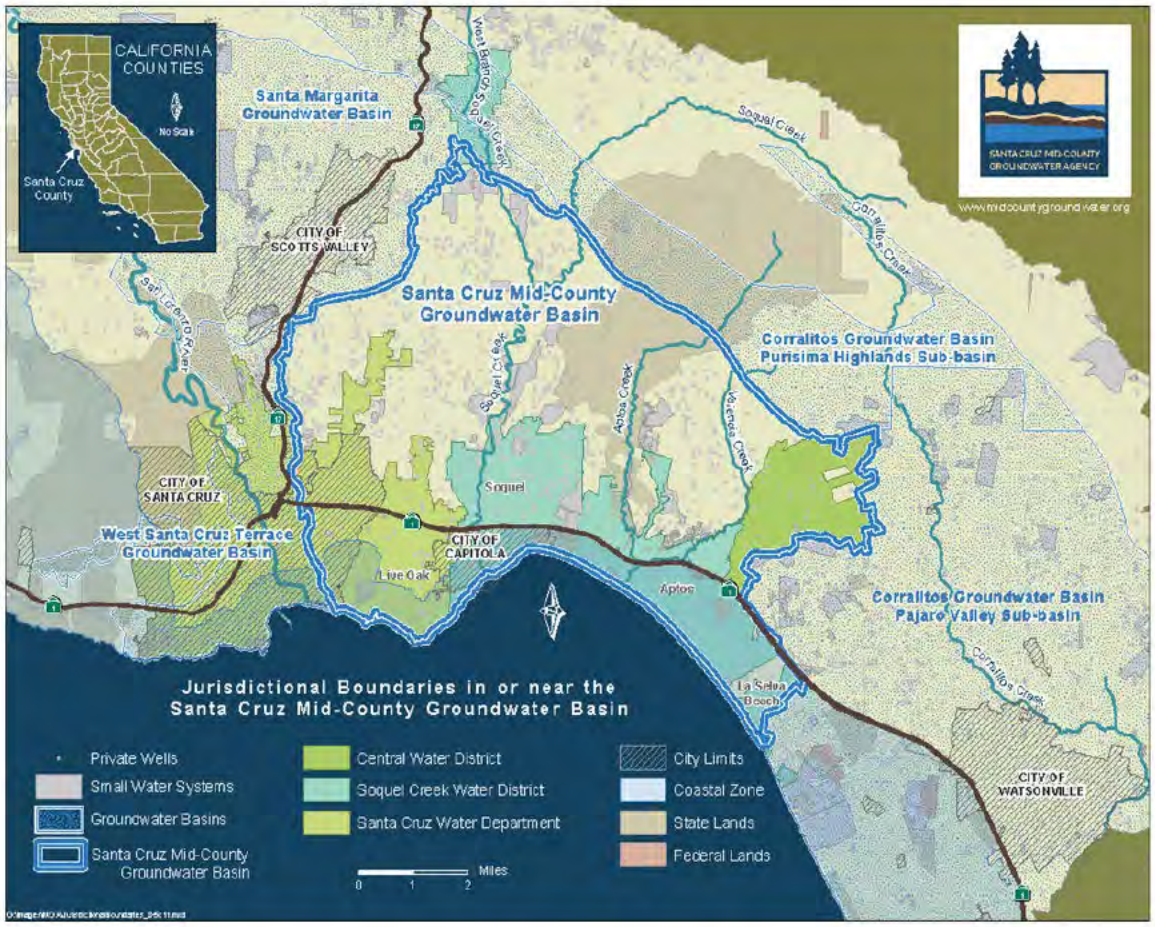

Figure 2-1 Santa Cruz Mid-County Groundwater Basin

As one of the area's most coastal pumpers, pumper, the District is the first line of defense for all basin users and is implementing the Pure Water Soquel Project (Project) to protect the basin and preserve the groundwater. This Project involves injecting purified recycled water to replenish the basin and create a seawater intrusion barrier along the coast. As shown in **Table 2-1**, the Project will:

Table 2-1 Primary Goals of Pure Water Soquel

PROVIDE	• Regional water supply to meet current and future demands, including resiliency for drought conditions and climate change • Sustainable groundwater basin to meet the CA State Mandate by 2040
REDUCE	• Treated wastewater discharges to the Monterey Bay National Marine Sanctuary • Need for future diversions from the San Lorenzo River and other sensitive creeks

PROTECT	• 5,800 AFY of groundwater within the Basin's Coastal Zone Region that supports all basin users, including municipal and private wells • A nearly billion dollar economy • The sole source of supply for many residents and businesses in the Mid-County and reduce the risk of water shortage crisis if contamination renders drinking water supply unusable. • Equitable access to employment and housing
PREVENT	• Mandatory use restrictions • Loss of over 725 jobs • Moratorium on over 2,100 new housing units

Location

The Project is located in Santa Cruz County (County), California, within a coastal community south of the San Francisco Bay Area and north of Monterey. This area is completely dependent on local water resources, there is no imported water from State or Federal systems. The communities that will directly benefit from the Project include Capitola, Santa Cruz, and unincorporated census designated places of Twin Lakes, Live Oak, Pleasure Point, Soquel, Seacliff, Aptos, Rio Del Mar, Day Valley, Corralitos, Aptos Hills-Larkin Valley, and La Selva Beach. However, the Project benefits go well beyond the direct water users, the Project also protects the region's tourism industry and National Marine Sanctuary for visitors worldwide to continue to enjoy.

The District service area overlies Basin 3-001, the Santa Cruz Mid-County Groundwater Basin (Basin). The Basin is one of 21 groundwater basins in California that have been designated 'critically overdrafted' by the Department of Water Resources (DWR) due to seawater intrusion. The Basin is also identified as 'high-priority' due to the region's reliance on the Basin as its only supply.

The District is the largest water agency in the Basin and operates and maintains more than 80 monitoring wells, 15 active production wells, 2 standby production wells, 18 storage tanks, and delivers water to its customers through more than 166 miles of pipeline and 15,800 connections. The region is dependent solely on local water resources that are impaired by seawater intrusion and limited in drought conditions. The District's wells are closest to the coast and most susceptible to seawater intrusion contamination. This location makes the District the first line of defense in protecting the Basin from encroaching seawater intrusion and places the financial responsibility on its small base of ratepayers.

Water Use

Groundwater is the primary source of water for residents and businesses within the Basin, there is no access to State or Federal supplies. The total groundwater pumping within the Coastal Region of the Basin is 5,800 AFY, of which the District's long-term forecast demand is 3,800 AFY. While the City of Santa Cruz utilizes some surface water in addition to groundwater, the remainder of the Basin users are 100% reliant on groundwater.

Table 2-2: Groundwater Pumping of SC Mid-County Groundwater Basin Users

	Soquel Creek Water District	Central Water District	City of Santa Cruz	Small Mutuals and Private Wells
Water Demands in Coastal Region AFY (5,800 AFY)	3,800	550	520	900
Percentage of Coastal Zone Region Demands	66%	9%	9%	16%

Population and Economy

The Basin supplies the water for approximately 92,130 people. Of this population, approximately 80,495 people receive water from three municipal water agencies: The District, City of Santa Cruz, and Central Water District. Approximately 11,635 people are supplied by private wells and small mutual water companies and overseen by the County. The District serves an estimated 40,400 customers through 15,800 connections, of which 94% are residential.

As documented in later sections of this application, Pure Water Soquel is the most cost effective and environmentally responsible project to meet the water supply needs for the District. However, with such a small ratepayer base, the water rate increases to fund the Project have been significant. The District adopted and is implementing five years of rate increases beginning in 2019 through 2023. To reduce the financial burden on our ratepayers, the District has been seeking outside funding assistance and desires to partner with state and federal agencies to invest in Pure Water Soquel because of the multiple benefits the Project provides.

The regional economy is primarily supported by tourism, agriculture, and education which all rely on a reliable water supply to support a thriving community. An economic study found the Project provides over a $900M economic benefit (Haddad, 2018, updated 2021). The study also found the Project will result in avoiding the loss of over 725 jobs and avoiding a moratorium on water meters that would prevent approx. 2,100 new housing units. In addition, the study evaluated that without the Project the customers would have to face mandatory curtailment and pay approximately three times more for their water. If the Project is not implemented, the economically disadvantaged would be most impacted and have less access to employment and housing in the region.

Challenge: Critically Overdrafted Groundwater Basin Causing Seawater Intrusion and Contamination of Sole Source of Groundwater Supply

Over 70% of the larger coastal communities worldwide that rely on groundwater are faced with seawater contamination. Seawater intrusion is a condition whereby groundwater is withdrawn at a faster rate than it can be replenished by rainfall and seawater or ocean water moves into the freshwater aquifers. When groundwater levels are too low, they can become contaminated with seawater. This condition can be irreversible and can result in either abandoning wells or requiring costly treatment. A coastal monitoring network in the Basin was developed in the 1980s because of the high risk of seawater intrusion into the Basin's productive aquifers. Seawater intrusion is already present within the Basin at Soquel Point and in the La Selva Beach area. Coastal monitoring wells, several of which were installed where seawater intrusion was expected, assess, and track the progression of seawater intrusion into the Basin's productive aquifers. These coastal sentinel wells are sampled quarterly for groundwater levels, total dissolved solids, and chloride concentrations and have tracked the progressive contamination of the Basin at the coast (see red and orange dots shown in **Figure 2-2**). Given the imminent threat of seawater intrusion, the District declared a Groundwater Emergency in 2014 and a Stage 3 water shortage to reduce water consumption and encourage water conservation by 25% to preserve the limited fresh groundwater. The declared emergency has remained in place since 2014.

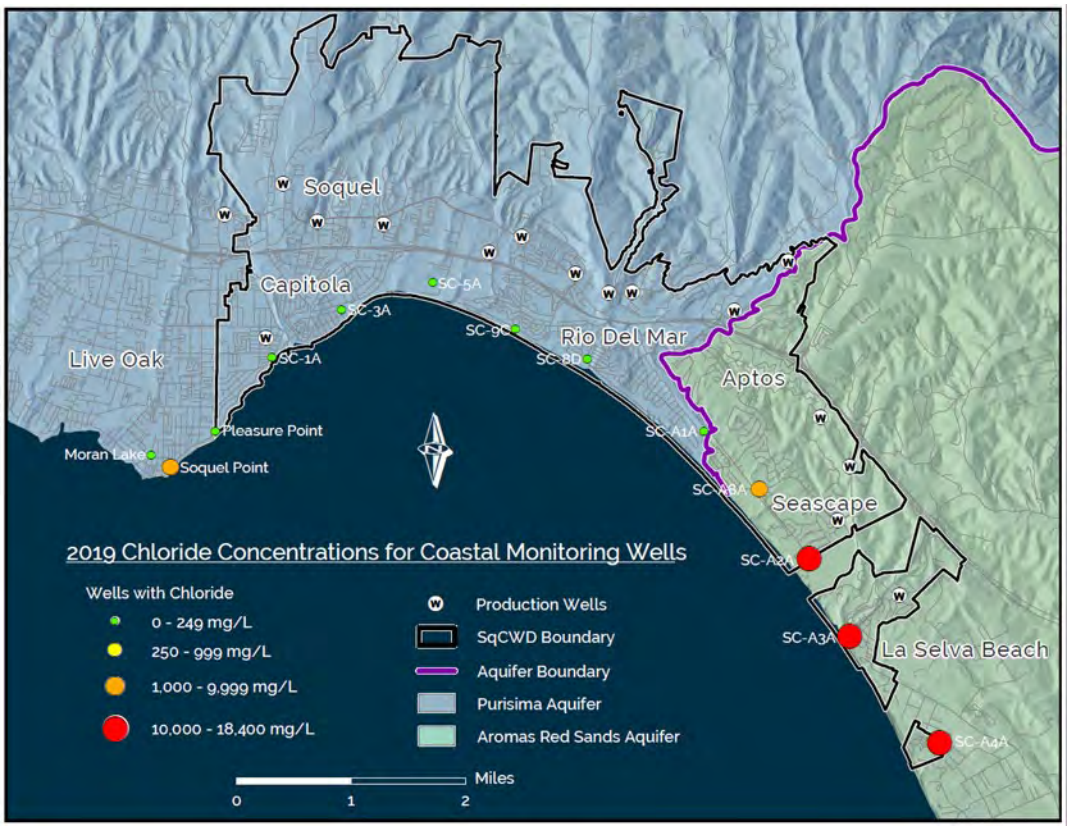

Figure 2-2 Seawater Contamination at the Coastline

While the seawater contamination was detected and known at both ends of the basin in the Live Oak area and La Selva Beach, the proximity of the freshwater/seawater interface along the coast

was not certain until recently. A study was commissioned in 2017 to assess the salinity of groundwater aquifers along the Monterey Bay coastline. The study, using aerial geophysical tools, detected the location of freshwater and seawater in the Basin (both inland and offshore) and the data indicated that seawater intrusion is occurring along the entire coastline of the District's service area immediately offshore (**Figure 2-3**). Moreover, the results of the study demonstrate that the extent of elevated salinity levels among coastal aquifers is substantial in this area. The study emphasized the need for immediate actions that would facilitate the recovery, maintenance, and protection of groundwater levels to prevent further onshore intrusion (HydroMetrics WRI, 2018). The District recognizes the need to act now to avoid the irreversible impacts of climate change.

Coastal groundwater elevations must rise to protective levels to prevent further seawater intrusion. Hydrologic analysis and evaluations estimate that the District must limit its net groundwater extractions to no more than 2,300 AFY and secure approximately 1,500 AFY of supplemental supply to contribute to basin recovery and protect against seawater intrusion (Water Systems Consulting, 2015).

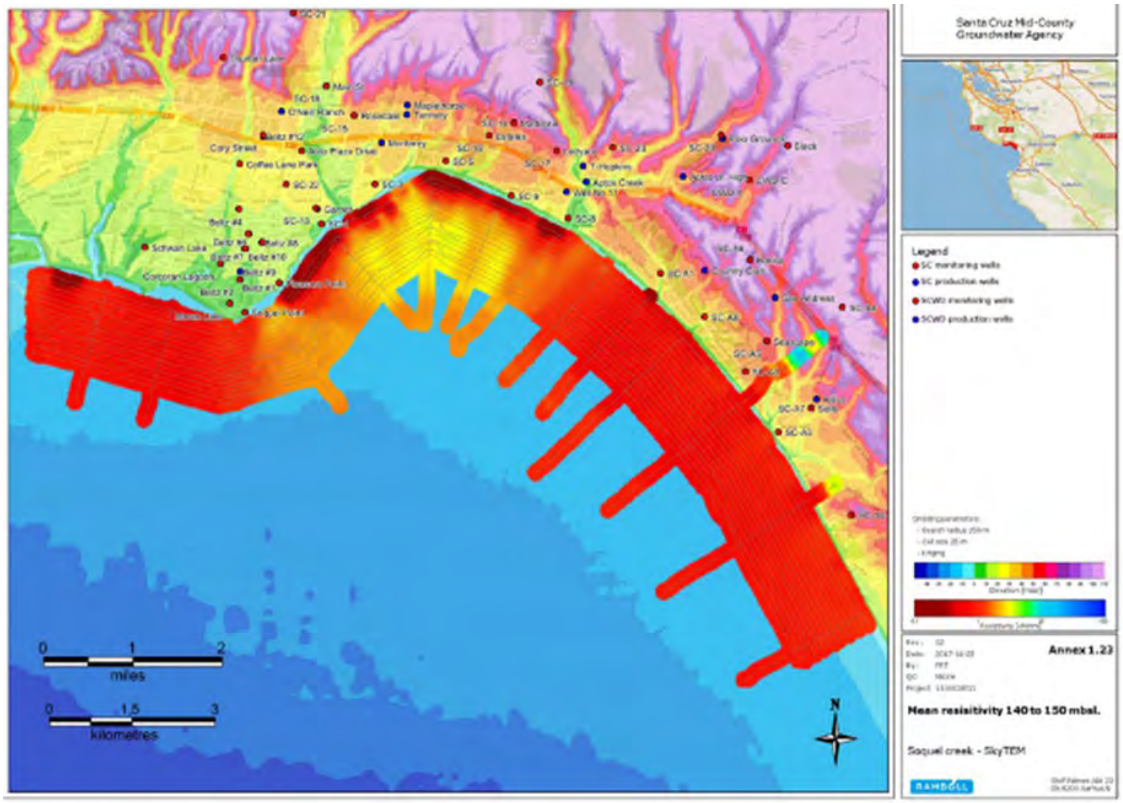

Figure 2-3 SkyTEM results confirming seawater intrusion along entire coastline of the Basin

Challenge: Inadequate Regional Water Supplies to Meet Demands During Drought

The City of Santa Cruz is faced with the additional challenge of inadequate water supplies to meet all of its water needs during a drought. In fact, if the City were faced with drought conditions similar to the 1976–77 drought, they would not have enough water to meet demands. Drought-related curtailment has historically been estimated to be as high as 45%. Even with ongoing

conservation efforts and up to 15% water-use restrictions during drought conditions, additional water supplies are needed. The City of Santa Cruz needs approximately 1,500 AFY to create drought resiliency and meet potable water needs for public health and safety, economic stability, and provide water for protection of endangered species.

The City of Capitola is also affected by inadequate regional water supplies. The City of Capitola relies upon the City of Santa Cruz and the District to provide water to its residents and is being impacted by their water shortages. In June 2014, the City of Capitola approved its General Plan Update, which serves as its blueprint for future development and conservation within its community. Given the regional water supply shortages, Capitola had to pass its General Plan Update with significant and overriding considerations, stating that their community had inadequate water supplies.

Addressing the Challenge: Historical Background leading up to Pure Water Soquel

Locally, the shared danger of seawater intrusion has stimulated several decades of study, planning, and project cooperation within the region. From 2007–2013, the District and City of Santa Cruz evaluated desalination as a potential regional water supply. However, in August 2013 after $14 million dollars had been spent on developing a pilot desalination facility and numerous technical studies and reports, the City withdrew from the desalination project due to political pressure. Consequently, the District and the City were forced to go back to the 'drawing board' to re-evaluate water supply projects and start anew.

With the District's closest proximity to the coastal seawater contamination and acknowledging it will be the first impacted by seawater intrusion, it bears the responsibility of protecting its service area and the rest of the basin from seawater intrusion. As such, the District does not take this duty lightly to protect the region against the imminent threat. Thus, in parallel with the MGA process, the District conducted a separate water supply evaluation in 2013–2014 through a very open public process which resulted in the identification of recycled water, maximizing surface water withdrawals, and desalination as water supply options requiring further evaluation.

With the 2014 passage of the Sustainable Groundwater Management Act (SGMA), the State established a timeline for developing a solution to the basin overdraft. Through SGMA, 500 groundwater basins in California were evaluated for their viability and reliability to provide a sustainable water supply. The Santa Cruz Mid-County Groundwater Basin was one of 21 basins identified as critically overdrafted. The State requires that a groundwater sustainability agency be formed to create a Groundwater Sustainability Plan (GSP) by 2020. In

Community Member Perspective: Agricultural Loss

Mr. Pete Cartwright, a District customer, lost a private well that was serving an agricultural field in La Selva Beach, due to his well being contaminated by seawater intrusion. While his house is served by a District well (located more inland), he has had to abandon his private coastal well and refund the farmer the rental money for the plot of land since it didn't have water to farm with. Mr. Cartwright has also expressed that other wells in his neighborhood are getting impacted.

response to the mandate, the Santa Cruz Mid-County Groundwater Agency (MGA) was formally created by regional stakeholders in 2016. The MGA includes the District, City, Central Water District, and private well owners that were tasked with developing a GSP that includes programs, activities, and projects to bring the Basin into sustainability.

To achieve sustainability and meet the State mandate, the MGA identified projects and programs to increase groundwater elevations. Keeping groundwater elevations high at the coast creates a freshwater barrier that protects the Basin against further seawater intrusion. Projects such as reducing demands with water conservation and shifting pumping away, helps to protect this groundwater supply; however, seawater contamination continues to be a threat to the Basin. Based on a complex groundwater model, the MGA set the target groundwater levels for each coastal monitoring well that will preserve the groundwater basin. These levels are referred to as protective groundwater elevations.

In 2017, the District completed the Regional Recycled Water Feasibility Study which evaluated six potential recycled water projects that included various locations, treatment capacities, and potential uses. Pure Water Soquel was identified as the recommended project. The District then prepared a Pure Water Soquel Title XVI Feasibility Study that was reviewed by Reclamation, found to meet the requirements of WTR 110,1 on May 9, 2018, transmitted to Congress in September 2018, and deemed a Title XVI Water Reclamation and Reuse WIIN Eligible Project.

On November 15, 2018, the MGA unanimously voted to include the Project in the GSP as a project that would aid in meeting the sustainability goals. On November 21, 2019, the MGA approved the GSP and on June 3, 2021, the Plan was the first full-basin GSP to be approved by the State of California to achieve sustainability. A huge milestone! Pure Water Soquel is the only project identified in the Plan thus far that has completed environmental review and begun implementation. Other water supply projects listed in the GSP are still conceptual.

DWR announces MGA's Groundwater Sustainability Plan was approved via an official video release on 6/3/21.

Solution: Pure Water Soquel

The District has determined a supplemental water supply is required to restore groundwater levels basin-wide and aid in meeting the SGMA mandate of a sustainable groundwater basin by 2040. Given the confirmed threat of seawater intrusion, the District Board of Directors has set an aggressive timeline for construction and start-up of Pure Water Soquel by 2023.

The Project will be designed and operated to protect the Basin from seawater intrusion and

deliver a reliable and resilient water supply in anticipation of drought and climate change by implementing five program operational strategies (**Table 2-3**) designed to work together, maximize project benefits, and ensure a sustainable solution.

Description of Pure Water Soquel

There were various options for the multiple components of the Project that were evaluated in the Title XVI Feasibility Study. Based on further engineering evaluation, environmental analysis, and collaboration with regional partners including the City of Santa Cruz, County of Santa Cruz, and the MGA, the project components have been defined as shown in **Figure 2-4**.

As described in the Feasibility Study, "the total basin deficit is believed to be approximately 3,000 AFY. Of this amount, SqCWD's portion of the deficit is estimated to be approximately 1,500 AFY. The goal for this project was therefore determined to be sized at 1,500 AFY of purified recycled water be injected into the groundwater basin, with the potential for future expansion to 3,000 AFY if regional support is guaranteed." The Feasibility Study also recommended that "underground infrastructure be sized to accommodate the future potential regional flows of up to 3,000 AFY of purified water."

Table 2-3 Operational Strategies to Achieve Basin Sustainability

1	**CONSERVATION**	Conserve water by continuing water conservation programs and pricing to maintain per capita water use to be around 50 gallons per person per day.
2	**USE GROUNDWATER SUSTAINABLY**	Reduce groundwater extractions to stay within Basin sustainability criteria.
3	**REPLENISH WITH PURIFIED RECYCLED WATER**	Inject Basin with purified recycled water at strategically located well sites to maximize the recharge to raise groundwater levels to protective elevations in the Purisima A and BC aquifer units to prevent seawater intrusion in those units.
4	**REDISTRIBUTE PUMPING**	The quantity of planned purified water injected at the wells will support increased pumping from the Purisima A and BC units which will facilitate the District reducing pumping in other aquifer units (Tu, Purisima F, and Aromas Red Sands). This reduction of pumping in other aquifer units will raise groundwater levels to prevent seawater intrusion in those units.
5	**ANTICIPATE AND ADAPT**	The District is designing and constructing the treatment and conveyance facilities to accommodate additional future supplies to provide drought and climate change resiliency and reduce future expanded surface water diversions.

The District is immediately proceeding with the design and construction for 1,500 AFY and is designing and constructing the treatment and conveyance facilities to accommodate an additional 1,500 AFY. A project-level Environmental Impact Report (EIR) was certified December

2018. As described in the EIR:

> *An estimated 3,000 AFY of supplemental supply could be required to address basin-wide groundwater overdraft. Plans to achieve basin-wide sustainability are currently being evaluated and refined through an independent effort under the Santa Cruz Mid-County Groundwater Agency (MGA)...the conveyance infrastructure would be sized to accommodate the potential for future expansion of the Project's treatment system (if desired at a later time) and to convey up to approximately 2.7 mgd, or approximately 3,000 AFY, of purified water.*

After the Project comes on-line in 2023, project performance and monitoring will inform the District and the MGA of the effectiveness of the project towards achieving the State's mandate of basin sustainability. Should the MGA determine an additional project is required to meet the mandate, planning and design on the expanded facilities will begin. To accommodate this expansion, the District has included the following features into its project:

- Project agreements that allow for the expansion of facilities;
- Siting the treatment plant to accommodate additional treatment modules, when needed; and
- Constructing the underground conveyance to meet future capacity needs.

Description of Components: As shown in **Figure 2-4**, the Project includes components that have been grouped into three primary projects: Treatment Facilities Project (tertiary and advanced water purification facilities (AWPF) and pump stations); Conveyance Infrastructure Project (pipelines and appurtenances for the source water, purified water, and brine); and Seawater Intrusion Prevention Wells (SWIP) Wells (and associated monitoring wells). The tertiary facility will be constructed at the existing Santa Cruz Wastewater Treatment Facility (SC WWTF). The AWPF will be centrally located between the City and District's service area and will initially produce 1,500 AFY of purified water for near-term needs and be designed to accommodate expansion to 3,000 AFY to meet future needs of the City or the MGA. The purified water will then be conveyed to SWIP wells to replenish the overdrafted groundwater Basin and create a seawater intrusion barrier. The introduction of purified water into the Basin will allow for pumping to shift to wells more inland and allow coastal wells to rest and reduce the threat of seawater intrusion. The Project will also produce 340 AFY of recycled water for landscape irrigation and a construction fill station for the City.

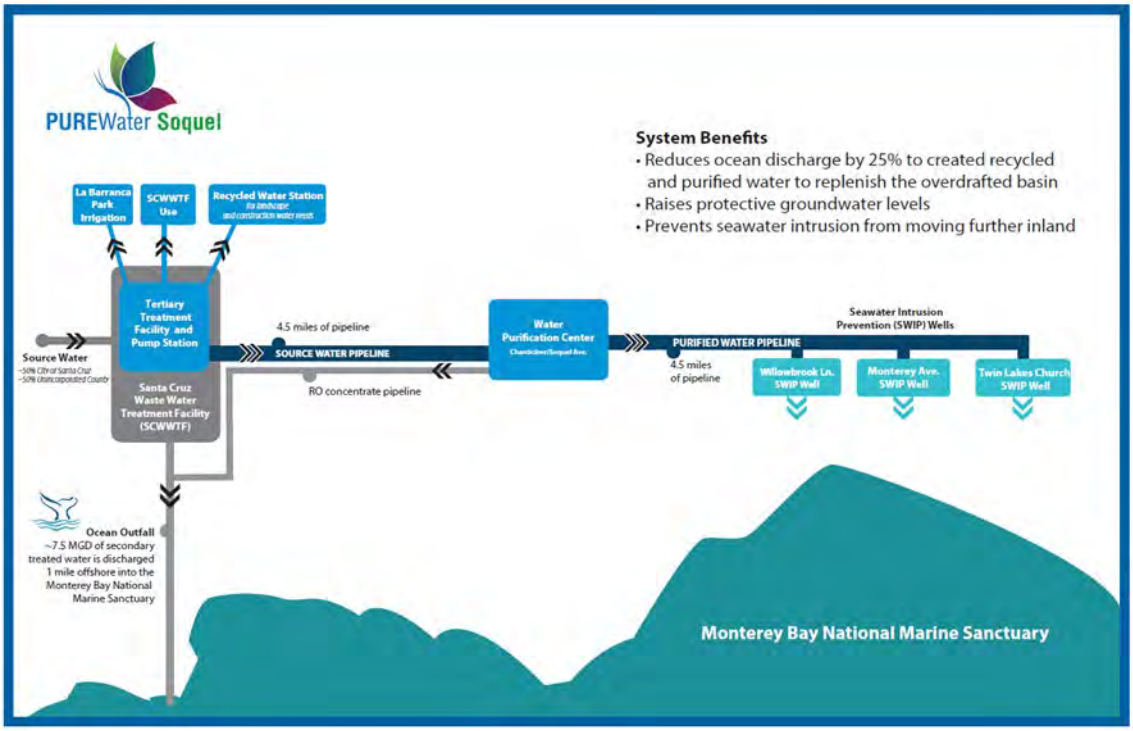

Figure 2-4 Pure Water Soquel Project Facilities

Description of Treatment:

Pure Water Soquel will utilize advanced purification technology to treat the source water to Indirect Potable Reuse (IPR) standards, which would allow for groundwater replenishment via SWIP wells. The Project will utilize pretreatment with ozone, microfiltration (MF), reverse osmosis (RO) and an ultraviolet light-based advanced oxidation process (UV AOP) to further purify the water to meet drinking water requirements and remove potential constituents of emerging concern (CECs).

Regional Collaboration:

- City of Santa Cruz: The City council approved the execution of the interagency agreement to formalize the security of secondary effluent and the tertiary treatment facility at the SC WWTF on June 25, 2019, in a unanimous 7-0 vote. The District Board also unanimously approved the agreement on July 17, 2019.
- Santa Cruz Mid-County Groundwater Agency: On November 15, 2018, the MGA unanimously voted to include Pure Water Soquel in the GSP. Pure Water Soquel is the only project identified in the plan thus far that has completed environmental review and is being implemented. Other water supply projects listed at this time are still conceptual.
- City of Capitola and City and County of Santa Cruz: Staff continues to collaborate on elements of the Project (conveyance and treatment facility locations) to ensure a greater understanding of existing conditions and streamline permitting requirements.

Advancing the Design and Implementation of the Project:

On December 18, 2018, the District Board certified the EIR as complete and approved Pure Water Soquel. The EIR was prepared in accordance with CEQA and includes analyses to support the environmental adequacy of the project.

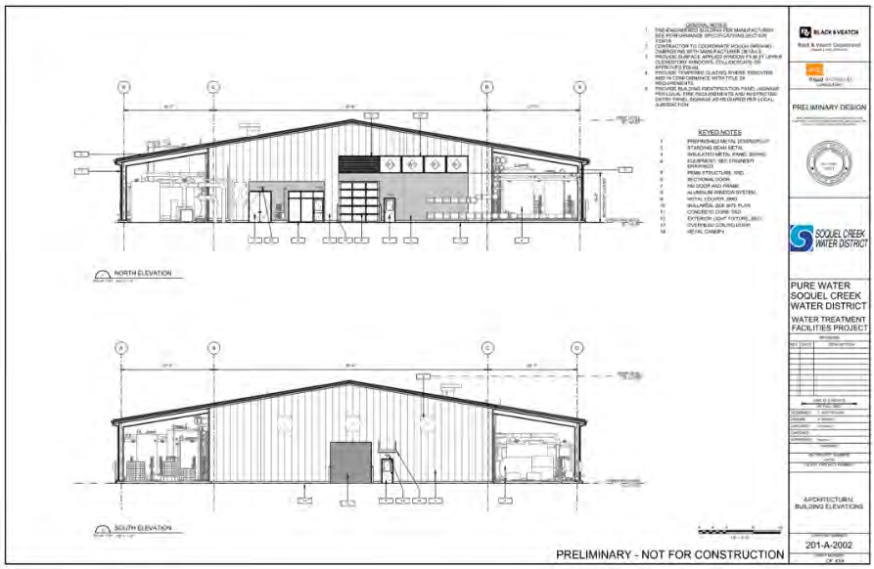

Figure 2-5 Design of the of the AWPF Facility at Chanticleer (Issued for Construction)

Following EIR certification and project approval, there continues to be steady progress and significant implementation milestones have been accomplished, including the initiation of construction:

- **Project Agreement:** The Project agreement with the City of Santa Cruz and the District regarding the source water, design, construction, start-up, and ownership of the tertiary treatment facility of Pure Water Soquel was executed by both agencies in Summer 2019.
- **Seawater Intrusion Prevention Wells:** Design was completed in 2020 and construction to drill and develop the wells was completed in July 2021.
- **Conveyance Infrastructure Project:** Procurement was conducted in 2019 and a design-build team was approved in February 2020 to conduct exploratory investigation and prepare the design and cost proposal. On March 16, 2021, a contract award for $34.5M for the construction was approved with groundbreaking in May 2021.
- **Treatment Facilities Project:** Procurement was conducted in 2019 and a design-build team was approved in March 2020 to conduct exploratory investigations, prepare the design and cost proposal, and support the permitting process. On October 5, 2021, a contract award for $87M for the construction and commissioning was approved with groundbreaking in December 2021.
- **Collaborative design** with the Design-Builder, City of Santa Cruz, and District for the tertiary treatment facility and the AWPF at Chanticleer (**Figure 2-5**) as well as cost validation (see Section 7—Budget).
- **Land acquisition:** The District purchased two adjoining properties on Chanticleer Ave. for the AWPF Water Purification Facility (2020).
- **Operations Agreement:** A draft long-term third-party operations agreement was prepared in early 2021 for the AWPF. In addition, kick-off for the operations agreement of the tertiary facility at the SCWWTF utilizing City of SC staff was initiated in March 2022.

Scientific Studies, Engineering, Environmental Evaluation, and Outreach


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Local Seawater Contamination

Last spring, beachgoers in the mid-county area may have seen a helicopter flying just offshore, towing a large hoop at the end of a long cable, several hundred feet above the surface of the ocean.

This was an advanced, airborne technology called SkyTEM, gathering data to produce high-resolution mapping of the groundwater aquifers beneath the ocean floor. On shore these same groundwater aquifers contain Soquel Creek Water District's (District) drinking water supply.

The final report from that high-tech survey, commissioned by the Santa Cruz Mid-County Groundwater Agency (MGA) and released earlier this year, where and the direction that intrusion is spreading.

The MGA's concern about seawater contamination is further validated by the fact that seawater intrusion is already 3-miles inland in the Watsonville area and 8-miles inland in the Monterey region.

"This information is essential in understanding both the immediate and future risks to the drinking water wells from seawater contamination," said John Ricker, Water Resources Division Director at the County of Santa Cruz.

To get this data, the MGA (including the SqCWD) commissioned a hydrological investigation into the condition of the groundwater basin, with Danish

The **SkyTEM Study** was conducted in Spring 2017 and was an innovative and technologically advanced method to evaluate the seawater-freshwater interface in our Basin offshore. The District, through the MGA, collaborated with SkyTEM and Ramboll, both international experts on groundwater exploration, to collect data using an aerial geophysical tool and determine the proximity of the seawater interface for the Basin along the coast. The results of this study presented in 2018, which have been peer reviewed by USGS and Stanford University, confirm that there is an immediate risk to the region's groundwater wells as seawater intrusion is either actively occurring or right at the coast for the entire Basin (**Figure 2-3**). The SkyTEM technology—developed in Denmark and never used in the United States to map and locate the physical interface of freshwater-seawater underground—has proven to be a resource that other communities across the country can rely on. The District has provided several presentations on the SkyTEM study and held a webinar in June 2019 for Bureau Title XVI regional coordinators that went into the data and analysis with the District's hydrologist. The District is committed to sharing the knowledge gained and funded by our stakeholders and federal and state partners. We are proud that this SkyTEM work in our region has been evaluated and validated by the USGS and Stanford University (Understanding a Growing Threat to Freshwater).

Equally as important as engineering and environmental aspects, the public outreach and education continues to be key to the implementation of Pure Water Soquel. In 2018, the District proudly received a significant national honor from WateReuse Association—the Award of Excellence for Outreach and Education, in recognition of the District's Pure Water Soquel Mobile Educational Trailer. This annual award recognizes significant success in advancing the public's understanding and knowledge of recycled water, and is a prestigious honor illustrating the

District's ongoing efforts to provide the community with clear, understandable, and useful information about water reuse. In addition to this unique mobile outreach, traditional informational methods such as handouts, newsletters, speaker presentations, website and social media have also been employed. In 2018, the District also created a Community Learning Center at our office that showcases the Pure Water Soquel Project, which was partially funded through the USBR Title XVI Feasibility Study grant.

Timeline and Schedule

Development and construction of the Project is on an aggressive schedule to protect against the imminent threat of further seawater intrusion and contamination of the District's sole source of supply. The key milestones, both past and anticipated, include:

- Feasibility, Environmental Review, and Project Approval: 2015-2018 – Complete
- Permitting and Design: 2018–2021 — Underway
- Construction: 2020–2023 — Underway
- Project Start Up: 2023
- Performance and Monitoring: 2023–2028

Project performance and monitoring will inform the District and the MGA of the effectiveness of the Project towards achieving the State's mandate of basin sustainability by 2040. Expansion to meet additional MGA needs could begin in 2028 and, assuming a similar project development timeline, could be on-line by 2033 and delivering up to 3,000 AFY.

Project Costs

The total estimated costs for planning, permitting, design, and construction are $209 million ($169 million for 1,840 AFY and $40 million expansion to 3,340 AFY (in 2022 Dollars). See Section 7 for details of project costs. The District is requesting $20.925 million in Bureau funding to complete design and construction of the Project. As specified in the funding conditions, planning, design, and construction activities completed prior to the transmission of the Review Findings are not eligible for funding.

Eligible Project costs begin September 2018 and continue through September 30, 2025 for this FY 2022 funding cycle. Eligible Project costs are $169.33 million and the District is seeking a $20.925 million Title XVI WIIN Act Grant, equal to the remaining balance of the $30 million authorization. This funding cycle extends through completion of construction and Project start-up.

3 EVALUATION CRITERIA

Criterion 1 – Water Supply

Subcriterion No. 1a. Stretching Water Supplies

1. How many acre-feet of water are expected to be made available each year upon completion of the Project? What percentage of the service area's annual water supply will the Project's reclaimed water provide upon Project completion?

Up to 3,340 AFY of supply will be available each year upon completion. 3,000 AFY represents

52% of the Basin's projected groundwater demand of 5,800 AFY. 340 AFY will be made available to the City of Santa Cruz to off-set surface water demands.

3,340 AFY of Supply: The District is immediately implementing the construction of the Project to produce 1,500 AFY of purified recycled water to replenish the groundwater basin and create a seawater intrusion barrier. This Project is critical to ensure protection of the District's wells, which are closest to the coast and most vulnerable to contamination with seawater. Pure Water Soquel will protect the District's sole source of supply and all other users inland of the District service area. Additionally, this immediate step of the Project will supply 340 AFY of recycled water for landscape irrigation and a construction fill station for the City allowing them to off-set their surface water demands by an equivalent amount.

When needed, expansion with Phase 2 of the Project could come on-line in 2033, 10 years after initial operation. The Project will provide an additional 1,500 AFY to achieve the State's mandate of Basin sustainability by 2040, create drought resiliency, and adapt to climate change conditions. The Project will operate for a minimum of 50 years beginning in 2023.

52% of the Region's Projected Demand: Total groundwater pumping within the Coastal Region (**Figure 3-1**) of the Santa Cruz Mid-County Groundwater Basin is 5,800 AFY, of which the District's long-term forecast demand is 3,800 AFY. Groundwater modeling demonstrates that if the District limits its groundwater extractions to no more than 3,800 AFY, injects 1,500 AFY into the basin, and redistributes groundwater pumping across aquifer units, then groundwater elevations will rise to protective levels while maintaining production consistent with demand.

Pure Water Soquel will deliver the required 1,500 AFY to protect 100% of the District's supply (since its solely groundwater) and comprises 39% of the District's projected annual long-term demand of 3,800 AF. Groundwater modeling indicates that the total Basin deficit is 3,000 AFY and an additional 1,500 AFY is required to achieve the State's mandate of Basin sustainability by 2040, create drought resiliency, and adapt to climate change conditions.

Thus, the District is investing in the design and construction of facilities to accommodate an additional 1,500 AFY, as described in the Feasibility Study and certified EIR. With expansion of Phase 2, the Project will increase the annual project yield to 3,000 AFY and supply 52% of the Basin demand.

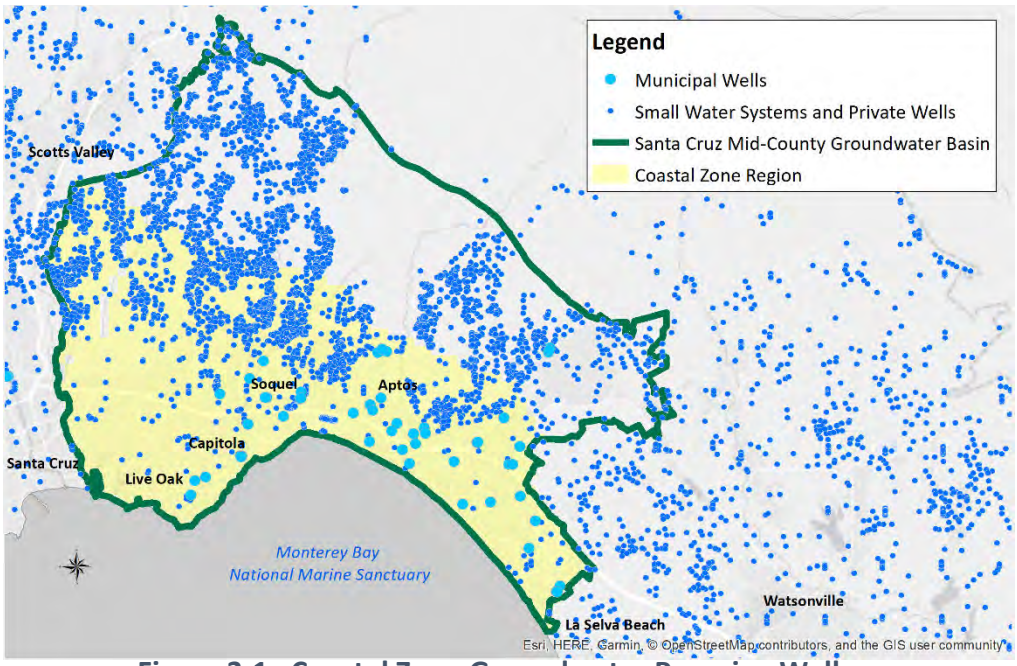


Figure 3-1 Coastal Zone Groundwater Pumping Wells

The Coastal Zone region, in yellow, is relied upon by the City of Santa Cruz, Soquel Creek Water District, Central Water District, and private pumpers. Collectively this represents 5,800 AFY of annual water demand.

2. Will the Project reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies? Explain.

Pure Water Soquel will reduce and/or eliminate the development of new or expanded non-recycled water supplies including desalination, surface water diversions, and stormwater capture.

As described above, Pure Water Soquel can produce 100% of the water supply needed to achieve basin sustainability. In the absence of the Project, the District will be forced to reconsider desalination or other sources of non-recycled supplies such as river water or storm water capture, as described below.

Desalination: Development of a desalination project within the Santa Cruz Mid-County region is an alternative; however, environmental and permitting issues with compliance with the Ocean Plan Amendment and feasibility issues related to intake and brine discharge proves to be challenging in terms of timeliness, environmental obstacles, and affordability. In addition, the City of Santa Cruz and the District partnered on a joint desalination project in the early 2000s that, after investing $14 million dollars on a pilot desalination facility and numerous technical studies and reports, was not pursued due to political issues and concerns regarding energy use and marine impacts.

Surface Water: The City of Santa Cruz is the only water purveyor in the region with surface water rights. A non-recycled water option is to take excess river water, when available, for conjunctive use; however, the District has no surface water rights of its own and would need to partner with

the City or apply for its own water rights through the State. The City and District are currently evaluating the technical feasibility through a pilot project and modeling with various climate change scenarios. Recent modeling illustrates that:

> *"there isn't enough surface water to reliably solve both the City's need for a drought supply and to protect groundwater resources in our part of the basin from seawater intrusion and to reliably meet Soquel's need for water to create and maintain a seawater intrusion barrier in its service area." (Rosemary Menard, City Water Director, Santa Cruz Sentinel Op-Ed, May 26, 2019).*

In addition, there are other challenges that would need to be addressed if the water was available: multiple years to acquire water rights and completion of a habitat conservation plan, permitting, environmental review, and potential political issues. As an example of potential environmental hurdles, below is an excerpt from the National Marine Fisheries Service (NMFS) that was received in 2010:

> *"The San Lorenzo River and Soquel Creek watershed are in severe overdraft…water diversions have resulted in major adverse impact to all life stages of salmon and steelhead in Santa Cruz County streams. In order to adequately address these impacts, it will be necessary to comprehensively address the water use of all diverters in the watersheds of Santa Cruz County."*

Over the course of the pilot study from 2015–2020, surface water was not frequently available due to lack of rainfall and availability of excess water from the City of Santa Cruz. Given that the U.S. Drought Monitor came out in April 2021 that further depicts an intense drought plaguing our region of northern California experiencing weather that ranges from "Abnormally Dry" to "Exceptional Drought.", surface water continues to be an unreliable resource.

Stormwater Capture: There is local interest regionally to pursue stormwater capture and the County of Santa Cruz and the District is conducting a small stormwater recharge project with the aid of state grant funding to collect field conditions data to estimate capital and life cycle costs). However, the quantity of water these projects would yield is extremely limited (less than 100 AF), is dependent on rainfall, is difficult to quantify how much would contribute to aquifer recharge for drinking water purposes, and the lifecycle costs could be extremely high and financially infeasible.

In addition to the political, environmental, and economic challenges associated with these non-recycled water supply alternatives, none of these alternatives involve replenishment of the groundwater basin and protection from seawater intrusion. Pure Water Soquel meets all of the project objectives and will eliminate the need to develop any of these non-recycled supplies.

3. Will the Project alleviate pressure on existing water supplies and/or facilities? If so, please identify the supplies and/or facilities and explain how they will be impacted by the Project, including quantifications.

Pure Water Soquel will alleviate pressure on the overdrafted groundwater Basin and surface water diversion facilities.

The Project is aimed at supplementing natural recharge of the groundwater to alleviate pressure

on the critically overdrafted groundwater basin. Total groundwater pumping is 5,800 AFY, of which the District's demand is 3,800 AFY. Hydrologic analysis and evaluations estimate that the District must limit its net groundwater extractions to no more than 2,300 AFY to alleviate the overdraft in the Basin and protect against seawater intrusion. That means the District must supplement Basin supplies with 1,500 AFY to meet water demands. Groundwater modeling demonstrates that if the District injects 1,500 AFY into the Basin and redistributes groundwater pumping across aquifer units, then groundwater elevations will rise to protective levels while maintaining production consistent with demand. SWIP wells have been strategically located by the District's hydrologist to replenish the Basin and create a seawater intrusion barrier. The wells have been sited to maximize recharge and raise groundwater levels to protective elevations in the Purisima A and BC aquifer units. The 1,500 AFY of injected water will allow the District to increase pumping from those units while maintaining protective groundwater elevations. Increasing pumping from the Purisima A and BC units then allows the District to reduce pumping from the Tu, Purisima F, and Aromas Red Sands aquifer units. Reducing pumping from these units allows the groundwater levels to rise to protective levels. Phase I of Pure Water Soquel will deliver the required 1,500 AFY to alleviate pressure on the Basin while reliably meeting its groundwater demand of 3,800 AFY. As shown in the groundwater modeling and particle tracking **Figure 3-2**, purified water that is injected into the groundwater basin through the SWIP wells will provide multi-directional flow confirming that this water is replenishing and serving as a new source of groundwater and creating a seawater intrusion barrier with positive outflow towards the ocean.

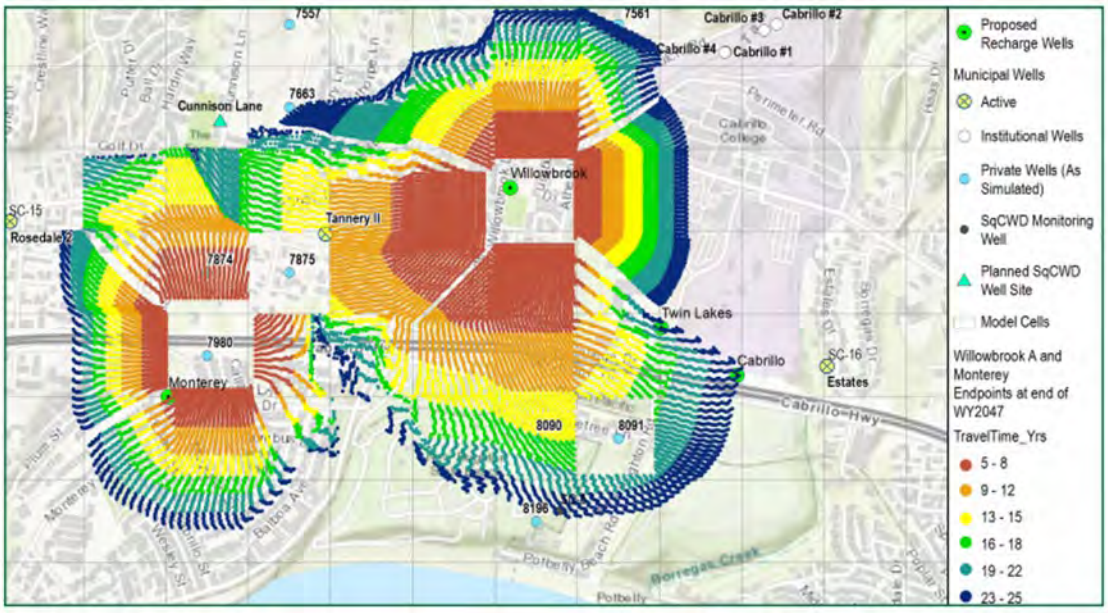


Figure 3-2 Groundwater Modeling and Particle Tracking: Willowbrook-Monterey Simulations. Direction and flowrates of purified water to municipal or private groundwater wells.

As stated above, the City of Santa Cruz relies on groundwater and surface water to meet its demands. Recent modeling illustrates that there isn't enough surface water to reliably solve both the City's need for a drought supply and to protect groundwater resources in their part of the Basin from seawater intrusion. Even with ongoing conservation efforts and up to 15% water-use

restrictions during drought conditions, additional water supplies are needed to meet the City's potable water needs for public health and safety, economic stability, and provide water for protection of endangered species. The City is currently considering a water supply alternative that requires increased surface water diversions from already stressed surface water resources. The Project could supply the City with up to 1,500 AFY, allowing them to avoid increased surface water diversions and alleviate pressure on the overdrafted watersheds. The Project could also provide the additional supplies needed to address Basin-wide groundwater overdraft and achieve Basin sustainability. Plans to achieve basin-wide sustainability as part of the Santa Cruz Mid-County Groundwater Agency (MGA) efforts could require the Project being operated at 3,000 AFY.

In summary, the Project will alleviate pressure on groundwater and surface water supplies both inside and outside of the District's service area. The Project will allow the District to:

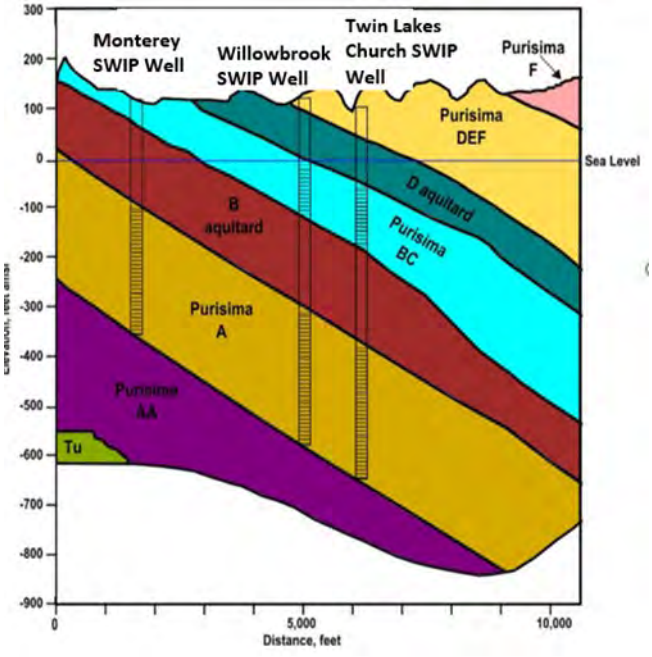
- Continue to provide fresh groundwater to District customers, including residences and businesses that depend on a reliable and safe water supply
- Rely more on the Purisima Formation wellfield, which would be better protected behind the seawater intrusion barrier created by the purified water injection wells. This redistribution would enable the District to reduce and alleviate pumping in the Aromas Red Sands aquifer by up to 750 AFY which is a connected system that is heavily used for agricultural uses by other basin users to the south of the District.
- Halt the freshwater/seawater interface from moving farther inland by replenishing the groundwater basin with 1,500 AFY thereby increasing protective groundwater levels that results in a higher head and pressure gradient compared to seawater.
- Capture and reuse approximately 25% of the existing treated wastewater effluent that is currently considered a waste stream and discharged to the Monterey Bay National Marine Sanctuary instead put it to beneficial use and turn into a groundwater resource.
- Protect the Coastal Region of the basin and preserve the 5,800 AFY of groundwater extractions by other coastal pumpers.
- Reduce or eliminate the need to increase surface water diversions.

4. What performance measures will be used to quantify actual benefits upon completion of the Project?

The District will measure groundwater extractions, groundwater elevations, and chloride concentrations to quantify performance and benefits of the Project. The Project goal is to protect the District's sole source of drinking water supply from seawater contamination while still meeting projected demands and achieving Basin sustainability by 2040. The desired outcome of the Project goal is to increase groundwater levels to protective elevations in the multiple drinking water aquifer units while maintaining production consistent with demand. Pure Water Soquel is the only water supply Project listed in the region's Groundwater Sustainability Plan currently being implemented (MGA, 2019) to address the critical overdraft to the state's mandate. Once operational and upon completion of the Project, project benefits will be quantified with

performance measures described below:

1. **Groundwater injections/extractions:** Both the injection of 1,500 AFY and the groundwater extraction of no more than 3,800 AFY will be measured to ensure compliance with the project performance criteria established by the groundwater modeling. Groundwater injection well meters will record injection rates and volume at each well and then be summed to get the total water injected from the well. Records will be kept showing the amount of purified water added to the Basin through the injection wells. The injection wells (shown at right) will include the installation of a meter to monitor and record the injection rate at each well. It is assumed that the injections of purified water will occur at a steady state all year long except for periods of periodic backflushing for maintenance or if other components of the project need to have temporary service/maintenance performed.



   It is assumed that the annual goal of injected water is 1,500 acre-feet per year. The readings will be recorded hourly and summed to calculate daily, monthly, and annual totals. Target injection rate will be approximately 500 AFY at Monterey, between 500–1000 AFY at Willowbrook, and between 500–1000 AFY at Twin Lakes Church Well for a total of 1,500 AFY. Similarly, groundwater extraction wells will continue to be recorded for both volume and extraction rates to ensure that pumping does not exceed 3,800 AFY to stay within the basin sustainability goals.

2. **Groundwater level measurements:** As documented, the Basin is in a state of critical overdraft, which has resulted in groundwater levels that are too low to protect against seawater intrusion. Groundwater elevation measurements at production and test wells are necessary to ensure the Project is contributing to the recovery of the aquifers and the increase in groundwater elevations to the level necessary to protect against seawater intrusion. Current District protective elevations for coastal monitoring wells are listed in **Table 3-1** and shown in **Figure 2-2**.

   The District's current monitoring program will continue to evaluate groundwater elevations and performance of Pure Water Soquel. Pressure transducer loggers and bladder pumps are installed at each of the District's coastal monitoring wells for monitoring groundwater levels and groundwater quality respectively. Groundwater level data are downloaded from the loggers quarterly and the wells are also manually sounded to check and calibrate the logger data quarterly. These data are evaluated semi-annually.

Table 3-1: Operational Strategies to Achieve Basin Sustainability	
Coastal Monitoring Well	Protective Elevation (ft above sea level)
Moran Lake Medium	5
Soquel Point Medium	6
Pleasure Point Medium	6.1
SC-1A	6.2
SC-3A	10
SC-5A	13
SC-9C	10
SC-8D	10
SC-A1B	3
SC-A8A	6
SC-A2A	3
SC-A3A	3

3. Groundwater quality measurements: Salinity levels in monitoring and production wells will be monitored at multiple elevations. The Project is intended to end the physical and economic damage to coastal lands from seawater intrusion. Salinity levels will be measured to ensure seawater is not contaminating the groundwater basin. The Project goal is to prevent chloride levels from increasing in all production and monitoring wells above the following thresholds:
   - Unintruded Wells
     - Chloride concentrations stay below 150 mg/L in all production wells.
     - Chloride concentrations stay below 150 mg/L in all inland monitoring wells.
     - Chloride concentrations stay below 250 mg/L in all coastal monitoring wells.
   - Intruded Coastal Monitoring Wells chloride concentrations do not increase above the past five-year maximum chloride concentration.

The District will also conduct another Aerial Geophysical Mapping exercise to measure groundwater quality. In 2017, the District as part of the Santa Cruz Mid-County Groundwater Agency, conducted aerial geophysical mapping using an innovative technology developed in Denmark, to map the freshwater/seawater interface along the coastline. Once operational, we propose this measuring be performed every five years to track the movement of the seawater intrusion (**Figure 2-4**) and measure progress of basin sustainability as we expect it to halt the interface from moving farther inland.

Subcriterion No.1b. Contributions to Water Supply Reliability

1. Will the Project make water available to address a specific concern? Consider the number of acre-feet of water to be made available. Explain the specific concern and its severity. Also explain the role of the Project in addressing that concern and the extent to which the Project will address it.

Pure Water Soquel is designed to address a multitude of water resource concerns.

Water Supply Shortages and Groundwater Depletion

Pure Water Soquel is designed to address the District's critical water supply shortage. The District declared a Water Shortage and Groundwater Emergency in June of 2014 and has extended the declaration continuously into 2021. The District relies on groundwater to meet 100% of its forecasted demand of 3,800 AFY. However, hydrologic analysis and evaluations estimate that the District must limit its **net** groundwater extractions to no more than 2,300 AFY to alleviate the overdraft in the Basin and protect against seawater intrusion. That means the District has a water supply shortage of 1,500 AFY to meet water demands. The Project will supply 1,500 AFY of purified reclaimed water for groundwater injection and satisfy 100% of the District's water supply shortage.

Don't be confused with our agency's name, Soquel Creek Water District. We receive no water from surface water sources. Nor do we receive any federal or state imported water. Our water supply is 100% groundwater that is severely challenged to be a sustainable and reliable resource for our community. Purified recycled water would provide a critical piece in our plan to create a diversified and resilient supply to meet our challenges listed below.

Pure Water Soquel is designed to address the City of Santa Cruz critical water supply shortage. The City relies on groundwater and surface water to meet its demands. Recent modeling illustrates that there isn't enough surface water to reliably solve both the City's need for a drought supply and to protect groundwater resources in their part of the Basin. Even with conservation and water-use restrictions, the City needs approximately 1,500 AFY to meet water supply shortages during drought years. The Project could supply the City with up to 1,500 AFY, allowing them to avoid increased surface water diversions and satisfy 100% of the District's water supply shortage. As listed in the MGA's Groundwater Sustainability Plan, an estimated 3,000 AFY could be required to address basin-wide groundwater overdraft.

Water Quality Issues

Pure Water Soquel will address and protect against seawater contamination moving further inland by creating a freshwater-seawater intrusion barrier to defend the fresh drinking water wells that are solely relied upon in the Santa Cruz-Mid County region. The groundwater basin has several naturally occurring contaminants such as ammonia, hexavalent chromium, arsenic, iron, and manganese as well as TCP, a man-made contaminant. The purified water improves the groundwater quality by injecting and replenishing with higher-quality water than existing groundwater. The Project also improves the delivered water quality through pumping optimization, increasing pumping of wells closer to the PWS injection wells (with the purified water) and reducing pumping of wells with lesser-quality/impaired naturally occurring constituents.

Seawater Intrusion

Seawater intrusion occurs when groundwater levels decline to near or below sea-level, creating a downward gradient for seawater to creep inland and contaminate the groundwater basin. A coastal monitoring network in the Basin was developed in the 1980s because of the high risk of seawater intrusion. Seawater intrusion is already present within the Basin at Soquel Point and in the La Selva Beach area. Coastal monitoring wells, several of which were installed where seawater intrusion was expected, assess, and track the progression of seawater intrusion into

the Basin's productive aquifers. These coastal sentinel wells have tracked the progressive contamination of the Basin at the coast. Increasing concentrations of salts and other contaminants are being detected in active coastal wells, particularly in the Aromas Red Sands Formation. In key areas of the groundwater basin, chlorides have measured 17,500 mg/l, 6900% increase from the secondary Maximum Contaminant Level (MCL) of 250 mg/L. Water contaminated by seawater is not drinkable and poses a serious health issue if consumed.

The District has responded over the years by drastically pumping less water due to aggressive conservation efforts and moving groundwater pumping away from the coast. However, given the continuing threat of seawater intrusion, the District declared a Groundwater Emergency in 2014 and a Stage 3 water shortage to reduce water consumption by 25% and encourage water conservation to preserve the limited fresh groundwater. The declared emergency and Stage 3 curtailment has remained in place since 2014.

While the seawater contamination was detected and known at both ends of the basin in the Live Oak area and La Selva Beach, the proximity of the freshwater/seawater interface along the coast was not certain until recently. A study was commissioned in 2017 to assess the salinity of groundwater aquifers along the Monterey Bay coastline. The study detected the location of freshwater and seawater in the Basin (both inland and offshore) and the data indicated that seawater intrusion is occurring along the entire coastline of the District's service area immediately offshore. The study emphasized the need for immediate actions that would facilitate the recovery, maintenance, and protection of groundwater levels to prevent further onshore intrusion.

The Project is the immediate action aimed at supplementing natural recharge of the groundwater to raise groundwater elevations and protect against seawater intrusion. Total groundwater pumping is 5,800 AFY, of which the District's demand is 3,800 AFY. Hydrologic analysis and evaluations estimate that the District must limit its net groundwater extractions to no more than 2,300 AFY to alleviate the overdraft in the Basin and protect against seawater intrusion. Groundwater modeling demonstrates that if the District injects 1,500 AFY into the Basin and redistributes groundwater pumping across aquifer units, then groundwater elevations will rise to protective levels while maintaining production consistent with demand (**Figure 3-3 and Figure 3-4**). SWIP wells have been strategically located by the District's hydrologist to replenish the Basin and create a seawater intrusion barrier. The wells have been sited to maximize recharge and raise groundwater levels to protective elevations in the Purisima A and BC aquifer units. When 3,000

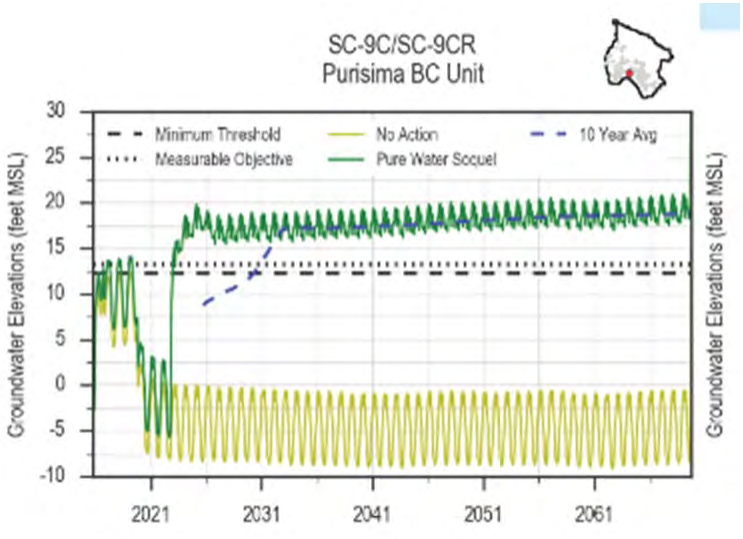


Figure 3-3 Pure Water Soquel - Groundwater Elevations at Monitoring Well SC-9C

AFY is injected, groundwater levels may aid in rising to protective elevations basin-wide. Coupled with pumping redistribution, Pure Water Soquel will deliver 100% of the supply needed to protect the Basin from further seawater intrusion.

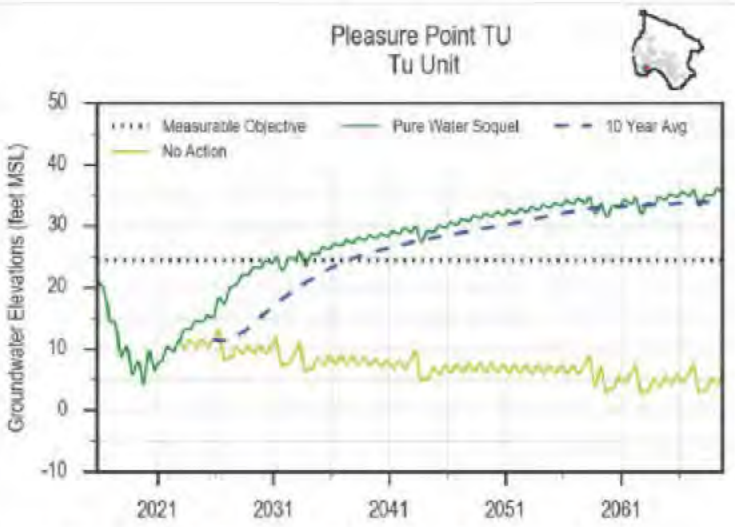


Figure 3-4 Pure Water Soquel - Groundwater Elevations at Pleasure Point Monitoring Well

Water Supply Reliability

Pure Water Soquel will be using a drought-resilient and reliable water supply by recycling municipal wastewater produced in the District service area which is collected by the Santa Cruz County Sanitation District (SCCSD). The SC WWTF has an average dry weather (ADW) design capacity of 17 MGD and was designed to treat up to 81 MGD during peak hour wet weather (PHWW). The ten-year average daily flow rate is approximately 7.7 MGD with future average daily flows projecting as 8.3 MGD (M. Cubed, 2015) which will provide ample available source water for the expanded Pure Water Soquel Project when projected flows are 3,000 AFY for purified water and 340 AFY for tertiary water.

Natural Disasters that May Impact Water Supply Infrastructure

If a natural disaster, such as a drought, earthquake or wildfire (which are known to frequently occur in California's central coast and was severely impacted by the 2020 CZU Lightning Complex fires), were to impact the District's higher-yield extraction wells in the most easterly or westerly portions of the District, the centrally located extraction drinking water wells near the Pure Water Soquel Seawater Intrusion Prevention Wells (SWIP) could be relied upon to provide uninterruptable water supply.

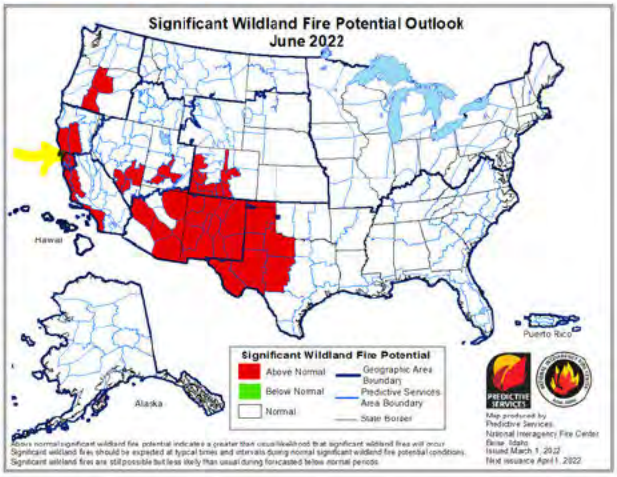


Figure 3-5 Significant Wildland Fire Potential Map

With natural disasters occurring, the Pure Water Soquel Project has the ability to provide mutual aid to nearby City of Santa Cruz, which is heavily reliant on surface water sources. At 1,500 AFY, the Project can provide short-term aid and, when expanded to 3,000 AFY, it could provide a long-term solution for drought and fire protection.

Heightened Competition for Water Supplies

Groundwater is the only source of water supply for the District and most of the Santa Cruz Mid-

County region. The City of Santa Cruz relies on surface water that is heavily impacted by drought conditions. With wastewater generated, collected, treated, and disposed of after its single-use every day at the Santa Cruz Wastewater Treatment Facility, the Pure Water Soquel Project provides a reliable, drought-proof supply that is superior than an overdrafted and seawater contaminated groundwater supply and a rainfall-dependent surface water supply.

Availability of Alternative Water Supplies

With no access to imported supplies, only desalination or surface water supplies are available alternatives to recycled water. As previously described, after investing $14 million dollars on a pilot desalination facility and numerous technical studies and reports, desalination was not pursued due to political issues and concerns regarding energy use and marine impacts. Environmental and permitting issues with compliance with the Ocean Plan Amendment and feasibility issues related to intake and brine discharge continue to be challenging in terms of timeliness, environmental obstacles, and affordability.

The second alternative is surface water, take excess river water, when available, for conjunctive use. However, the District has no surface water rights of its own and would need to partner with the City or apply for its own water rights through the State. The City and District are currently evaluating the technical feasibility through a pilot project and modeling with various climate change scenarios. Over the course of the pilot study from 2015–2020, surface water was not frequently available due to lack of rainfall and availability of excess water from the City of Santa Cruz. Additionally, the U.S. Drought Monitor came out in April 2021 further depicting an intense drought plaguing our region of northern California experiencing weather that ranges from “Abnormally Dry” to “Exceptional Drought.” Surface water continues to be an unreliable resource.

Alternative water supplies face significant environmental, political, and financial challenges. The time to build public acceptance, secure project approvals and water rights, complete environmental documentation and permitting, and secure project funding and financing will take many years. Design and construction of the project will also take many years. Therefore, it’s fair to assume that, without Pure Water Soquel, the District could be required to reduce groundwater pumping to 2,300 AFY for decades, at least until 2040 as mandated by SGMA.

Increasing Cost of Water Supplies

An economic study found the Project provides over a $900M economic benefit to the region (Haddad, 2018) that supports tourism, agriculture, and education. The region cannot afford to endure additional water use restrictions and increasing water insecurities. While the per acre foot cost of the Project may seem high when compared to other large-scale projects operating in other areas of the country, Pure Water Soquel is the most cost effective and feasible project for this region. The Project will provide a reliable water supply to sustain a thriving community but comes at a significant cost to the small base of ratepayers in the District. The District serves an estimated 40,400 customers through 15,800 connections, of which 94% are residential. The water rate increases to fund the Project have been significant. The District adopted five years of rate increases in 2019 for 9% annually to occur each year through 2023.

A Santa Cruz regional water and sewer service affordability assessment was completed in

October 2021, based on rates and charges in effect as of July 1, 2021, providing a "snapshot" of current affordability in the region. The assessment found that "*water and sewer service rates have been escalating faster than inflation in recent years and this trend is projected to continue. Several of the water and sewer service providers in the study region have either adopted or notified customers of proposed rate increases. Sustained rate increases can be expected to erode utility service affordability unless increases in household income keeps pace. Over the last 10 years, the Median Household Income (MHI) in California has increased at an average rate of 3.6% annually*." As previously stated, the District has adopted a 9% rate increase for five years, beginning in 2019, which will significantly outpace projected increases to the MHI, creating water affordability concerns for the service area.

To reduce the financial burden on our ratepayers, the District has been seeking outside funding assistance and desires to partner with state and federal agencies to invest in Pure Water Soquel because of the multiple benefits the Project provides.

2. Will the project address climate change as described in E.O. 14008: Tackling the Climate Crisis at Home and Abroad?

E.O. 14008: *Tackling the Climate Crisis at Home and Abroad* focuses on increasing resilience to climate change and supporting climate resilient development. As stated in the E.O., "*we have a narrow moment to pursue action at home...in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents."*

Over 70% of the larger coastal communities worldwide that rely on groundwater are faced with seawater contamination. Seawater intrusion is a condition whereby groundwater is withdrawn at a faster rate than it can be replenished by rainfall and seawater or ocean water moves into the freshwater aquifers. When groundwater levels are too low, they can become contaminated with seawater. This condition can be irreversible and can result in either abandoning wells or requiring costly treatment. Seawater intrusion is already present in the Santa Cruz Mid-County Basin and reduced precipitation and rising sea levels caused by climate change are increasing the progression of seawater intrusion.

Coastal monitoring wells assess and track the progression of seawater intrusion into the Basin's productive aquifers. These coastal sentinel wells are sampled quarterly for groundwater levels, total dissolved solids, and chloride concentrations and have tracked the progressive contamination of the Basin at the coast (see red and orange dots shown in **Figure 2-2**). Given the imminent threat of seawater intrusion, the District declared a Groundwater Emergency in 2014 and a Stage 3 water shortage to reduce water consumption by 25% to preserve the limited fresh groundwater. The declared emergency has remained in place since 2014.

While the seawater contamination was detected and known at both ends of the Basin, the proximity of the freshwater/seawater interface along the coast was not certain until recently. A study was commissioned in 2017 to assess the salinity of groundwater aquifers along the Monterey Bay coastline. The study, using aerial geophysical tools, detected the location of freshwater and seawater in the Basin (both inland and offshore) and the data indicated that seawater intrusion is occurring along the entire coastline of the District's service area immediately offshore (**Figure 2-3**). Moreover, the results of the study demonstrate that the

extent of elevated salinity levels among coastal aquifers is substantial in this area. The study emphasized the need for immediate actions that would facilitate the recovery, maintenance, and protection of groundwater levels to prevent further onshore intrusion (HydroMetrics WRI, 2018). The District recognizes "*we have a narrow moment to pursue action at home...in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents.*"

Coastal groundwater elevations must rise to protective levels to prevent further seawater intrusion. Hydrologic analysis and evaluations estimate that the District must limit its net groundwater extractions to no more than 2,300 AFY and secure approximately 1,500 AFY of supplemental supply to contribute to basin recovery and protect against seawater intrusion (Water Systems Consulting, 2015). The Project will deliver the supplies necessary to protect the Basin and build climate resiliency.

3. Will the project help create additional flexibility to address drought? Will water made available by this project continue to be available during periods of drought? To what extent is the water made available by this Project more drought resistant than alternative water supply options? Explain.

The Project will supply 3,000 AFY, including during drought periods, and will create operational flexibility in the groundwater extractions to optimize supplies during drought. The Project produces purified water to replenish the overdrafted groundwater Basin and create a seawater intrusion barrier. The introduction of purified water into the Basin will allow for pumping to shift to wells more inland and allow coastal wells to rest and reduce the threat of seawater intrusion. The Project creates flexibility and allows the District to optimize pumping in response to drought and changing conditions.

As documented above, Pure Water Soquel will be recycling municipal wastewater from the SC WWTF, a drought resilient and reliable water supply. In all months, the SC WWTF flow greatly exceeds the amount needed before treatment to produce 3,000 AFY for Pure Water Soquel. The water supply source will reliably supply the flows needed to meet the demands, including during periods of drought.

Pure Water Soquel will be recycling municipal wastewater, a drought resilient and reliable water supply. The municipal wastewater produced in the District service area is collected by the Santa Cruz County Sanitation District (SCCSD). It is collected and piped to the City of Santa Cruz's (City) Wastewater Treatment Facility (SC WWTF) which treats a service area of approximately 135,000 people. In 1990, the City and SCCSD entered into an agreement to allow SCCSD to discharge up to 8 MGD of wastewater at the SC WWTF.

The SC WWTF has an average dry weather (ADW) design capacity of 17 MGD and was designed to treat up to 81 MGD during peak hour wet weather (PHWW). The ten-year average daily flow rate is approximately 7.7 MGD, which incorporates the current drought and conservation measures implemented over the past few years. These numbers may increase over time without the influence of drought or conservation measures.

Future flows for the SC WWTF were estimated using the Santa Cruz Water Department's 2015 Econometric Analysis of Demand and Forecast (M.Cubed, 2015) as shown in **Table 3-2**. The

projected wastewater flows were estimated through 2035 allowing for population growth as well as water conservation measures.

Table 3-2 Santa Cruz Wastewater Treatment Facility Projected Influent Flows and Pure Water Soquel			
	2023	2025	2035
Average Influent Daily Flow* (MGD)	8.08	8.06	8.29
Pure Water Soquel Influent Needs (MGD)	2.32	2.32	4.64
Pure Water Soquel Recycled Water Produced	1,500 AFY (Purified) 340 AFY (Tertiary)	1,500 AFY (Purified) 340 AFY (Tertiary)	3,000 AFY (Purified) 340 AFY (Tertiary)
** Based on 2015 Santa Cruz Water Supply Advisory Committee's Econometric Analysis of Demand and Forecast (M. Cubed 2015)*			

Other water supply options considered: surface water and desalination are currently projects in proof-of-concept with technical feasibility/environmental review and have shortcoming with water reliability and/or political pressures, whereas the Pure Water Soquel Project is in active design and construction.

4. Has the area served by the Project been identified by the United States Drought Monitor as experiencing severe, extreme, or exceptional drought at any time in the last four years?

Yes, the area has experienced these classified droughts in the last four years and for a majority of the years in the last decade (as documented by the US Drought Monitor and depicted in the drought monitor maps in **Figure 3-6**). This past January (2022) was the third driest January in 128 years.

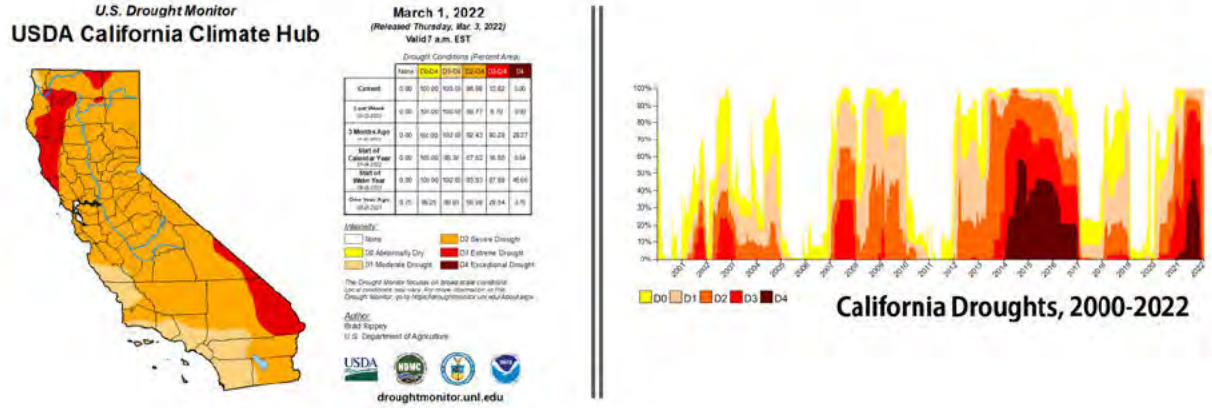


Figure 3-6 Drought Monitor Maps (2000-2022)

5. Has the area served by the Project been designated as a drought disaster area by the State in the last four years?

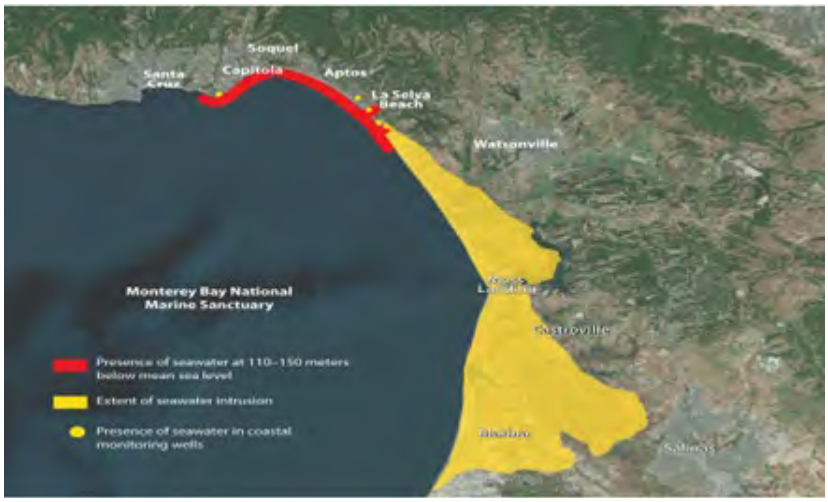


Figure 3-7 Seawater Intrusion occurring along the entire coastline of the Monterey National Marine Sanctuary

Board Declared Groundwater Emergency and Stage 3 Shortage Emergency: Given the District's complete reliance on groundwater supplies, the service area is extremely vulnerable to persistent drought conditions. Due to the California drought, historical overdraft condition of the groundwater basin, and seawater intrusion at the coast (**Figure 3-7**), the District Board of Directors declared both: a groundwater emergency and Stage 3 Shortage Emergency on June 17, 2014, with the passage of Board Resolutions 14-22 and 14-23. The call to action was for an immediate 25% reduction of water consumption from customers. **The District has been in a declared Stage 3 Shortage Emergency for seven straight years**, as both declarations have remained in place and the Board approved Resolution 19-08 to emphasize that the Stage 3 Water Shortage was still enacted in our region after many areas in California lifted their restrictions following the 2019 rainfall. Our region continues to have imminent threat of saltwater contamination in our drinking water supplies.

State of California Declared Basin Critically Overdrafted: Following this local recognition, the State also identified the dire conditions in the region, and the California Department of Water Resources designated the Santa Cruz Mid-County Groundwater Basin (3-001) as "critically overdrafted", one of 21 basins (out of 517 alluvial basins throughout California). It also deemed the area a "high priority" because of its sole reliance on groundwater.

Drought-Related Disaster Area: In addition, Santa Cruz County, the region that Pure Water Soquel will serve, has been declared numerous times over the last decade as a drought-related disaster area. In 2022, the US Department of Agriculture designated Santa Cruz County as a Primary Natural Disaster Area due to drought.

EVALUATION CRITERION 2: ENVIRONMENT AND WATER QUALITY

The mission of Soquel Creek Water District is to provide a safe, high quality, reliable, sustainable water supply to meet our community's present and future needs in an environmentally sensitive and economically responsible manner. In supporting this mission, the District Board has adopted a core value of environmental stewardship. In addition to supplying a reliable, drought resilient water supply, Pure Water Soquel will improve surface and groundwater and will free up water for federally listed threatened and endangered species, as described below.

1. Will the Project improve the quality of surface water or groundwater?

Groundwater Quality Improvements

Assurance of high-quality and sustainable groundwater is a top priority of the District and the Santa Cruz Mid-County Groundwater Agency. The Pure Water Soquel Project will improve the quality of the groundwater in two main ways:

1. **Inject Higher Quality Water into the Groundwater Basin:** Purified recycled water is of higher quality water than the existing groundwater. In addition to seawater contamination, the groundwater has naturally occurring constituents such as arsenic, chromium VI, manganese, and iron that exceed state and federal standards. The purified recycled water from the Project has undergone such an advanced purification process that the finished water will be much purer than the existing groundwater within the basin and will enhance the overall quality of the groundwater.
2. **Protect Groundwater from Seawater Contamination:** Most importantly, the project will be designed to recharge the aquifers in a manner that helps create a seawater barrier to prevent further contamination and devastation of the aquifers by seawater intrusion moving farther inland. Seawater Intrusion is occurring along the entire coastline of the Monterey Bay (**Figure 3-7**). The District has detected seawater intrusion in its groundwater supply aquifers at coastal monitoring wells on both sides of its service area. Water quality data is collected at the coastal monitoring wells and results are shown in **Table 3-3** for the annual 2017 average chloride concentrations. 250 mg/L is the secondary MCL for chloride. Water is considered brackish (mixture of freshwater and seawater) between 500 and 5,000 mg/L. Seawater has a chloride concentration of about 19,400 mg/L.

Table 3-3 Average Chloride Concentrations at Monitoring Wells (mg/L)

	Soquel Point Coastal	SC-A2RA Coastal	SC-A3A Coastal
Year 2017	1,025	13,750	17,500
Year 2019	1,000	15,000	18,400
Year 2021	1,100	15,200	18,600
% over MCL of 250 mg/L (2021 data)	340%	5,980%	7,340%
% increase from 2017 to 2021	**+7.3%**	**+ 10.5%**	**+ 6.3%**

Chlorides have increased over 10% in the southern portion of the District. With Pure Water Soquel, groundwater pumping can be reduced to stop over-extraction in that area.

The extent of seawater intrusion is depicted in **Figure 3-8** (red and orange dots). As documented through groundwater modeling and particle tracking, purified water that is injected into the groundwater basin through the wells will provide multi-directional flow confirming that this

water is replenishing and serving as a new source of groundwater and creating a seawater intrusion barrier with positive outflow towards the ocean. Recharge with purified water and positive outflow will improve the groundwater quality

Surface Water Quality Improvements

Pure Water Soquel Project will improve the quality of surface water in two main ways:

Figure 3-8 Chloride Concentrations Map

1. **Reduce Treated Wastewater Discharges to Sanctuary:** Pure Water Soquel will reduce the discharge of treated wastewater to the Monterey Bay National Marine Sanctuary. Designated in 1992, the Sanctuary is a federally protected marine area offshore of California's central coast and is known as the "Serengeti of the Sea" for its remarkably productive marine environment. It stretches from Marin to Cambria, encompasses a shoreline length of 276 miles and 4,601 square nautical miles of ocean, and extends an average distance of 30 miles from shore. A unique combination of geology, weather patterns and currents make it one of the most productive ocean ecosystems on Earth. Each year animals travel thousands of miles just to reach these rich feeding grounds. On average, the SC WWTF discharges approximately 8 MGD of secondary-treatment wastewater into the Sanctuary via an existing outfall located approximately 1 mile from the shore at a depth of approximately 110 feet. The Project will reduce the discharge of treated effluent to the Sanctuary by 25%, or 2 MGD in Phase I and by 50% or 4 MGD at full build-out. Reduction and reuse of this effluent would provide water quality benefits to the ocean environment. The reduction of discharges to the Sanctuary is supported by U.S. Fish and Wildlife Services (USFWS) in their letter of support dated June 17, 2019, where they state:

   "USFWS mission is working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. Within the Santa Cruz County area, there are 26 listed species pursuant to the federal Endangered Species Act. We consider the reduction of discharge into the marine environment to the recovery of at least 11 of the 26 federally listed species."

2. **Avoid Increased Surface Water Diversions and Degradation of Surface Water Quality:** The City of Santa Cruz does not have enough water to meet current demands during a drought. Even with ongoing conservation efforts and up to 15% water-use restrictions during drought conditions, additional water supplies are needed to meet potable water needs for public health and safety, economic stability, and provide water for protection of endangered species.

The City is currently considering a water supply alternative that requires increased surface water diversions to meet projected demands and create drought resiliency. When expanded, the City could avoid implementing the surface water diversion project. By reducing surface water diversions, more water can remain to help preserve the natural flows and avoid surface water quality impacts. The reduction of discharges to the Sanctuary and the avoidance of increased surface water diversions is supported by U.S. Fish and Wildlife Services (USFWS), as stated in their letter of support dated February 14, 2022.

3. **Increase Baseflows to Streams:** Due to increasing the groundwater levels and hydraulic gradients, the Pure Water Soquel Project will maintain or enhance contributions to streamflows and groundwater dependent ecosystems exist (GSP, 2019). The GSP states "Pure Water Soquel replenishment into the Purisima A unit also is expected to benefit the streamflow depletions indicator by raising shallow groundwater levels along Soquel Creek."

2. Will the project improve effluent quality beyond levels necessary to meet State or Federal discharge requirements?

Effluent Water Quality

Pure Water Soquel will improve effluent quality beyond levels necessary to meet California Code of Regulations (CCR) Title 22, Article 3, Uses of Recycled Water. If the water was simply going to be used for irrigation, then the effluent water quality would only have to meet Title 22 tertiary treatment standards. However, the District is maximizing the beneficial use of the produced water by injecting the water into the groundwater basin to create a barrier from seawater intrusion, thus protecting the 5,800 AFY of groundwater that is used by the Coastal Region of the Santa Cruz Mid County Groundwater Basin.

Before injection, the tertiary treated recycled water will be treated through membrane technology followed by reverse osmosis (RO) and an ultraviolet light-based advanced oxidation process (UV AOP). The effluent water quality will meet drinking water requirements and is practically free of potential constituents of emerging concern. This purified water, which will be used to replenish the groundwater basin and create a seawater barrier, is permitted for groundwater replenishment via the seawater intrusion prevention wells, consistent with Title 22, Article 5.2, Groundwater Replenishment—Subsurface Application, of the CCR. In a demonstration of full confidence, a third-party, independent evaluation by the National Water Research Institute unanimously concluded that Pure Water Soquel "is plausible, feasible, and protective of public health".

BUSINESS

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NATIONAL EXPERT PANEL GIVES SOQUEL CREEK RECYCLED WATER PLAN THUMBS UP

By Jessica A. York

SOQUEL — When it comes to farmers and Soquel Creek Water District's proposal to purify wastewater and inject it underground to replenish overtaxed aquifers in "plausible, feasible and protective of public health," according to a third-party review.

The assessment was included in a detailed report issued by an independent advisory panel convened by the nonprofit National Water Research Institute to study the "Pure Water Soquel" project on Sept. 26.

The water district is weighing several supplementary water supply options to bolster its depleted groundwater supply. Its concept, the proposed treatment plant would clean wastewater that the Santa Cruz Wastewater Treatment Plant otherwise discards into the ocean

with neighboring residents for reasons ranging from odor and traffic impacts to environmental safety concerns. The Wastewater Treatment Facility, currently, is the most limited and complicated site in terms of project size and soil conditions, according to the panel report.

"It would beneficial to build the AWTF (treatment plant) at a site that has the capacity to expand for future growth and changing treatment needs," the report reads.

During the panel's September hearing, much of the focus was on the drinking water's safety. According the group's findings, "microorganisms represent the most significant and acute public health risk associated with drinking water" and the treatment system will be designed to meet needed pathogen reduction requirements.

Meeting attendee Larry Pras-

3. Will the Project improve flow conditions in a natural stream channel?

Pure Water Soquel Project will improve flow conditions in the natural stream channels in two main ways:

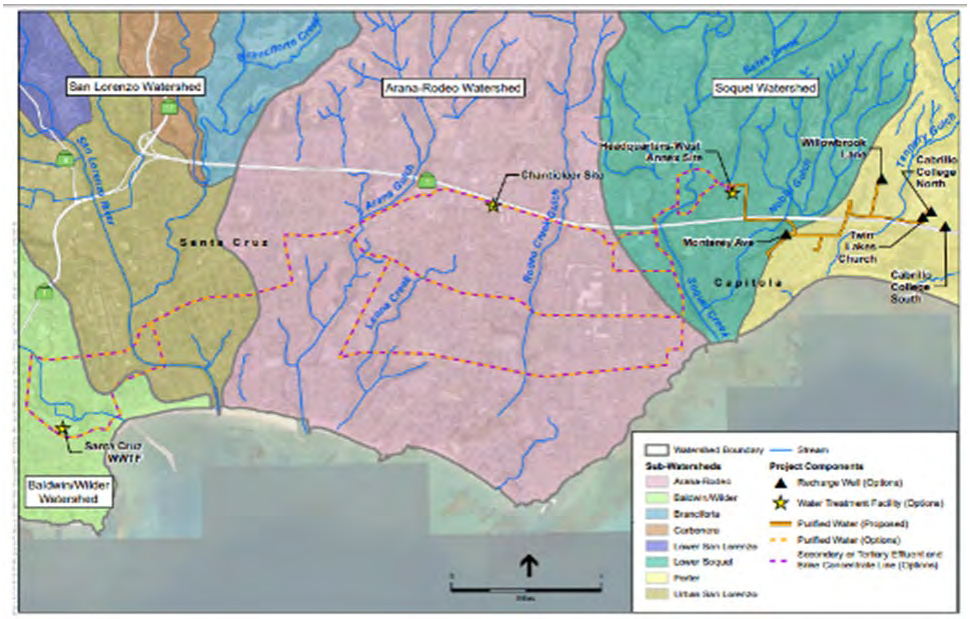


Figure 3-9 Watersheds in the Pure Water Soquel Vicinity

1. **Increase Stream Base Flows:** The project is anticipated to improve surface water stream flow by increasing the water levels in the aquifers and thus allowing more base flow into the several local streams and thus help the biota. The Project area overlies several sub-watersheds: the Neary Lagoon, Lower San Lorenzo River, Arana Creek-Rodeo Gulch, Soquel Creek, and Porter Gulch watersheds (County of Santa Cruz, 2017b, 2017c). There are many water users that draw from the local streams, thus increasing base flow would be a great benefit. The project may be especially beneficial during summers when some of the streams have been stressed due to insufficient water during the drier rainfall months. At least one stream (Soquel Creek) went dry last summer and it contains steelhead trout (see response to sub-criterion below). Groundwater modeling in the adjacent basin has already showed enhanced groundwater recharge would appreciably contribute to increased stream base flow. Through improved flow conditions in the creek, riparian habitat in the creeks for non-listed species can be expected to improve.
2. **Avoid Increased Stream Diversions:** As stated above, the City is currently considering a water supply alternative that requires increased surface water diversions to meet projected demands and create drought resiliency. As documented in a 2010 letter from the National Marine Fisheries Service (NMFS) "The San Lorenzo River and Soquel Creek watershed are in severe overdraft…water diversions have resulted in major adverse impact to all life stages of salmon and steelhead in Santa Cruz County streams. In order to adequately address these impacts, it will be necessary to comprehensively address the water use of all diverters in the watersheds of Santa Cruz County." With Phase II of the Project, the City could avoid or reduce its surface water diversion project, avoid impacting flow conditions in the creeks, and protect the habitat for listed and non-listed species. Also, please refer to the Pure Water Soquel Project Support Letter from US Fish and Wildlife Service, dated February 14, 2022.

4. Will the Project restore or enhance habitat for non-listed species? If so, how?

High quality riverine communities provide habitat for benthic macro-invertebrates such as mayflies, caddisflies, alderflies and stoneflies, and the larva of true flies, where the stream is fast and well-oxygenated. Pools support dragonflies, damselflies and water striders. In slower, warmer reaches of the stream, crustaceans, water boatmen, backswimmers and diving beetles thrive. Emergent vegetation grows along stream banks, and duckweed floats on the surface. Decaying matter on the muddy river bottom promotes the growth of plankton in sluggish waters.

Pure Water Soquel is anticipated to improve surface water stream flow by increasing the water levels in the aquifers, allow more base flow into the several local streams, and reduce reliance and increase of surface water withdrawals as an alternate supply; thus, help the native biota thrive and less susceptible to invasive species.

Many plants are more sensitive than humans to increased chloride levels, which results from seawater intrusion. Thus, protecting the groundwater from higher chloride levels improves the conditions for native plants and makes them less vulnerable to invasive species. Additionally, protecting the native plants also preserves the habitat and conditions for the native wildlife.

5. Will the Project provide water or habitat for federally listed threatened or endangered species? If so, how?

As stated above, Pure Water Soquel will improve flow conditions in the natural stream channels by increasing stream base flows and avoiding increased diversions from local stream, thus providing water for federally listed threatened and endangered species found in those streams. Fish counts are conducted annually in the streams in the region and these surveys may also provide an indication of the effectiveness of Pure Water Soquel. Recent stream surveys have shown that the federally listed threatened steelhead trout have dwindled over the past few years from several hundred to just a handful (2015 Juvenile Steelhead Densities Report). Increased flows will naturally help steelhead — not just due to increased flows, but also by improving other habitat requirements like maintaining lower water temperature due to the higher flows.

On October 15, 2018, the City issued a Notice of Preparation (NOP) of an Environmental Impact Report (EIR) to evaluate potential environmental impacts of their proposed Water Rights Project, which is required if the City opts to modify and increase their surface water diversions to meet drought year demands. As stated in the NOP, the affected local streams provide habitat for federal protected Central California Coast steelhead trout (Oncorhynchus mykiss) and/or Central California Coast Coho salmon (Oncorhynchus kisutch). Both Liddell and Laguna Creek supports steelhead. Coho salmon have been documented in the Laguna Creek recently and suitable habitat is present (2nd Nature, 2006, Berry, C., Bean, E., Basset, R., Martinez-McKinney, J., Retford, N., and Hagar, J. 2018). Reggiardo Creek is a first order tributary to Laguna Creek. Majors Creek also supports populations of steelhead. In the February 2022 letter, USFWS noted that the retention of surface water in rivers and streams are important, especially during drought years, for listed amphibians in the Santa Cruz County area. **With expanded capacity, the Project, the City could avoid implementing the surface water diversion project, avoid impacting flow conditions in the creeks, and protect the habitat for listed threatened and endangered species.**

EVALUATION CRITERION 3: ECONOMIC BENEFITS

Subcriterion No. 3a. Cost Effectiveness

1. Reclamation will calculate the cost per acre-foot of the project using information provided by project sponsors. Please provide the following information for this calculation. (a) The total estimated construction costs, by year, for the project (include all previous and planned work).

Construction costs by year, including all costs following planning and design, are presented below in **Table 3-4**, and include fiscal years 2019 through completion of construction, which is anticipated to be by 2023. Costs for previous years have been updated to reflect actuals.

With technical feasibility and environmental review complete, the Pure Water Soquel Project was 'shovel ready' in 2019 and immediately began its next phase of implementation with full-design and construction.

- **Conveyance Infrastructure:** In April 2021, the District awarded Phase 2 of the conveyance infrastructure project to the PDB team to construct the three pipeline systems (source water, RO concentrate, and purified water) that traversed an eight (8) mile span from Santa Cruz to Aptos.
- **Treatment Facilities:** In March through September 2021, value engineering was performed for the treatment facilities project. During this time, the facilities at Santa Cruz were designed to include a source water pump station and a small title 22 recycled water system. In addition, ozone pre-treatment was added to the Chanticleer site. In October 2021, the District awarded Phase 2 of the treatment facilities project to the PDB team to construct a tertiary facility and source water pump station at SCWWTF and the advanced water purification facility at Chanticleer and associated pump stations and appurtenances.
- **SWIP Wells and Monitoring Wells:** In Spring 2020, the District awarded a contract to drill the three SWIP wells. In October 2021, the District awarded a contract to construct the monitoring wells. Design of the well sites is currently underway and expected to start construction in summer of 2022.

Construction costs associated with Program Management, Land Acquisition, Construction Management, Permitting, Legal, Laboratory, Start-Up and Commissioning, Performance Monitoring are also included. Additionally, contingencies have also be estimated due to unknown consequential impacts related to COVID-conditions, market variability, unforeseen conditions,

and furthering design elements of the project. More information on the Pure Water Soquel Project Costs are included in **Section 7**.

Table 3-4: Total Estimated Construction Costs (Millions)

Year #	District FY	Cost	Major Construction Activities
1	2018–2019	$1.51 M	Complete procurement for conveyance and treatment facilities design-builder. Start design and pre-construction for SWIP wells.
2	2019–2020	$1.30 M	Start and complete conveyance and SWIP wells design. Start treatment facilities final design and pre-construction. Complete SWIP wells construction.
3	2020–2021	$6.07 M	Begin conveyance construction and continue treatment facilities design.
4	2021-2022	$64.14 M	Complete treatment facilities design and begin construction. Complete SWIP monitoring wells design and begin construction.
5	2022–2023	$58.55 M	Complete conveyance construction. Complete SWIP well equipping design and begin construction.
6	2023–2024	$5.55	Complete treatment facilities construction and begin start-up and commissioning.
7-10	2024-2028	$0	Project in operations.
11	2028–2029	$1.55 M	Begin procurement and begin design/build of expanded treatment facilities.
12-14	2029–2032	$28.29 M	Continue construction of treatment facilities. Procure and begin construction of additional SWIP wells.
15	2032–2033	$1.21 M	Complete construction and conduct start-up and commissioning.
	Total	**$168.17 M**	

(b) The total estimated or actual costs to plan and design the Project. Note: This should not include the cost to complete a feasibility study that meets the requirements of WTR 11-01.

The total estimated costs associated with planning and design are shown in **Table 3-5**. Eligible costs are calculated based on the date of USBR's transmittal of the Feasibility Study to Congress in September 2018 and through September 2025. During these seven years, the design and construction for all components (treatment facilities, conveyance infrastructure, and SWIP wells) will be executed as well as all project support (including, but not limited to, land acquisition, permitting, legal support, and project and construction administration/management). Planning for expansion would begin in 2026 with design beginning in 2027, as needed.

Table 3-5: Total Estimated Planning and Design Costs (Millions)						
Year #	District FY	Planning/ Program Management	Admin/ Legal	Design	Land	Cost
1	2018–2019	$1.67 M	$0.07 M	-	-	$1.74 M
2	2019–2020	$2.89 M	$0.45 M	$4.37 M	$3.28 M	$10.99 M
3	2019–2021	$2.38 M	$0.43 M	$8.05 M	$1.44 M	$12.30 M
4	2021–2022	$2.02 M	$0.12 M	$2.62 M	$0.52 M	$5.28 M
5	2022–2023	$1.67 M	$0.13 M	-	-	$1.80 M
6	2023–2024	$0.10 M	-	-	-	$0.10 M
7-8	2024–2026	-	-	-	-	$0.00 M
9	2026–2027	$0.20 M	$0.10 M	$0.20 M	-	$0.50 M
10	2027–2028	$1.40 M	$0.14 M	$2.50 M	-	$4.04 M
11	2028–2029	$0.80 M	$0.15 M	$3.50 M	-	$4.45 M
12	2029–2030		$0.10 M	$0.10 M	-	$0.20 M
	Total	**$13.13M**	**$1.69 M**	**$21.34 M**	**$5.24 M**	**$41.40 M**

(c) The average annual operation and maintenance costs for the life of the Project. Please do not include periodic replacement costs in the operation and maintenance costs. Periodic replacement costs should be provided separately in response to (f) below. Note: This is an annual cost—not total cost.

Average annual operation and maintenance (O&M) costs are based on estimates from the approved 2018 Feasibility Study and refined during the 100% design/issued for construction document efforts (2021) shown in **Table 3-6**.

Table 3-6: Annual Operations and Maintenance Costs [1]		
Item	Years 1–10 of Operations 2023–2032	Years 11–50 of Operations 2033–2072
Energy Cost	$870,000	$1,740,000
Chemical Operating Costs	$540,000	$1,080,000
Labor	$1,000,000	$1,000,000
Laboratory Testing	$210,000	$420,000
General Utilities	$20,000	$40,000
Pipeline Operation and Maintenance	$340,000	$340,000
Total O&M Costs	**$2,980,000**	**$4,620,000**

1. Energy, chemical, and labor costs updated based on 100% Design efforts (2021) and include additional energy and chemical costs associated with ozone.
2. Additional operators and other staff are not anticipated to be required for expansion operations.
3. The conveyance system is sized for 3,000 AFY flows; thus, additional pipeline operation and maintenance will not be required during expansion.

Estimated energy usage is 4,100 Megawatt-hours per year (MWh/yr). Unit costs and assumptions for power, chemical operations, and labor were based on the 100% treatment design and include additional energy and chemical costs associated with ozone pre-treatment. General utilities and pipeline operations/maintenance costs escalated from the Basis of Cost Memorandum in Appendix N of the approved Feasibility Study.

Table 3-7: Staffing Plan for Pure Water Soquel		
Staff Position	Tertiary & Source Water Pump Station Facilities @ SCWWTF	AWPF @ Chanticleer
Plant Superintendent (Grade 4-5/T4-5 Lead Operator)	0.1 FTE	1 FTE
O/M Supervisor	0.1 FTE	1 FTE
I/C Technician		1 FTE
Operators: T-2, T-3	0.1 FTE	2 FTE
Mechanic	0.1 FTE	1 FTE
Admin/Other Support	0.1 FTE	0.5 FTE

The City of Santa Cruz is anticipating operating the PWS components at the SC WWTF with existing staff and the AWPF would be operated through a third-party operations entity. As the facility is less than 10 GPD in size, it is not required by the state of CA to be operated and staffed 24/7. Staffing is anticipated to be as shown in **Table 3-7** with further refinement of the staffing and associated costs to occur in 2022. The O&M costs (**Table 3-8**) reflect operation for 2024–2033 and operations for 2034–2073.

Table 3-8: Average Annual O&M Costs through 2062		
Year Number	District Fiscal Year	Average Annual O&M Cost
Pre-Operations	2018–2023	Design/ Construction – Not Operational
1-10 (of operations)	2024–2033	$2,980,000
11-50 (of operations)	2034–2073	$4,620,000

(d) The year the Project will begin to deliver reclaimed water.

Due to the imminent threat of seawater intrusion, the Board has set an aggressive timeline of completing construction by 2023 and beginning delivery of purified recycled water by 2024.

(e) The projected life (in years) that the Project is expected to last.

Project treatment facilities are expected to have a service life of at least 50 years (assumed 2024–2033 for the Project at 1,840 AFY and 2034–2073 at 3,340 AFY, when expanded). Treatment facilities are presumed a 40 to 50-year life and the replacement costs of the membranes, UV AOP equipment and other replacement parts and consumables have been taken into account. 50 years is within acceptable standards of life for similar facilities. Conveyance infrastructure and SWIP wells are also anticipated to have a 50-year life.

(f) All estimated replacement costs by year.

Replacement costs are shown in **Table 3-9**. Membrane life and replacement costs (**Table 3-10**) are based on the Project's 100% design efforts.

Table 3-9: Replacement Requirements for Pure Water Soquel Components			
Description of Replacement Requirement	Replacement Interval	Replacement Cost (years 1–10)	Replacement Cost (years 11–50)
Cartridge Filters	6 months	$6,000	$12,000
MF Membrane Replacement	7–9 years	$230,000	$460,000

RO Membrane Replacement	5 years	$45,000	$90,000
UV Disinfection Replacement	Annual	$26,000	$52,000
Other Replacement Parts and Consumables	1	$310,000	$620,000
Pipelines – assume 50-year useful life	Replacement assumed not necessary within lifetime of the project.	$0	$0

Table 3-10: Estimated Replacement Costs By Year

Description of Replacement Requirement	Year	Cost
Cartridge Filters	Annual (1–10)	$6,000
UV-AOP Replacements	Annual (1–10)	$26,000
Other Repair/Replacement	Annual (1–10)	$310,000
RO Membrane Replacement	5	$45,000
MF Membrane Replacement	8	$230,000
RO Membrane Replacement	10	$45,000
Cartridge Filters	Annual (11–50)	$12,000
UV-AOP Replacements	Annual (11–50)	$52,000
Other Repair/Replacement	Annual (11–50)	$620,000
RO Membrane Replacement	15	$90,000
MF Membrane Replacement	17	$460,000
RO Membrane Replacement	20	$90,000
RO Membrane Replacement	25	$90,000
MF Membrane Replacement	26	$460,000
RO Membrane Replacement	30	$90,000
MF Membrane Replacement	34	$460,000
RO Membrane Replacement	35	$90,000
MF Membrane Replacement	40	$460,000
RO Membrane Replacement	40	$90,000
MF Membrane Replacement	42	$460,000
RO Membrane Replacement	45	$90,000

(g) The maximum volume of water (in acre-feet) that will be produced upon completion of the Project.

For the first 10 operational years of the Project (Years 2024–2033), the Project will produce 1,500 AFY to replenish the Basin plus an additional 340 AFY to offset City surface water supplies. For the subsequent 40 operational years of the Project (Years 2034–2073), the Project will produce 3,000 AFY plus the 340 AFY. Therefore, the maximum volume of water that will be produced upon completion of the Project is 152,000 AFY.

Additionally, the District is maximizing the beneficial use of the produced water by injecting the water into the groundwater basin to create a barrier from seawater intrusion, thus protecting the 5,800 AFY of groundwater that is preserved for the continued use by the Coastal Region of

the Santa Cruz Mid County Groundwater Basin. As documented above and in prior sections, Pure Water Soquel costs involve more than just the treatment of recycled water. The costs include the installation of SWIP wells, so that the purified water can be delivered at low pressure and injected into the groundwater basin to increase groundwater levels to protective elevations and create a seawater intrusion barrier. This is unlike a more traditional recycled water project that may only include the costs to generate recycled water for others to use or purchase such as irrigation or industrial uses that involve direct delivery. The project includes costs to maximize the beneficial impacts of the recycled water and protect 5,800 AFY of groundwater supplies.

Based on scientific modeling and hydrological analysis, Pure Water Soquel will aid in meeting the potable water needs of the District, Central Water District, City of Santa Cruz, small water systems, and private well pumpers, beginning in the first year of operation (2024). Therefore, over the operational life of the project (2024–2073), 5,800 AFY of groundwater pumping will be protected or 290,000 AF over the life of the Project.

2 Reclamation will calculate the cost per acre-foot for the Title XVI Project using the information requested in question No. 1 and compare it to the no action alternative and other water supply options identified by the applicant. Please provide the following information for this comparison: (a) A description of conditions that exist in the area and projections of future with, and without, the Project.

Existing Conditions

The District is completely dependent on the Santa Cruz Mid-County Groundwater Basin to provide potable water delivery to more than 40,400 residents within Aptos, La Selva Beach, Opal Cliffs, Rio del Mar, Seascape, Seacliff Beach, Soquel, and portions of the City of Capitola. The District and the Santa Cruz mid-county region have a history of water shortage needs dating back several decades to the mid-1980s. The Basin has been operating in overdraft due to pumping exceeding natural recharge rates. This has resulted in groundwater levels declining to below sea-level; thus, creating a downward gradient for seawater to creep inland.

The District has responded over the years by drastically pumping less water due to aggressive conservation efforts and by moving groundwater pumping away from the coast. The District declared a Water Shortage and Groundwater Emergency in June of 2014 and has extended the declaration continuously through the present. Our region receives no imported water. Groundwater is the only available supply to the District and many of its southern and eastern neighbors.

The total groundwater pumping within the Coastal Region of the Basin is approximately 5,800 AFY, which includes water demands from the District, City of Santa Cruz, Central Water District, small mutual water systems, and private well pumpers (**Table 3-11)**. The District is the region's major groundwater pumper, with a long-term forecast demand of 3,800 AFY. Groundwater modeling indicates that the total Basin deficit is 3,000 AFY to protect the Basin from seawater intrusion, create drought resiliency, adapt to climate change conditions, and achieve the State's mandate of Basin sustainability by 2040.

Table 3-11 Groundwater Pumping of Santa Cruz Mid-County Groundwater Basin by User				
	Soquel Creek Water District	Central Water District	City of Santa Cruz	Small Mutuals and Private Wells
Water Demands in Coastal Region (5,800 AFY)	3,800	550	520	900

With Project Conditions

Hydrologic analysis and evaluations estimate that the District must limit its net groundwater extractions to no more than 2,300 AFY and secure approximately 1,500 AFY of supplemental supply to contribute to basin recovery and protect against seawater intrusion. (Water Systems Consulting, 2015). Pure Water Soquel will completely meet the District's required contribution to restore the groundwater basin to sustainable levels. The Project will supply 1,500 AFY of purified reclaimed water for groundwater recharge, fulfill 100% of the supplemental supply needed by the District, and aid in ensuring more than 5,800 AFY of groundwater supply in this Coastal Region is available and high-quality fresh drinking water is protected from seawater intrusion for the greater community. As documented in the groundwater modeling and particle tracking, purified water that is injected into the groundwater basin through the SWIP wells will provide multi-directional flow confirming that this water is replenishing and serving as a new source of groundwater and creating a seawater intrusion barrier with positive outflow towards the ocean. Injection with purified water and positive outflow will improve the groundwater quality. Additionally, the project will supply 340 AFY for City landscape irrigation and a construction fill water station, off-setting their potable surface water demands.

When expanded, additional supplies of 1,500 AFY are required to create drought resiliency, adapt to climate change conditions, and achieve the State's mandate of Basin sustainability by 2040. The City of Santa Cruz is currently considering a water supply alternative that requires increased surface water diversions to meet projected demands and create drought resiliency. With expansion of the Project, the City could avoid implementing the surface water diversion project that is less drought resilient, more susceptible to climate change conditions, and has greater riparian impacts.

Without Project Conditions

Without Pure Water Soquel, the reasonable no-project alternative is for the District to force its service territory to abide by a severe reduction in consumption. SGMA requires critically overdrafted water basins to reach sustainable pumping rates by the year 2040. Under SGMA, the District is under mandate to develop projects or reduce current pumping rates to reach sustainability. Modeling shows that in a no-project scenario, groundwater extractions would need to drop to 2,300 AFY.

Since the 1990s the District has imposed increasingly stringent use restrictions to address drought conditions, protect the aquifer, and curtail further seawater intrusion. The District's residential per capita consumption is currently around 50 GPCD, is among the lowest of all districts in California, and is due largely in part to the Groundwater Emergency and Stage 3 Water

Shortage Emergency that the District Board of Director's declared in 2014 and has been stayed over the last seven years due to the imminent seawater contamination. The Stage 3 declaration (Resolution 14-21) set water reduction at 25% and required a very robust conservation campaign of rebates, projects, and programs. The capacity for further water conservation has already been largely utilized. If required to cut back even further, the service territory would require an additional restriction of 30% (cumulatively rationing customers' water use by 55% from typical consumption of 2014, prior to any stage 3 water restrictions were imposed) and would experience decades of economic and quality of life impacts resulting from the required further severe reduction in supply.

As described below, alternative water supplies face significant environmental, political, and financial challenges. The time to build public acceptance, secure project approvals and water rights, complete environmental documentation and permitting, and secure project funding and financing will take many years. Design and construction of the project will also take many years. Therefore, it's fair to assume that, without Pure Water Soquel, the District could be required to reduce groundwater pumping to 2,300 AFY for decades, at least until 2040 as mandated by SGMA.

(b) Provide the cost per acre-foot of other water supply alternatives that could be implemented by the non-Federal Project sponsor in lieu of the Project, this must include, but is not limited to, one nonreclaimed water alternative that would satisfy the same demand as the Project.

The region is situated between the Pacific Ocean and a coastal mountain range, and there are no interties with systems outside the region. All water supply options are therefore regional in nature. The primary non-recycled alternatives to Pure Water Soquel are surface water and desalination, both which face significant challenges for timely implementation. Surface water is highly dependent on rainfall and not drought-resilient. Also, increasing needs for fish flow and habitat protection are a factor and the time required to secure a Water Rights Permit can be significant when critical environmental habitat is a consideration. For desalination, the Santa Cruz community has already opposed this option due to the perception of high energy use and impacts to marine life. Several desalination projects have been proposed for the region, and all of them have faced stiff political opposition. Other alternatives include surface water from the City of Santa Cruz and a No-Project option.

Unit cost analysis for Surface Water and Desalination was performed as part of a recent cost comparison analysis presented to the District Board on December 4, 2018. Pure Water Soquel costs were evaluated in the Feasibility Study and further refined during project design development. This information is available on the District's website [1].

The **No-Project** option was analyzed as part of the Economic Study by Brent Haddad, UCSC Professor in 2017 (see Subcriterion 3b below for a detailed discussion of the analysis). In the Economic Study, Dr. Haddad analyzes the revenue change that would be necessary to reduce water use to 2,300 AFY. The approach for estimating the cost per acre foot is different from the actual process of rate setting but allows the District to take advantage of what they know about consumer demand. Given that the District's mission is to reliably and sustainably meet

[1] at https://www.soquelcreekwater.org/sites/default/files/documents/Pagesfrom12-04-18BoardPacket.pdf

customers' demand for water, the analysis assumes that the District will set prices such that total consumption is equal to the available supply. The District will charge prices that are low enough to not further reduce consumption below the available supply, but the District will not reduce prices to the point that demand outstrips supply. The practical implication of this method is that the equilibrium prices and quantities are found through the intersection of the demand curve with the supply constraints imposed for the sustainability of the Basin. As shown in **Figure 3-10** in order to generate enough curtailment to comply with 2,300 AFY, the District would need to raise prices to nearly $12,000 per AF until the Basin is no longer overdrafted. Therefore, the No-Project option has a cost of $12,000 per AF. See **Table 3-12** for cost and other considerations.

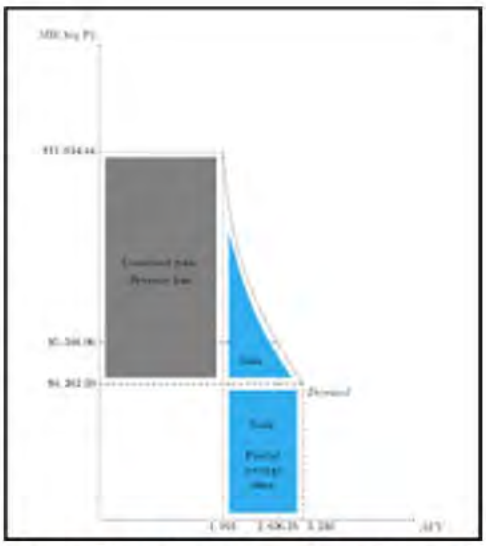


Figure 3-10 Benefits Calculation of PWS Project (Haddad, 2019)

Table 3-12 Water Supply Alternatives- Unit Cost Comparison ($/AF)

Water Supply Alternative	Unit Cost ($/AF)	Description
Pure Water Soquel[1]	$2,300–$2,900	This alternative would recycle up to 50% of treated effluent currently discharged into the ocean and would create a reliable, drought-resilient supply that could be implemented in a timely manner.
Surface Water[2]	$6,100–$11,500	This alternative, to purchase excess surface water from the City of Santa Cruz, if available, is dependent on rainfall, acquiring surface water rights, and environmental needs of fish and endangered species. Time to complete this project could take many years, the unit cost, and its unreliability (not drought resilient) makes this an infeasible project.
Desalination[2]	$4,400–$4,900	This alternative, to purchase water from Deep Water Desal, is no longer an active project, but we would expect costs for other regional desalination projects to be similar. In addition, time to complete this project could be lengthy and public opposition may still be faced, thus schedule uncertainty will likely impact project cost and timing and thus is an infeasible project.
No Project[3]	$12,000	A No Project alternative would require the District to sell limited water at a higher price to curtail demand. Additionally, the region would be greatly impacted with water restrictions that would affect tourism, businesses, and quality of life. This is not a feasible nor sustainable alternative.

[1]Unit costs are based on executed contracts and updated cost estimates for construction and O&M of the project in 2022 dollars. It is assumed a total capacity of 3,340 AFY in 2034 (3,000 AFY of purified water and 340 AFY for on-site use at SC WWTF). It is assumed Pure Water Soquel will have a 50-year

project life. The range represents a unit cost of water with and without state and federal funding assistance.

[2] Unit costs were evaluated in December 2018 with a TM on estimated costs for supplemental water supplies (BC, 2018) Link: www.soquelcreekwater.org/sites/default/files/documents/Pagesfrom12-04-18BoardPacket.pdf.

[3] Unit cost from Economic Impact Study (Haddad, 2018)

(c) If available, provide the cost per acre foot of one water supply project with similar characteristics.

Pure Water Monterey, just to the South along the Monterey Bay, will be recycling water to purify and inject into the groundwater basin similar to Pure Water Soquel. Pure Water Monterey has been published to be $3,429[2]/AF if expanded to a facility that could produce 5,570 AFY of purified water in the future. Central Cost Blue (with Phase 1 and Phase 2) near San Luis Obispo, has an anticipated unit cost of water of $2,590[3].

(d) Discussion of the degree to which the Project is cost-effective. Including, where applicable, a discussion of why the Project may be cost effective even if the overall Project cost appears to be high.

Among reasonably feasible alternatives, this Project is the most cost-effective means for the District to both ensure a healthy groundwater basin and meet water demand, in a **timely manner**. Because the District lies on the coast, separated from the rest of California by mountains, inexpensive imported water is not an option. Efforts at regional cooperation to build a shared desalination facility were unsuccessful and would have not compared favorably in cost with the Project. As shown above in **Table 3-12**, the cost per acre foot of a severe mandated reduction in water use is 400% higher than Pure Water Soquel. The benefits to the District and region of the additional water supply are also enormous (as documented in **Subcriterion 3b below**), in part for the same reasons that lead to water supplies being as expensive as they are. As documented, the regional economic impact of not developing the Project are $903 million, based on the conservative assumptions.

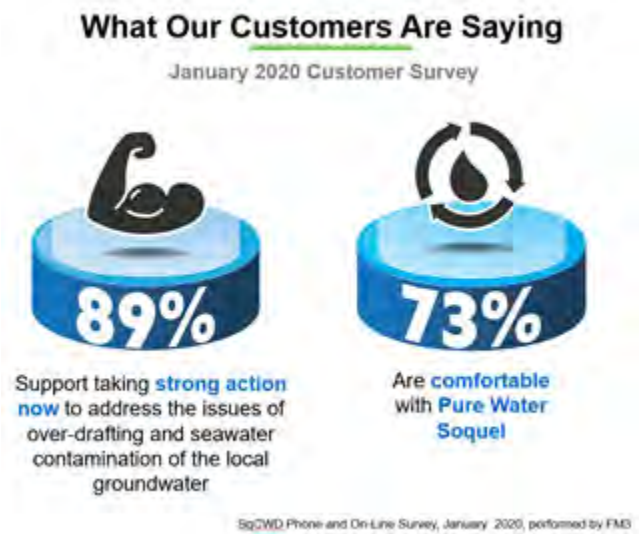


Figure 3-11 Customer Survey on Project Support

The Project is substantially more politically feasible than desalination alternatives, and it will deliver enough water supply to meet the modest demands of the District while ensuring there is no pressure to further degrade the groundwater basin. Without

[2] https://www.businesswire.com/news/home/20211129005787/en/California-American-Water-Requests-California-Public-Utilities-Commission-Approval-of-Recycled-Water-Agreement-and-Related-Facilities-in-Monterey

[3] *Communications (R. Morrow, 02.28.2022)*

this additional supply, residents would face rationing, high prices, or both, creating tremendous public pressure to continue pumping beyond sustainable limits or ultimately implement a different, more expensive project that achieves the same objectives as Pure Water Soquel.

Pure Water Soquel has solid partner and public support (**Figure 3-11**) that has not been available for desalination projects, which is the most likely water supply alternative. When including political costs and the benefits of public trust and healthy relationships with local partners, Pure Water Soquel is far more attractive than any alternative.

Subcriterion No. 3b—Economic Analysis and Project Benefits

1. Summarize the economic analysis performed for the Project including information on the Project's estimated benefits and costs. Describe the methodologies used for the analysis that has been conducted. Points will be awarded based on a comparison of the benefits and costs of the Project. The information provided should include:

(a) Quantified and monetized Project costs, including capital costs and operations and maintenance costs.

For this section of the analysis, the District contacted Dr. Brent Haddad (Professor of Environmental Studies, Social Sciences Division at University of California, Santa Cruz) and Bryan Pratt (D. Candidate in Economics at UC Santa Cruz) to perform an economic analysis[4] of the Project benefits relative to the Project costs (Haddad and Pratt, 2018). The economic analysis is conservatively based on 1,500 AFY supplies only, assuming the without project conditions involve a cut-back in water use of 2,300 AFY. With expansion, supplies could provide resiliency against drought and climate change impacts and don't easily translate to an annual reduction in water use that can be economically analyzed. The benefits are calculated based on 2018 dollars. These assumptions minimize the calculated economic benefits of the Project and thus are a conservative estimate.

Capital costs of the 1,500 AFY Project are estimated to be $169 million in 2022 dollars and annual O&M costs have been estimated at $2.98 million the year operation begins. The Net Present Value of 50 years of O&M is $145 million. This amounts to a total net present value of $314 million in project costs combining both capital and O&M costs.

(b) Quantified and monetized Project benefits. This includes benefits that can be quantified and expressed as a monetized benefit per acre-foot related to water supply quantity and water supply reliability.

Economic Impacts Analysis and Approach: One common approach for estimating the benefits of a project that generates additional water supplies is to estimate the avoided cost of obtaining the same quantity of water elsewhere. This method assumes that the water supply and associated benefits will be delivered in either case, with the difference in costs between the project under consideration and its alternatives as the realized benefit to the District. This approach was not pursued by Dr. Haddad, because there is no reasonably feasible alternative supply that meets the project goals and objectives of achieving sustainability in a **timely manner**. Thus, instead of determining project benefits in terms of the cost of the otherwise lowest-cost water supply project, we instead measure the benefits to the District that would have to be

[4] www.soquelcreekwater.org/sites/default/files/documents/Technical_memo_Cost-Benefit_Methodology-PWS_Final-August-30-2018.pdf

foregone entirely if there was no supply. The reasonable no-project alternative is for the District to force its service territory to abide by a severe reduction in consumption. SGMA requires critically overdrafted water basins to reach sustainable pumping rates by the year 2040. Under SGMA, the District is under mandate to develop projects or reduce current pumping rates to reach sustainability. Modeling shows that in a no-project scenario, production would need to drop to 2,300 AFY. It is possible that by roughly 2045 a fully recovered aquifer could sustain a higher pumping rate, potentially as high as 3,300 AFY. Therefore, estimated net Project benefits conservatively assume pumping at 2,300 AFY until 2045 and 3,300 AFY thereafter.

Economic Impacts:

Housing and Residential Benefits: In general, the findings regarding the aggregate benefits to District consumers and the net change in District revenue are reasonably consistent across a range of assumptions, with the result being **an estimated $7.63 million in annual private net benefits from the residential component of the added 1,500 AF of water supply**. Estimating the value of this benefit over time requires discounting using an industry standard discount rate of 5%. Under the assumption that sustainable yield could be increased to 3,300 AFY beginning in 2045, the Project's housing and residential net present value (NPV) would be $120 million.

While residential consumers comprise approximately 85% of water deliveries in the District, the commercial sector would experience substantial pain from long-term reductions. Santa Cruz County tourism is a $700 million-dollar industry and generates $14.5 million in local taxes (2000 figures from Santa Cruz Conference & Visitor's Council). The economic analysis documents a $47 million loss in economic activity each year through 2044, and the NPV of these avoided damages would be $676 million.

Environmental Benefits: Three environmental values that would benefit from accelerated groundwater recovery:

- Stream baseflow improvements (maintains the tourism economy that in part values flowing surface waters and in-stream environmental benefits);
- Improved ecological functions of springs and streams (accelerates the recovery of species and ecosystems); and
- Land subsidence results in damage to buildings and infrastructure (avoidance or reduced cost of repair).

An estimated existence value was assigned to each (dollars/AF), representing the amount, in total, the District and region would be willing to pay for the benefit. **The analysis documents an overall estimated net environmental benefit of $83 million**. In addition to the direct benefits of the Project to customers from additional supplies, the Project may generate benefits to water suppliers and water consumers outside of the District pumping from the Aromas Red Sands aquifer. The Project would result in $2.7 million in

benefits per year and a net present value of $24 million.

Total Monetized Economic Benefit: Using this combination of methods, the economic analysis estimates the Project total benefits to include both at least $796 million of direct benefits plus approximately $107 million in environmental and non-District benefits. **This adds up to total monetized benefits of $903 million**.

In summary, the total economic benefits of Pure Water Soquel fall into three primary distinctions: housing/residential benefits, business and commerce, and environmental.

(c) A comparison of the Project's quantified and monetized benefits and costs.

The Pure Water Soquel Benefit/Cost Ratio conservatively ranges from 2.9 to 4.0, demonstrating the importance and significant benefits associated with project implementation.

Total Monetized Benefits: The total Project benefits include both at least $796 million of direct benefits plus approximately $107 million in environmental and non-district benefits. This adds up to total monetized benefits of $903 million.

Total Monetized Costs: The total Project costs include the net present value capital costs of $169 million and O&M costs of $145 million, for a total net present value of $314 million in Project costs, yielding a B/C ratio of 2.9.

Funded Project Costs: The District has been awarded $52 million in state grants, $9 million Title XVI grant, state and federal low interest loans with an equivalent cost reduction value of $6 million, and is applying for this additional $21 million Title XVI grant. Applying these reductions to the project costs results in an increased B/C ratio of 4.0.

2. Some Project benefits may be difficult to quantify and/or monetize. Describe any economic benefits of the Project that are difficult to quantify and/or monetize. Provide a qualitative discussion of the economic impact of these benefits. Points will be awarded based on the potential economic impact of the Project-related benefits. Some examples of benefits may include, but are not limited to, acres of land or stream miles that may be benefitted or not harmed, benefits to habitat or species, flood risk mitigation, local impacts on residents and/or businesses, job creation, and regional impacts. This may also include benefits listed in question one, if they have not been monetized (e.g., water reliability, water quality, recreation).

The social cost of restricting housing development due to insufficient water supply extends to all income levels and affects everyone, especially those who can least afford housing which emphasizes social justice issues.

The Economic Study identifies additional quantifiable benefits that are difficult to monetize including the construction of new housing units and the avoidance of job losses, as described below.

Reduced Housing with No Project: The economic analysis estimates that 2,122 housing units would not be constructed through 2035 due to a pending moratorium on new water connections should the Project not be built, and additional water not secured. The forecast data is only available through 2035, and the moratorium on construction after 2035 and before the Basin is

fully recharged is not included. Blocking construction of new housing is a contentious social issue in the region. As of 2015, the service area included 20,285 housing units, with a perennial problem of high housing costs and a lack of affordable housing. According to Demographia, "Santa Cruz, California, located in the San Francisco Bay Area, is the least affordable market in the United States." Demographia points to restrictions on new housing expansion as a key driver of this crisis. The social cost of restricting housing development due to insufficient water supply extends to all income levels and affects everyone, especially those who can least afford housing which emphasizes social justice issues.

Job Losses with No Project: As noted above, the analysis documents a $47 million Commercial loss each year through 2044 and the loss of 725 jobs. With reduced economic activity, certain studies have sought to quantify the associated job losses. Using estimates from M.Cubed (2008) and employment figures from BEA, the analysis estimates job losses of around 727, representing 3.8% of employment in the service area.

Community Risks with No Project:

- Inability to help neighboring water agencies in times of water shortage emergencies
- Inadequate supplies to prevent a water-intensive fire event
- Inability to provide adequate stream baseflow improvements for fish and endangered species
- Seawater intrusion is worse than modeled and overall impacts are more detrimental.
- Land subsidence in the more inland areas of the region

Agricultural and Farming Benefits:

There are additional benefits that the Project could provide to nearby groundwater basins. Adjacent to the Santa Cruz Mid-County Groundwater Basin is the Corralitos-Pajaro Valley Basin (3-002.01) With No Project, pumping will need to be cut back across the Mid-County Basin and no cross-basin subsidies are possible. With Pure Water Soquel, it is planned that District wells located near the SWIP wells in the Santa Cruz Mid-County Basin will be pumped to such an extent that District wells near the Corralitos-Pajaro Valley Basin could be pumped less. This allows for in-lieu replenishment and additional recharge potential to the Corralitos-Pajaro Valley Basin. This additional water will be available to largely rural, agricultural, and disadvantaged communities that are outside the District service territory but is an area that is recognized worldwide for its importance to the agricultural industry. Agricultural land use is dominated in this area to high value crops including vegetables (14,000 acres), strawberries (7,000 acres) and trees and fruits (4,000 acres) (PVWMA, 2002). California is the number one producer of strawberries and raspberries in the nation (in 2009, California produced 89% of the nation's strawberries) and Santa Cruz and Monterey Counties are among the top producing counties of strawberries and raspberries in the state (USDA-NASS 2010). Several large produce companies and familiar household product names are headquartered in the Pajaro Valley, including Driscoll's Berries and Martinelli's (apples and apple juices). The Corralitos-Pajaro Valley Basin is also identified in a state of critical overdraft; thus, additional water that could be captured and/or used in this Basin could benefit farming in this region.

EVALUATION CRITERION 4: RECLAMATION'S OBLIGATIONS AND BENEFITS TO RURAL OR ECONOMICALLY DISADVANTAGED COMMUNITIES

Subcriterion No. 4a. Legal and Contractual Water Supply Obligations

1. Explain how the Project relates to Reclamation's mission and/or serves a Federal interest. Does the Project help fulfill any of Reclamation's legal or contractual obligations such as providing water for tribes, water right settlements, river restoration, minimum flows, legal court orders, or other obligations? Explains. Note: A Project may help Reclamation fulfill its obligations even if the project sponsor is not a Reclamation contractor, and indirect benefits to Reclamation will also be considered under this criterion.

The mission of the Bureau of Reclamation is to "manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public," and the Pure Water Soquel Project certainly advances this idea. As has been described in detail in this proposal, the entirety of the drinking water supply for the customers of the Soquel Creek Water District (District) comes from a groundwater basin (3-001) that is critically overdrafted, as designated by the State of California, and confirmed by advanced airborne technology used for the first time in the United States. The environmental benefits of water recycling are well known, and the Pure Water Soquel Project will save the Monterey Bay National Marine Sanctuary and Pacific Ocean from a great deal of treated wastewater that is discharged daily and instead embrace this recycled water as a beneficial resource.

The directly-elected District Board of Directors, in a very public and transparent process, decided on a solution to this problem that will provide benefits beyond its service area and minimize the burdens on its ratepayers. Pure Water Soquel can be a showcase project of expanding reuse for seawater intrusion protection and the District hopes that it can be an example for other agencies facing the same challenges. Coastal communities across the country, many of which are likely to experience similar seawater intrusion problems in the coming years, will be able to use the lessons learned from Pure Water Soquel to seek relief from their own seawater intrusion problems. For example, our neighbors to the south, the Pajaro Valley Water Management Agency (PV Water) with funding from the Bureau, have made a significant investment in a recycled water facility for direct agricultural irrigation. To leverage the investment already made, PV Water may consider expanding the use of the recycled water during the non-irrigation season and could build on the knowledge and experience gained through the implementation of Pure Water Soquel.

As shown in **Table 3-13**, the District is pleased to have the USBR's support and partnership into our region's water supply reliability with funding of Pure Water Soquel. The District is requesting the balance of the funding authorization, $20.925 M, which will complete the USBR's investment share in the Project.

In addition, the accuracy of the SkyTEM technology has proven to be a resource that other communities across the country can rely on. The District plans on conducting another fly-over and mapping five years after operations of Pure Water Soquel, which could then be used to track the rate of seawater intrusion when compared to our 2017 flight.

Table 3-13 Title XVI Funding for Pure Water Soquel (Awarded and Requested)		
Title XVI Cycle	**Amount**	**Notes**
WIIN, FY 2019 and 2020	$6.075 M	Congress notified on 12/3/2020 USBR issued letter of award on 12/8/2020
WIIN, FY 2021	$3 M	Congress notified on 7/23/2021 USBR issued letter of award on 7/30/2021
WIIN, FY 2022	$20.925 M	Applying for 3/15/2022

Subcriterion No. 4b. Benefits to Rural and Disadvantaged Communities

1. Does the Project serve a rural community, or are there any rural communities within the Project sponsor's service area? If so, provide supporting information. A rural community is defined as a community with fewer than 50,000 people.

Most of the District service territory is comprised of unincorporated parts of Santa Cruz County, a small, mountainous coastal county. All the communities in the service territory would fall below the 50,000-person threshold, though much of the District is urban residential. At least two Census block groups served by the District have population densities below 250 people per square mile. These two block groups, each partially served by the District, would qualify under any definition of rural by the Census Bureau. Outside of the District but within the area of project impact, there are at least 10 additional Census block groups with rural levels of population density [U.S. Bureau of the Census. 2014. American Community Surveys, 5-year estimates].

2. E.O. 14008 and E.O. 13985 affirm the advancement of environmental justice and equity for all through the development and funding of programs to invest in disadvantaged or underserved communities.

Does the Project serve an economically disadvantaged community, or are there any economically disadvantaged communities within the Project sponsor's service area? If so, provide supporting information. This may include neighborhoods or census tracts within a larger service area that are economically disadvantaged that are part of a larger urban area.

Yes. Within the Soquel Creek Water District service area, there are two disadvantaged communities Census block groups. The California MHI for the Census American Community Survey (ACS): 2014-2018 dataset is $71,228, thus 80% and 60% of that value represents the Disadvantaged Community (DAC) and Severely Disadvantaged Community (SDAC) thresholds, respectively. Therefore, a community where the MHI is less than $56,982 meets the DAC threshold and $42,737 meets the SDAC threshold.

As shown on **Figure 3-12,** there is a block group located just east of Highway 1, which includes a population of 536 with an MHI of $53,125. The District serves just the green shaded area of that block group, which is a large condominium complex. The second, larger block group located west of Highway 1, includes a population of 881 with an MHI of $43,269, just slightly above the SDAC threshold. These DAC populations represent 3.5% of the District's total population of 40,400.

Outside of the District but within the area of project impact, there are additional DAC and SDAC communities. Within the Santa Cruz Mid-County Basin, there is one SDAC with a population of

1,490 and an extremely low MHI of $37,750 and two DACs, with populations of 1,266 and 1,248 and MHI of $52,941 $54,179, respectively. In addition, the neighboring Santa Cruz Municipal Utilities' service area includes multiple additional such communities, including an additional 10 severely disadvantage communities (populations 366, 433, 611, 664, 986, 1170, 1436, 2090, 2262, and 5202 total) and an additional three disadvantaged communities (populations 1416, 1531, and 1588). The implementation of Pure Water Soquel would reduce groundwater stress and increase water supply reliability for all these communities.

Figure 3-12 Disadvantaged Communities Map

The Title XVI Program provides support for priorities identified in Presidential E.O. 14008: *Tackling the Climate Crisis at Home and Abroad and* E.O. 13985: *Advancing Racial Equity and Support for Underserved Communities*. The District's mission and the Pure Water Soquel Project align with these priorities and failure to implement the Project could have catastrophic and irreversible climate change impacts, with the results most adversely affecting the economically disadvantaged.

Consistent with E.O. 14008, the District has "*a narrow moment to pursue action at home...in order to avoid the most catastrophic impacts of that crisis and to seize the opportunity that tackling climate change presents."* Coastal monitoring wells indicate the presence of seawater intrusion and the progressive contamination of the Basin at the coast. The District's wells are closest to the coast and most susceptible to seawater intrusion contamination, which can be irreversible. The District recognizes this "*narrow moment*" when opportunities can be seized and the Project can be implemented to avoid catastrophic and irreversible impacts of climate change.

As described in **Criterion 3,** without the project, the District would be required to implement significant water use restrictions to limit Basin extraction to no more than 2,300 AFY. In the Economic Study, Dr. Haddad analyzes the revenue change that would be necessary to reduce water use to 2,300 AFY, the maximum groundwater available if the Project is not implemented. As described in the study, the District would have to set water prices such that total consumption is equal to the available supply. The District would charge prices that are low enough to not further reduce consumption below the available supply, but the District would not reduce prices to the point that demand outstrips supply. The practical implication of this method is that the equilibrium prices and quantities are found through the intersection of the demand curve with the supply constraints imposed for the sustainability of the Basin. As documented in the Study, to generate enough curtailment to comply with 2,300 AFY, the District would need to raise prices to nearly $12,000 per AF until the Basin is no longer overdrafted. These rates would most impact people affected by persistent poverty, potentially driving them out of the community. Pure Water Soquel will deliver a clean and affordable water supply for everyone, and will avoid a disproportionate impact on those affected by persistent poverty.

The economic analysis also found that 2,122 housing units would not be constructed, exacerbating a perennial problem of high housing costs and a lack of affordable housing. As described in Criterion 3, the No-Project alternative would prevent the construction of new housing units and cause significant job losses. The economic analysis estimates that 2,122 housing units would not be constructed through 2035 due to a pending moratorium on new water connections should the Project not be built and additional water not secured. Blocking construction of new housing is a contentious social issue in the region. As of 2015, the service area included 20,285 housing units, with a perennial problem of high housing costs and a lack of affordable housing. According to Demographia, an Australian research group, “Santa Cruz, California, located in the San Francisco Bay Area, is the least affordable market in the United States.” Demographia point to restrictions on new housing expansion as a key driver of this crisis.

The severity of the housing crisis in the District service area was highlighted by the “failing grades” in the most recent Housing Permit Report Card. The Southern California News Group has graded each city and county in the state of California on how well it’s meeting state-mandated goals to permit housing in four affordability categories through the end of 2020. The Report Card tracks the number of actual housing permits issued, the number of permits required to be on track to meet the housing goal, and the final housing goal in 2023, each by affordability category. As shown in the **Figure 3-13,** the City of Capitola, the only incorporated city located within the District service area, received an “F” grade in the Very Low and Low Income Housing categories and a “D” grade in the Moderate Income Housing category. Without a new, affordable and reliable water supply, this housing crisis will get worse. While the social cost of restricting housing development due to insufficient water supply extends to all income levels and affects everyone, it especially affects those who can least afford housing.

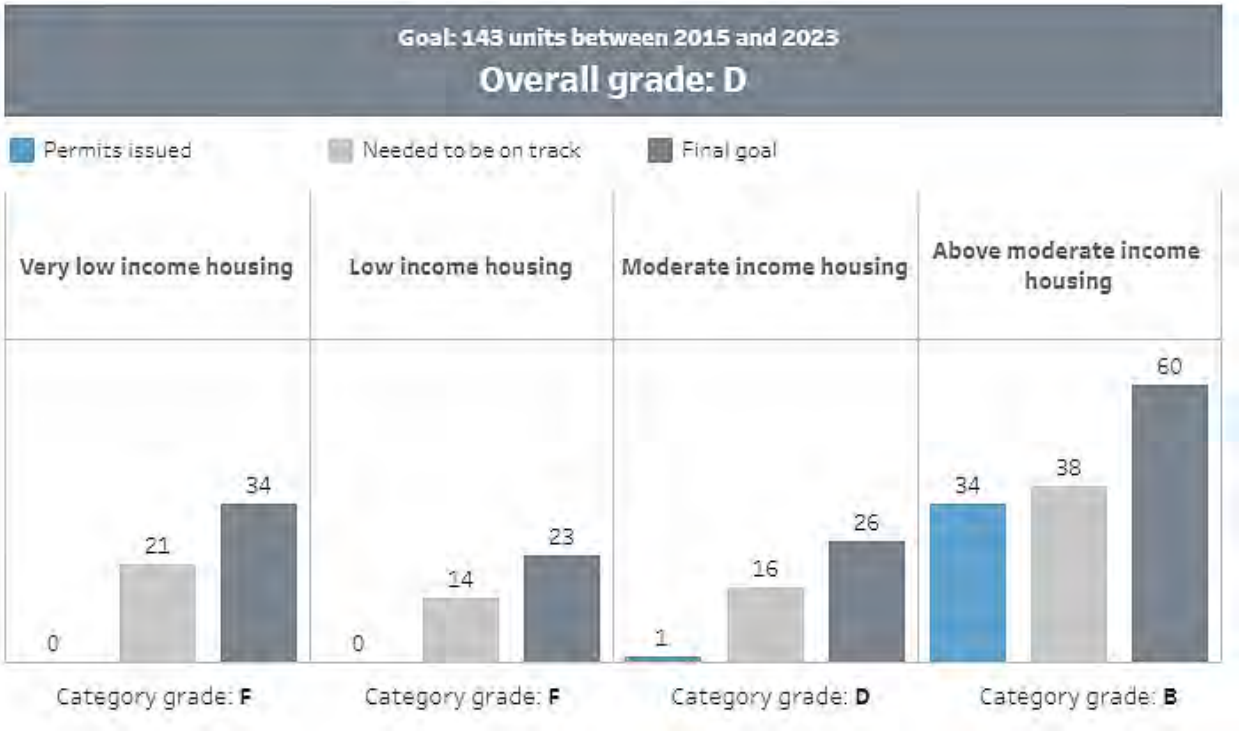


Figure 3-13 Housing Permit Report Card- City of Capitola

Using estimates from M.Cubed (2008) and employment figures from BEA, the analysis estimates job losses of around 727, representing 3.8% of employment in the service area. Further, the District's economic study estimated that $47 million commercial loss would occur each year through 2044. The lost jobs would likely be from the service industry that would be significantly impacted by the severe water restrictions and loss of tourism. Again, the economically disadvantaged communities would be most impacted by the loss of jobs if the Project is not implemented.

Pure Water Soquel will deliver an affordable water supply, improve housing opportunities, and preserve employment opportunities. Thus, Pure Water Soquel serves and protects the economically disadvantaged communities within the District's service area and the greater Santa Cruz Region and is consistent with the E.O.s advancement of environmental justice and equity for all.

EVALUATION CRITERION 5: WATERSHED PERSPECTIVE

1. Does the Project implement a regional or state water plan or an integrated resource management plan? Explain.

Yes. Pure Water Soquel Project is a regional project and aids in meeting the implementation of multiple regional and statewide water plans that include:

- **State's Groundwater Sustainability Plan (GSP):** The establishment of the Santa Cruz Mid-County Groundwater Agency (MGA) as a Joint Powers Authority charged with

implementing the Sustainable Groundwater Management Act (SGMA) has created a new venue for regional cooperation and the development of a GSP by 2020. The Santa Cruz Mid-County Groundwater Basin area covers the mid-Santa Cruz County region and extends from Branciforte Creek in the west through Aptos and La Selva Beach to the east; from the Zayante fault (somewhat below Summit Road) in the north to the ocean in the south. The MGA is led by an 11-member board comprised of two elected officials from Central Water District, City of Santa Cruz, County of Santa Cruz, and Soquel Creek Water District, plus three private well representatives. The Pure Water Soquel is the only water supply project currently in construction that is included in the GSP; other options are still in proof-of-concept.

- **Santa Cruz Integrated Water Management Program (IRWM):** The District is a partner agency for the Santa Cruz Integrated Regional Water Management Program (IRWM) program that provides a framework for local stakeholders to manage this region's water and water-related resources. The Santa Cruz IRWM Plan was developed in response to California's IRWM planning initiative to promote an informed, locally-driven, and consensus-based approach to water resources management. The IRWM Plan includes strategies for developing and implementing policies and projects to ensure sustainable water use, reliable water supply, better water quality, improved flood protection and stormwater management, and environmental stewardship. The Pure Water Soquel Project is included in the Santa Cruz IRWM.
- **California's Recycled Water Goals:** The statewide goal is to recycle 2.5 million AFY by 2030. The Pure Water Soquel Project would aid the State in meeting this Goal.
- **District's Urban Water Management Plan:** The District's draft 2020 Urban Water Management Plan identifies the critical need for supplemental water supply and includes Pure Water Soquel as an integral component to ensure a reliable drinking water supply for current and future generations.
- **City of Santa Cruz Water Augmentation Strategy:** As part of the City's Water Supply Advisory Committee's efforts, recycled water for irrigation purposes and partnerships with the District's Pure Water Soquel continues to be an option for the City to consider.

2. Does the Project help meet the water supply needs of a large geographic area, region, or watershed? Explain.

Yes. Pure Water Soquel will provide aid to the critical regional groundwater shortage of the Santa Cruz Mid-County Groundwater Basin. The District's water supply portfolio relies solely on local groundwater for potable use from the Santa Cruz Mid-County Groundwater Basin. The District is entirely dependent on groundwater from two formations, drawing approximately 70% of its water supply from the Purisima Formation and 30% from the Aromas Red Sands aquifer. These aquifers are shared with adjoining water agencies and a multitude of private well users.

Basin overdraft has led to coastal seawater intrusion and increasing salt concentrations have been detected in coastal monitoring wells for much of the Aromas and at limited locations in the Purisima Formation. As the basin is shared by thousands of private well owners and other municipal water agencies such the City of Santa Cruz, County of Santa Cruz, and Central Water District, the supplemental water from Pure Water Soquel will prevent seawater intrusion from

moving farther inland and contaminating the drinking water wells in the Coastal Region of the groundwater basin, including District and other regional water agencies wells.

The total groundwater pumping within the Coastal Region of the Santa Cruz Mid-County Groundwater Basin is 5,800 AFY, of which the District's long-term forecast demand is 3,800 AFY (**Figure 3-14**). Hydrologic analysis and evaluations estimate that the District must limit its net groundwater extractions to no more than 2,300 AFY and develop approximately 1,500 AFY of supplemental supply to contribute to basin recovery and protect against seawater intrusion (Water Systems Consulting, 2015). Pure Water Soquel will completely meet the District's required contribution to restore the groundwater basin to sustainable levels. Phase I will supply 1,500 AFY of purified reclaimed water for groundwater recharge, fulfill 100% of the supplemental supply needed by the District, and aid in ensuring more than 5,800 AFY of groundwater supply in this Coastal Region is available and high-quality fresh drinking water that is protected from seawater intrusion for the greater community.

Additionally, the City of Santa Cruz does not have enough water to meet current demands during a drought. Even with ongoing conservation efforts and up to 15% water-use restrictions during drought conditions, additional water supplies are needed to meet potable water needs for public health and safety, economic stability, and provide water for protection of endangered species. The City is currently considering a water supply alternative that requires increased surface water diversions to meet projected demands and create drought resiliency. If and when expanded, the City could avoid implementing the surface water diversion project. By reducing surface water diversions, more water can remain to help preserve the natural flows and avoid surface water quality impacts. When expanded, the entire coastal region will be able to achieve drought resiliency, adapt to climate change conditions, and achieve the State's mandate of Basin sustainability by 2040.

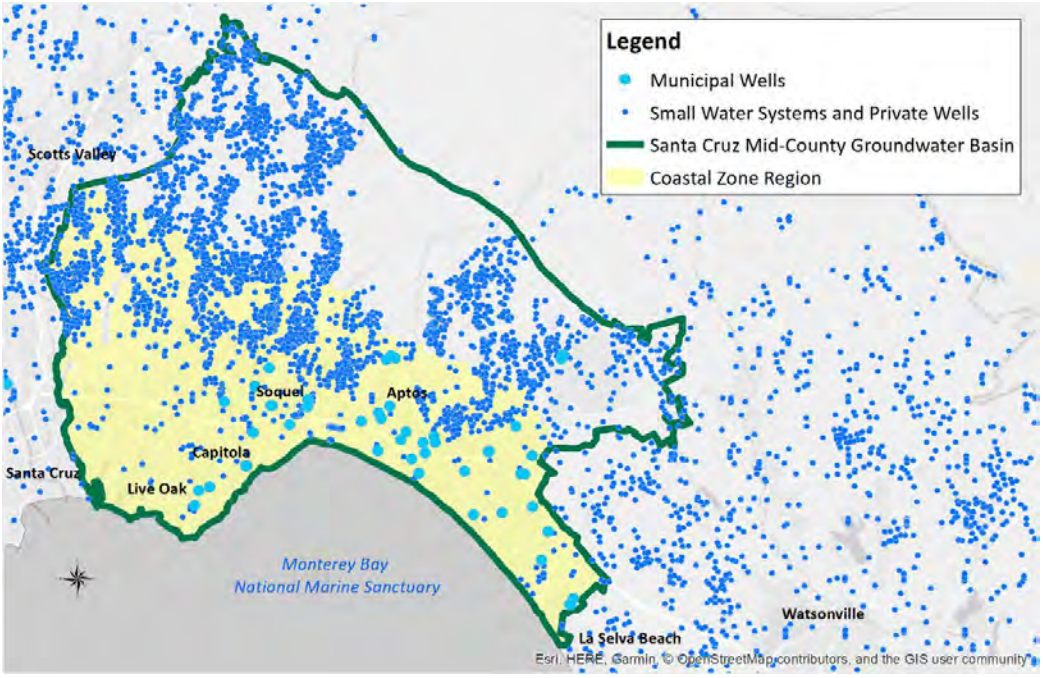


Figure 3-14 Santa Cruz Mid-County Groundwater Basin

3. Does the Project promote collaborative partnerships to address water-related issues? Explain.

Yes. The shared danger of seawater intrusion to the coastal aquifer has stimulated several decades of study, planning, and some project cooperation within the region. The Project will provide opportunities for further collaboration on creative solutions to the region's water problems.

The District and its neighbors have been cooperating on groundwater basin management since the 1990s. The Santa Cruz Mid-County Groundwater Agency (MGA) engaged with stakeholders in a very lengthy and public process to develop a Groundwater Sustainability Plan (GSP), which was adopted in 2020. SGMA requires that water use in the Basin must be sustainable by 2040, with the MGA and its GSP guiding the area towards that target. Well attended community meetings with basin users include engaging members of the public that have predominantly supported the need to restore sustainability of the basin. Pure Water Soquel will help implement the region's GSP while also creating opportunities for future regional water coordination. By enabling the reallocation of District pumping to the Purisima Aquifer near the SWIP injection wells, the Project will allow other parties in the Basin to reduce withdrawals from Aromas Red Sands, or to more rapidly replenish Aromas Red Sands without reductions in withdrawal. The Project therefore creates an opportunity for new approaches to regional aquifer management.

The establishment of Pure Water Soquel's tertiary treatment at the Santa Cruz Wastewater Treatment Facility and new piping system for reclaimed water will pass in part through the City of Santa Cruz will further create opportunities for shared improvements or expansion of the Pure Water Soquel involving both agencies. This could involve potential expansion for non-potable irrigation uses as well as potable reuse.

4. Does the project include public outreach and opportunities for the public to learn about the project?

Because of the multi-decade regional groundwater crisis that has led District customers to be among the most water-conserving customers in California, awareness of water supply challenges and solutions is widespread. The District has well-established community outreach programs. Pure Water Soquel emerges from a multi-year planning process that has engaged the community through problem characterization, option evaluation, environmental review, and now design. In addition to the formal public comment period and other legally required engagement, the District regularly hosts public events where the community can both learn about the Project and provide informal input to the District. The District has a tradition of outreach and communication with customers and regional neighbors that will continue once the Project is operational. Support for water recycling is high in the region with an over 75%

Figure 3-15 District's Learning Center with Pure Water Soquel Displays

acceptance of recycled water for groundwater replenishment.

The District utilizes numerous educational approaches to reach the broadest spectrum of our community including writing "Water Wisdom," a monthly column about the Project and the importance of recycled water, unveiling its Pure Water Soquel and Community Water Plan Learning Center located at District Headquarters (**Figure 3-15**, funded in part by a Title XVI Planning grant), and launching the Water Education Trailer (**Figure 3-16**) that is driven to schools and other groups where it is opened up and serves as a mobile water museum covering groundwater recharge and advanced water purification.

Figure 3-16 Pure Water Soquel Educational Trailer was awarded in 2018 the National Recognition Award for Outreach Excellence

Staff as well as the local elected leadership of the Board of Directors are actively getting out into the public to share knowledge on the proposed Pure Water Soquel project and the District's Community Water Plan efforts. In 2018, the District launched "Coffee Talk" where District reps go out into the community and make themselves available at local cafes and coffee shops within our service area.

4 ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

The approach to developing Pure Water Soquel is to minimize overall environmental impacts during construction and operations and maximize the benefits so that the project is a "win-win" for the environment and community. A Project-Level Final Environmental Impact Report for the District was performed that met the requirements under the California Environmental Quality Act (CEQA) and includes many components necessary under the National Environmental Protection Act (NEPA). The project will inject 1,500 AFY of purified recycled water in the groundwater basin while allowing for conveyance infrastructure and treatment footprints that accommodate expansion of the treatment system, should an additional 1,500 AFY of purified recycled water be needed to address basin-wide groundwater overdraft and state mandate, drought conditions, and adapt to climate change. The Project is compliant with NEPA through the EPA's Water Infrastructure Finance Innovation Act (WIFIA)Programmatic Environmental Assessment (PEA) review process. The project received the PEA memo from the EPA on September 11, 2020, which determined an associated Finding of No Significant Impact (FONSI). This documentation fully covers the proposed action and constitutes

The Pure Water Soquel Project is compliant with NEPA through the EPA's Water Infrastructure Finance Innovation Act (WIFIA)Programmatic Environmental Assessment (PEA) review process. The project received the PEA memo from the EPA on 9/11/20, which determined an associated Finding of No Significant Impact (FONSI). The USBR is utilizing the EPA PEA and FONSI to support their NEPA compliance effort, currently scheduled for completion in September 2022.

the project's compliance with the EPA's NEPA requirements. Additionally, as the federal funding agency for two prior Title XVI grant awards, the USBR is also responsible for compliance with NEPA. Since 2021, District and USBR staff have been working together to complete the Environmental Assessment and, building on the environmental analysis and consultations already completed by the EPA, USBR staff anticipate completing the EA and FONSI by September 2022. The project will also comply with all applicable state, Federal and local environmental, cultural, and paleontological resource protection laws and regulations. When expanded, additional applicable CEQA/NEPA would be further evaluated, if required.

Air, Greenhouse Gas Emissions and Clean Power

The Pure Water Soquel Project will be carbon-free as the electrical power will be supplied by a new Monterey Bay Community Power (MBCP) which promotes clean electricity. MBCP procures electricity from carbon-free sources such as solar, wind, and hydroelectric. In addition to being carbon-free, MBCP does not use power produced from nuclear energy or any fossil-based sources. This source of supply is new to the District, beginning in 2018. Operation of the pumps, pipelines, and the SWIP wells would not generate odorous emissions, because they would be closed systems. The chemical storage and chemical feed facilities at the AWPF site would also be closed systems that would not generate any odorous emissions. With respect to purification process, there would be no objectionable smells/odor, because it would not involve handling of raw/untreated wastewater.

Water Impacts

Beneficial increases in protective water levels can be achieved due to the Pure Water Soquel Project, based on groundwater modeling results and show an increase in groundwater levels in the Purisima A and B/C units near the Cabrillo College/Twin Lakes Church and Monterey Avenue SWIP Well Sites. By resting wells near the coast and optimizing groundwater extractions closer to the SWIP/Recharge wells, a larger area of groundwater protection can be realized. Such an increase would not reduce the volume or quality of water in Project area streams, such as Soquel Creek or the San Lorenzo River; and as such, no associated impacts would occur to common or special-status fish and wildlife associated with these drainages because of reduced flows or lower water volume.

Federally Threatened or Endangered Species

A critical habitat map within 2 miles of the Project is shown in **Figure 4-1**. Of the species listed or proposed to be listed as a Federal threatened or endangered species, only the Central California Coast Steelhead has designated critical habitat relative to the Project area at Pipeline crossings across San Lorenzo River, Soquel Creek, and tributaries to Arana Gulch. The District will follow all mitigation measures for construction of the Pipeline crossing and would not threaten or endanger Central California Coast Steelhead

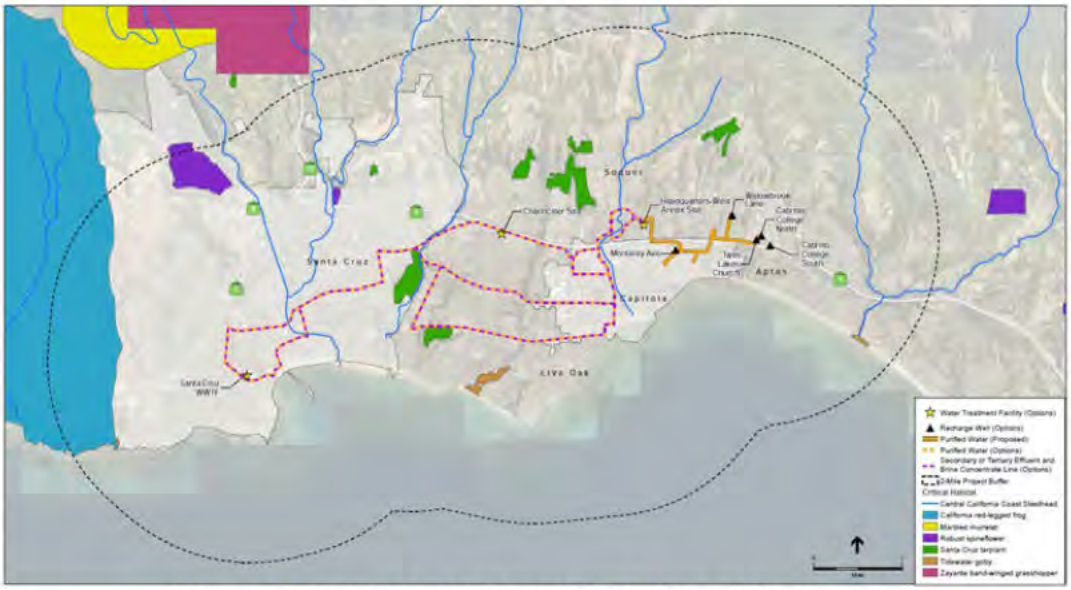


Figure 4-1 Critical Habitat Within 2 Miles of the Project

Wetlands and other surface water within Clean Water Act Jurisdiction

Wetlands or other surface waters inside the Project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as "Waters of the United States.

The District has completed a project-level environmental impact report (EIR) for Pure Water Soquel, which was certified, and the project approved in December 2018. Within the study area, instream wetlands occur at various locations along the project pipeline alignment. Because in-water work is not proposed at these sites, direct impacts are not expected. The analysis from the EIR and PEA determined that Project construction would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (See **Figure 4-2** and **Figure 4-3**).

Figure 4-2 Potential Jurisdictional Waters in the Vicinity of the Pure Water Soquel Project (1 of 2)

Figure 4-3 Potential Jurisdictional Waters in the Vicinity of the Pure Water Soquel Project (2 of 2)

Water System Delivery

When was the water delivery system constructed?

The Soquel Creek Water District System is 100% dependent on groundwater. The proposed Pure Water Soquel recharge project would be independent of the District system. Pure Water Soquel would be built by Soquel Creek Water District starting in 2019 with the expected completion date of 2023.

Irrigation System Impacts

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 District will not be performing any modifications to any irrigation systems. Any irrigation system within the District boundaries is a standalone system.

National Register of Historic Places

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.

There are no previously recorded architectural resources in the Area of Potential Effect (APE) on file at the Northwest Information Center (NWIC). Possible architectural resources were identified in the Project area during the survey effort: one residential building at the Chanticleer site, and the complex of industrial buildings that comprise the SC WWTF. These resources have been evaluated for their potential significance and eligibility for listing in the California and National Registers and are not eligible for listing.

Archeological Sites

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

There are eight (8) prehistoric archaeological resources within or immediately adjacent to the Area of Potential Effects. Eight (8) archaeological resources are within or immediately adjacent to the Project area. These resources are all located along pipeline alignments and are not within or adjacent to the nonlinear facilities (SC WWTF, Chanticleer Site, or construction area for the SWIP wells, monitoring wells, and associated pump stations).

Low Income and Minority Populations

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

No, the project will not. The goal of the project is to provide and protect the groundwater basin that serves the entire Coastal community. An economic study funded by the District has found that, without the Project, 727 jobs would be lost, representing 3.8% of employment in the service area. The lost jobs would likely be from the service industry that would be significantly impacted by the severe water restrictions and loss of tourism. The analysis also found that 2,122 housing units would not be constructed, exacerbating a perennial problem of high housing costs and a lack of affordable housing. In addition, the study estimated that without the Project the customers would have to face mandatory curtailment and pay approximately three times more for their water. If the Project is not implemented, the economically disadvantaged would be most impacted and have less access to employment and housing in the region.

Ongoing meetings with regulators and permitting agencies such as the State Water Resources Control Board's Division of Drinking Water and Regional Water Quality Control Board have occurred as part of a technical advisory committee (TAC) that has been created by the State to oversee near-term activities of Pure Water Soquel and continues to remain intact throughout the Project's implementation.

Tribal Lands Impacts

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

No, based on the Northwest Information Center background research and surface survey, there are no known Indian sacred, ceremonial, or gathering places in the Project area.

Invasive Species

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, the project will not contribute to this.

5 REQUIRED PERMITS OR APPROVALS

Since 2019, the District has been actively working on design, permitting, and construction of Pure Water Soquel.

Early coordination with the permitting agencies has been a priority to reduce the potential for conflicts or delays. In addition to meeting with many of the agencies and providing regular project updates, the anticipated permitting requirements and resource agency priorities have been

considered throughout the development of Pure Water Soquel.

Since 2018, recurring meetings with regulators and permitting agencies such as the State Water Resources Control Board's Division of Drinking Water and Regional Water Quality Control Board have held as part of a technical advisory committee (TAC) that was created by the State to oversee activities of Pure Water Soquel and continues to remain intact throughout the Project's implementation.

The District has secured permits required for the construction of the PWS project components. The special conditions of the Coastal Development Permit from the California Coastal Commission have all been satisfied or pending. The operational permits required for project implementation are pending, including the Waste Discharge Requirements Permit (WDR) and the National Pollutant Discharge Elimination System (NPDES) permit, both issued by the Central Coast Regional Water Quality Control Board. The WDR permit will follow approval of the Title 22 Engineering Report by the Division of Drinking Water and is for injection of purified water into the groundwater basin.

Project funding through EPA's Water Infrastructure Finance Innovation Act (WIFIA) loan program was secured in September 2020. Through the WIFIA loan program, the EPA is acting as the Federal Lead Agency for the project and as such conducted environmental review in compliance with NEPA. The EPA issued a WIFIA PEA Memo on 9/11/20 that analyzed the potential environmental impacts of the project and determined a Finding of No Significant Impact (FONSI). This documentation fully covers the proposed action and constitutes EPA's compliance with the requirements of the NEPA. Through the EPA's cross cutter environmental review process, concurrence letters of the EPA's findings on the project have also been received from US Fish and Wildlife and the State Historic Preservation Office. As the federal funding agency for two prior Title XVI grant awards, the USBR is also responsible for compliance with NEPA. USBR will rely on much of the environmental analysis and consultations already completed by the EPA to complete the EA and FONSI, significantly streamlining the process. USBR currently anticipates completion of the EA and FONSI by September 2022.

6 OTHER FEDERAL FUNDING

The Project has received other federal funding, other than Title XVI funding, in the form of an EPA Water Infrastructure Finance and Innovation Act (WIFIA) loan, that was executed on September 28, 2020, for up to $88.9M. The non-Federal cost-share provided for the loan is the required 51%. The loan will fund planning, design and construction costs dating back to January 2019, not otherwise funded by the State grant and loan or the Title XVI grant. The WIFIA loan amount also accounts for contingency costs and, at this time, the District does not anticipate drawing the full amount of the loan. For more information, please see https://www.epa.gov/wifia/pure-water-soquel.

7 PROJECT BUDGET

The District is committed to implementing Pure Water Soquel to defend and protect against the seawater contamination that is occurring along the coastline and bringing the basin into sustainability by the state's mandate of 2040. The Project Budget includes the funding plan and letters of commitment, budget proposal, and budget narrative in accordance with the NOFO for

costs incurred after the date of the Reclamation Feasibility Study Review Findings for the Project (September 2018) and planned to be incurred by September 30, 2025.

FUNDING PLAN AND LETTERS OF COMMITMENT

Costs that have been identified for planning, design, and construction of the Project incurred after the date of Reclamation's feasibility study review findings for the Project through September 30, 2025. Costs for previous years have been updated to reflect actuals. The total costs for the Pure Water Soquel Project planned during this timeframe is $169.3 M (**Tables 7-1 and 7-2**).

Table 7-1 Total Estimated Construction Costs (September 2018 through September 2025)

District FY	Cost	Major Construction Activities
2018-2019	$1.51 M	Complete procurement for conveyance and treatment facilities. Start design and pre-construction for SWIP wells.
2019-2020	$1.30 M	Start and complete conveyance and SWIP wells design. Start treatment facilities final design and pre-construction. Start SWIP wells construction.
2020-2021	$6.07 M	Begin conveyance construction and continue treatment facilities design.
2021-2022	$64.14 M	Complete treatment facilities design and begin construction. Complete SWIP monitoring wells design and begin construction.
2022-2023	$58.55 M	Complete conveyance construction. Complete SWIP well equipping design and begin construction.
2023-2024	$5.55 M	Complete treatment facilities construction and begin start-up and commissioning.
	$137.12 M	

Table 7-2 Total Estimated Planning and Design Costs (in Millions) (September 2018 through September 2025)

District FY	Planning and Program Management	Admin /Legal	Design	Land	Cost
2018-2019	$1.67 M	$0.07 M	-	-	$1.74 M
2019-2020	$2.89 M	$0.45 M	$4.37 M	$3.28 M	$10.99 M
2019-2021	$2.38 M	$0.43 M	$8.05 M	$1.44 M	$12.30 M
2021-2022	$2.02 M	$0.12 M	$2.62 M	$0.52 M	$5.28 M
2022-2023	$1.67 M	$0.13 M	-	-	$1.80 M
2023-2024	0.10 M	-	-	-	$0.10 M
	$10.73 M	**$1.2 M**	**$15.04 M**	**$5.24 M**	**$32.21 M**

The Pure Water Soquel project financial structure will combine CA Proposition 1 grant funds, USBR Title XVI grant funds, pay-go funds, and low interest loan financing through EPA WIFIA program and CA Seawater Intrusion Control program for the design through construction of the project. In addition, approximately $2.78 million in collected water capacity funds are available for spending on the Pure Water Soquel project.

The District completed developing the 10-year finance plan and five-year rate study in 2018 to ensure rate increases are sufficient to achieve debt service coverage covenants above minimum coverage thresholds. The District's sole source of revenue is water rates and charges collected from users of the water system. The water rates and charges are established by the elected governing board and, while not subject to review or approval by any other agency, are adopted in accordance with the regulations of California Proposition 218. The District provides water service to approximately 14,000 primarily domestic service connections, serving a population of over 40,000 residents. Over 1,400 of the District's customers also have private fire service meters. The District adopted five years of rates in 2019, based on the 10-year finance plan which included design and construction of the Pure Water Soquel Project. A 9% rate increase occurred in 2019, 2020, 2021, and 2022, and the following year of 2023 will also see a 9% annual increase.

The District's commodity rates for water for single and family residences are charged on a two-tier structure where Tier 1 is based on every customer sustaining on a limited supply of groundwater (2,300 AFY) and cost $8.34/unit for up to 6 units. After 6 units, the cost of water goes up to $37.82/unit.

WATER QUANTITY CHARGES

UNITS 1 unit = 748 gallons	Cost per Unit
Residential	
1-5.99 units	$8.34
6+ units	$37.82
Commercial	$13.99
Irrigation/ Outdoor Use	$13.99

To reduce the financial burden on our ratepayers, the District has been seeking outside funding assistance and desires to partner with state and federal agencies to invest in Pure Water Soquel because of the multiple benefits the project provides.

Financing Summary and US Bureau of Reclamation Funding Request

Eligible Project costs from the acceptance date the Pure Water Soquel feasibility study was accepted by Congress (September 2018) through September 30, 2025 are $169.33M and the District is seeking a grant equal to $20.925 M (which is the remaining qualified amount up to $30M and doesn't exceed 25% of the total project cost).

With the project development now in its Implementation Phase, the funds would contribute to the costs spent during this time period, which includes design and construction for all components (treatment facilities, conveyance infrastructure, and SWIP wells) as well as all project support (including, but not limited to, land acquisition, permitting, legal support, and project and construction administration/management). For additional discussion on the project and associated costs, see 'Budget Proposal and Narrative' Section below.

The Financing summary for this funding request is shown in the following **Table 7-3** and the Summary of Non-Federal and Federal Funding Sources through September 2025 is shown in **Table 7-4.**

Table 7-3 Financing Summary for Pure Water Soquel (District September 2018 – September 2025) (in Millions)								
Funding Source	**2018-2019**	**2019-2020**	**2020-2021**	**2021-2022**	**2022-2023**	**2023-2024**	**Total**	**Funding Status**
WaterSMART Title XVI	-	-	$6.075	$3.00	$20.925	-	$30.00	$9.075M awarded as of 7/30/21
SWRCB Proposition 1 Planning Grant	$1.50	$0.50	-	-	-	-	$2.00	$2M Grant awarded with eligible start date January 17, 2018.
SWRCB Proposition 1 Implementation Grant	-	$3.00	$9.00	$27.00	$11.00	-	$50.00	$50M Grant awarded with eligible start date January 17, 2018.
Seawater Intrusion Control Loan	-	-	-	-	$28.08	$5.65	$33.73	Anticipated Fall 2022
District Water Capacity Funds	-	$2.30	$0.14	$0.17	$0.17	-	$2.78	Funds collected from development for future water supply projects.
WIFIA Loan	$1.75	$6.49	$3.15	$39.25	$0.18	-	$50.82	WIFIA loan executed September 2020.
Total	**$3.25**	**$12.29**	**$18.37**	**$69.42**	**$60.35**	**$5.65**	**$169.33**	

Note: District Rate study was prepared in 2018 to establish rates necessary for debt service and assumed 3% traditional loan rate. Final results of Title XVI application (R21AS000429) and potential other State loans and amounts will alter the debt financing. Project contingencies also not included.

The District was awarded a $2M planning grant in 2018 and a $50M implementation grant in 2020 from the State Water Resources Control Board Proposition 1 Groundwater Quality Grant Program. The District originated a low-interest loan through EPA's WIFIA program in September 2020 for up to $88.9M and is working with the State Water Resources Control Board on a loan

through the Seawater Intrusion Control (SWIC) loan program for $33.7M with an expected executed agreement by September 2022. As these are reimbursement funding programs, the District secured up to $75M in interim short-term financing through CoBank to assist with cashflow and ensure that continued momentum on the project's execution successfully continues. The District's financial condition continues to be sound, with no risk of imminent default or bankruptcy. The District is current with all continuing disclosure requirements.

As required, the following financial commitment documents from third-party funding sources are attached to this application (**Appendix C**) and submitted separately through grants.gov : CA SWRCB Proposition 1 Planning Grant Agreement, CA SWRCB Proposition 1 Implementation Grant Agreement, CA SWRCB Seawater Intrusion Control Loan Board Approval Documents, EPA WIFIA Loan Agreement and USBR Title XVI WaterSMART Grant Award Letter.

Table 7-4: Summary of Non-Federal and Federal Funding Sources for Pure Water Soquel through September 2025

Funding Sources to Date	Funding Amount
Non-Federal Entities	
1. Soquel Creek Water District	$2,780,000
2. CA SWRCB Proposition 1 Planning Grant (executed 2/1/2019)	$2,000,000
3. CA SWRCB Proposition 1 Implementation Grant (executed 7/2/2020)	$50,000,000
4. CA Seawater Intrusion Control Loan (expected execution date of September 2022)	$33,730,000
Non-Federal Subtotal	**$88,510,000**
Other Federal Funding Entities	
1. EPA WIFIA Loan[1]	$50,817,000
Reclamation Funding	
1. Title XVI WaterSMART Grant (BOR-DO-19F018) (award letter dated 12/8/2020)	$9,075,000
2. Requested Reclamation Funding (R21AS000429)[2]	**$20,925,000**
Federal Subtotal	**$80,817,000**
Total Project Funding	**$169,330,000**

Notes:
1 WIFIA loan may not exceed 49% of total project cost.
2 Title XVI funding shall not exceed 25% of total project cost, up to a maximum of $30M per project. The District has been awarded $9,075,0000; thus the District is requesting the remaining eligible amount in this application.

Budget Proposal and Narrative

Total Pure Water Soquel Project costs including planning, design and construction in

accordance with this NOFO through September 30, 2025, is $169.33 million. Information on how cost estimates were developed for each cost classification is presented below.

Salaries and Wages, Fringe Benefits, and Travel

Given the size and staffing level of the District, all services related to Pure Water Soquel are assumed to be provided by professional consultants or contractors and no costs or services are assigned to agency staff or personnel in this budget. Thus, no salaries, fringe benefits, travel, etc. are included as separate line items in the budget.

Equipment, Material, and Supplies

All equipment, materials, and supplies are included in the construction costs and thus, not included as a separate line item in the budget.

Contractual

As described earlier, professional consultants and contractors have been procured and utilized to successfully implement Pure Water Soquel.

- Consultant contracts have been procured and issued in accordance with the District's Procurement Procedures for preliminary design, cost validation, permitting/environmental, legal assistance, program management and administration, funding assistance, legal support, land use, public education and outreach, construction management, labor compliance monitoring, and performance monitoring and modeling.
- Contracts have been procured and issued in accordance with the District's Procurement Procedures for full design and construction using both progressive design-build and design-bid-build delivery models.

Construction Cost Budgeting

Construction costs have been budgeted primarily based on actual professional services and construction contracts (the SWIP Well Equipping contract is expected to go to bid in summer 2022). In 2020–2021, there have been impacts related to supply-chain, market volatility in material prices, and skilled labor shortages due to the pandemic and other natural disasters. These types of COVID-19 impacts are also being realized in other parts of California for construction projects, whether they are residential, commercial, or municipality projects. The construction costs also reflect market commodity pricing on materials such as steel, PVC, copper, brass, and lumber that have had unprecedented surges in cost escalations as well as increased diesel costs and reduced/limited transportation options which have impacted shipping and material deliveries. The detailed cost estimates and project budget are included below, which includes planning, design and construction for the tertiary treatment at SC WWTF, purification at Chanticleer, conveyance infrastructure, and the SWIP/Injection wells and monitoring wells. Note that the USBR is completing the NEPA documentation which will be funded through prior grant award and is expected to be completed by September 2022.

Table 7-5: Detailed Project Budget by Component through September 30, 2025	
Budget by Component	
Purified Water Produced	1,500 AFY
Title 22 Recycled Water Produced	340 AFY
Treatment Construction Cost Estimate	**$ 87,210,000**
Santa Cruz WWTF	$ 25,290,000
AWPF at Chanticleer	$ 61,920,000
Conveyance Construction Cost Estimate	**$ 33,660,000**
SC WWTF to Chanticleer - 16 "	$ 10,890,000
Chanticleer to SC WWTF Outfall - 16"	$ 10,890,000
Purified Water Chanticleer to Wells - 14"	$ 11,880,000
SWIP Wells Construction Cost Estimate	**$ 7,240,000**
SWIP Wells Drilling	$ 2,220,000
SWIP Wells Equipping	$ 3,840,000
Monitoring Wells	$ 1,180,000
Other Construction Support (7.6%)	**$ 9,010,000**
Total Estimated Construction Cost	**$ 137,120,000**

Table 7-6 Detailed Project Budget through September 30, 2025		
Budget Item Description	**Status**	**TOTAL COST**
Salaries and Wages	**Not Included**	
Fringe Benefits	**Not Included**	
Travel	**Not Included**	
Equipment	**Included in Contractual/Construction Costs**	
Contractual/Construction		
Planning and Design		
Planning	Contracted	$3,160,000
Program Management	Contracted	$5,430,000
Environmental	Contracted	$1,460,000
Admin, Legal and Contract Support	Contracted	$890,000
Treatment Design and Value Engineering	Contracted	$8,710,000
Operational Considerations and Cost Validation	Contracted	$540,000
Conveyance Design	Contracted	$5,060,000
SWIP Wells Design	Contracted	$730,000
Land Acquisition	Contracted	$5,240,000
Outreach	Contracted	$230,000
Hydrology / Monitoring and Performance Support	Contracted	$710,000

Other Planning and Design Contracts (planning/design permits, surveying, lab costs, financing)	Contracted	$50,000
Planning and Design Cost Estimate Total		**$ 32,210,000**
Construction		
Treatment Facilities Construction	Contracted	$87,210,000
Conveyance Construction	Contracted	$33,660,000
SWIP Wells Drilling	Contracted	$ 2,220,000
SWIP Wells Equipping	To be Contracted	$ 3,840,000
Monitoring Wells Drilling	Contracted	$1,180,000
Environmental Monitoring during Construction	Contracted	$1,320,000
Owners Advisory During Construction	Contracted	$3,690,000
Other Construction Support Services (Labor Compliance, Construction Permits, Lab Analysis, Special Inspections, Start-up, Landscaping, Construction Trailer, etc.)	3% (Contracted and To Be Contracted)	$ 4,000,000
Construction Cost Estimate Total		**$ 137,120,000**
Total Estimated Cost		**$169,330,000**

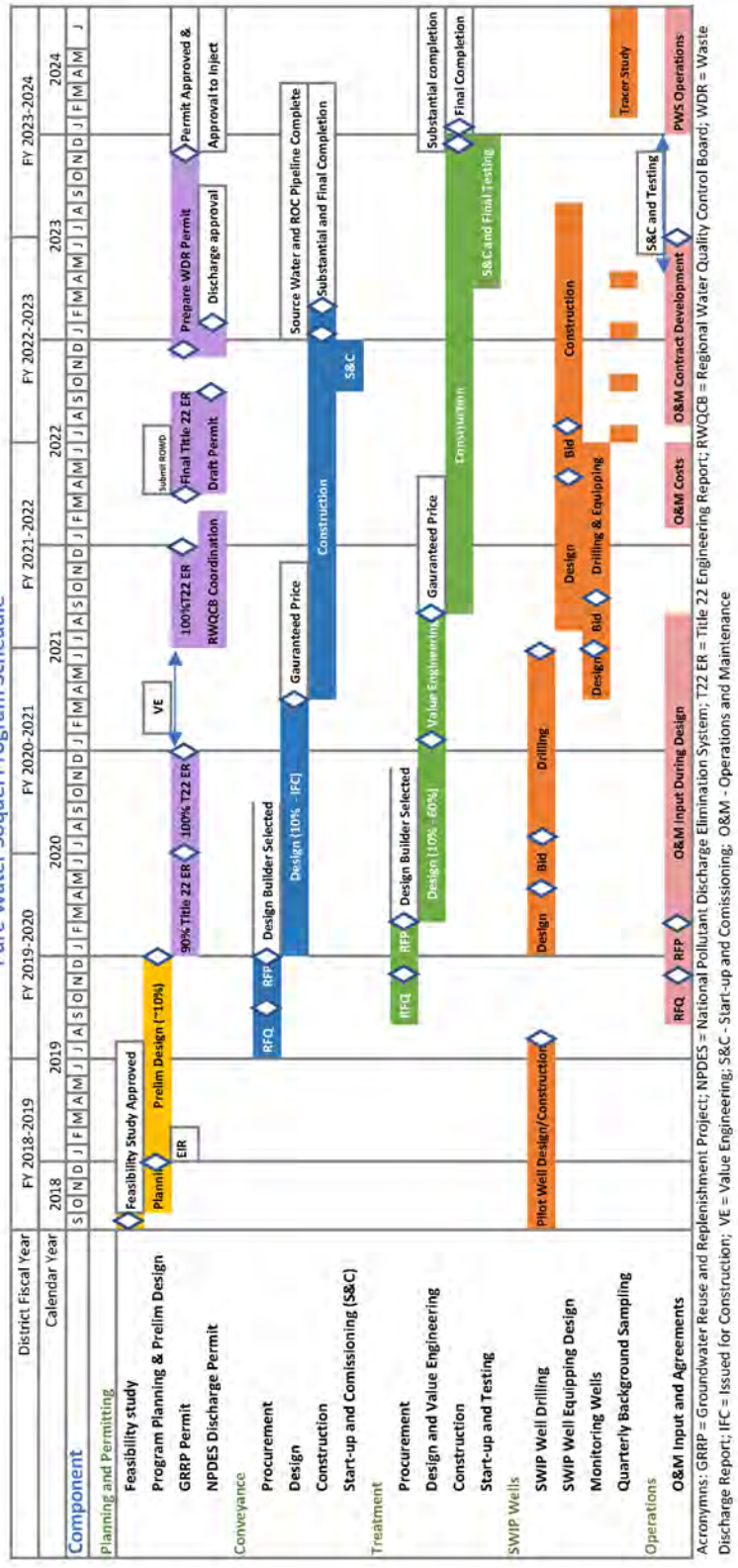
8 STATEMENTS AND LETTERS OF SUPPORT

Statements of Support for Pure Water Soquel and the District's Community Water Plan and Letters of Support for Grant Funding have been received by public members who represent community citizens, local groups/organizations, and elected or appointment officials. (Submitted separately as an Attachment, **Appendix A,** via grants.gov.)

Letters and Statements of Support

1. US Senator Diane Feinstein
2. Congressman Jimmy Panetta
3. United States Department of the Interior, US Fish and Wildlife Service
4. California State Senator, John Laird
5. California State Assemblyman, Mark Stone
6. Santa Cruz County Supervisor Zach Friend
7. Santa Cruz County Supervisor Manu Koenig
8. City of Capitola Mayor Sam Storey
9. Santa Cruz Mid-County Groundwater Agency
10. Santa Cruz County Environmental Health Division, Water Resources
11. Santa Cruz County Department of Public Works
12. City of Santa Cruz Departments of Public Works and Water
13. Pajaro Valley Water Management Agency
14. Santa Cruz County Business Council
15. Save our Shores
16. Coastal Watershed Council
17. Resource Conservation District of Santa Cruz County
18. Capitola Soquel Chamber of Commerce
19. Santa Cruz County Chamber of Commerce
20. Aptos Chamber of Commerce

9 PROJECT SCHEDULE



10 OFFICIAL RESOLUTION

Soquel Creek Water District's Official Resolution (22-02) has been submitted as an attachment **(Appendix B**) via grants.gov.

11 CONFLICT OF INTEREST DISCLOSURE

Soquel Creek Water District has no actual or potential conflict of interest at the time of submission.

12 SINGLE AUDIT REPORTING STATEMENT

The single audit for fiscal year ending June 30, 2021 for Soquel Creek Water District, [redacted], was accepted by the Federal Audit Clearinghouse on February 18, 2022.

13 FUNDING- LETTERS OF COMMITMENT

Letters of Commitment have been submitted as an attachment (**Appendix C)** via grants.gov.

14 UNIQUE ENTITY IDENTIFIER AND SYSTEM FOR AWARD MANAGEMENT

Soquel Creek Water District DUNs Number: [redacted]

15 MANDATORY FEDERAL FORMS

The four mandatory Federal forms have been submitted separately via grants.gov.:

1. Application for Federal Assistance (SF-424) - webform
2. Budget Information (SF-424C) – as an attachment
3. Assurances (SF-424D) - webform
4. Disclosure of Lobbying Activities (SF-LLL) - webform

Pure Water Soquel: Groundwater Replenishment and Seawater Intrusion Prevention Project

Appendix B

Official Resolution

PUREWater Soquel

DocuSign Envelope ID: 24FE96A1-0092-4F8E-ABF9-11FF74095952

RESOLUTION NO. 22-02

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SOQUEL CREEK WATER DISTRICT

AUTHORIZING AND DIRECTING THE GENERAL MANAGER TO SUBMIT AN APPLICATION TO THE U.S. BUREAU OF RECLAMATION WATERSMART TITLE XVI WATER RECLAMATION AND REUSE PROJECTS PROGRAM FOR PURE WATER SOQUEL: A GROUNDWATER REPLENISHMENT AND SEAWATER INTRUSION PREVENTION PROJECT

WHEREAS, the Soquel Creek Water District ("District") desires to seek federal assistance to assist with funding the Pure Water Soquel Project (the "Project"); and

WHEREAS, the U.S. Bureau of Reclamation is currently accepting grant applications for planning, design, and/or construction of eligible water reclamation and reuse projects under its Fiscal Year 2022 round of the Title XVI Water Reclamation and Reuse Program; and

WHEREAS, the Project has been deemed eligible for the Title XVI program by the U.S. Bureau of Reclamation under section 4009(c) of the Water Infrastructure Improvements for the Nation Act (WIIN Act); and

WHEREAS, the District has the financial capability to provide required matching funds and/or in-kind contributions specified in the funding plan that will become part of the grant application.

NOW, THEREFORE, BE IT RESOLVED, by the Board of Directors of the Soquel Creek Water District, as follows:

1. That the Board supports and authorizes the General Manager, or his designee, to review and submit a grant application for the Project on behalf of the Soquel Creek Water District to the U.S. Bureau of Reclamation.

2. That in the event such grant funding is awarded for the Project, the General Manager, or designee, is hereby authorized and directed to work with the U.S. Bureau of Reclamation to meet established deadlines and enter into a cooperative agreement.

PASSED AND ADOPTED, by the Board of Directors of the Soquel Creek Water District this 15th day of February 2022 by the following vote:

AYES: Directors LaHue, Christensen, Daniels, Jaffe and Lather

NOES: None

ABSENT: None

ABSTAIN: None

APPROVED:

TR LaHue

Dr. Tom LaHue, President

ATTEST:

Emma Olin

Emma Olin, Board Clerk

Pure Water Soquel: Groundwater Replenishment and Seawater Intrusion Prevention Project

Appendix c

Funding-Letters of Commitment

PUREWater Soquel

capitola soquel
CHAMBER of COMMERCE

1855 41st Avenue #J6
Capitola CA 95010
831.475.6522

January 27, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. The basin is also relied upon by municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall

2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

Carrie Arnone

Carrie Arnone, CEO
Capitola-Soquel Chamber of Commerce

420 Capitola Avenue
Capitola, California 95010
Telephone: (831) 475-7300
FAX: (831) 479-8879
Website: www.cityofcapitola.org

February 25, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically over-drafted and suffering seawater intrusion at the coastline. The basin is also relied upon by municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

Sam Storey, Mayor, City of Capitola

CITY OF SANTA CRUZ

WATER DEPARTMENT

212 Locust Street, Suite A, Santa Cruz, CA 95060 • 831-420-5200 • www.cityofsantacruz.com

March 11, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

The City of Santa Cruz is pleased to provide this letter of support for the Soquel Creek Water District's (District) Pure Water Soquel Project (Project) and its application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program.

The Project is consistent with the priorities of the Bureau, the City of Santa Cruz and regional water providers and water managers in Santa Cruz County: assuring a sustainable, reliable source of water for the region and providing beneficial reuse of wastewater and other environmental benefits.

The Santa Cruz Mid-County Groundwater Basin (Basin), which has been designated by the California Department of Water Resources as critically over-drafted, is an important groundwater source for the City of Santa Cruz and the City shares with the Soquel Creek Water District and a number of small systems and domestic users a strong commitment to sustainable management of the Basin. Historical overdraft resulted in seawater intrusion which impacts water quality, threatens long-term water supply reliability, strands existing infrastructure, and has adverse impacts to groundwater dependent ecosystems and special-status species.

The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation provides for up to 3,000 afy, and current design and construction of the project is sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built; construction of the nine supporting monitoring wells began in fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; and the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project for our Basin. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for recognizing the importance of this Project in considering the District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

Rosemary Menard
Water Director

Mark Dettle
Public Works Director

Pure Water Soquel: Groundwater Replenishment and Seawater Intrusion Prevention Project

Appendix A

Statements and Letters of Support

PUREWater Soquel

COASTAL WATERSHED COUNCIL

COASTAL-WATERSHED.ORG

Preserving and protecting our coastal watersheds

February 23, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. The District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion. The basin is also relied upon by municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all these users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region. Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

Greg Pepping
Executive Director

U.S. SENATOR DIANNE FEINSTEIN
CALIFORNIA

COMMITTEE ON THE JUDICIARY
- CHAIR, HUMAN RIGHTS AND THE LAW
SELECT COMMITTEE ON INTELLIGENCE
COMMITTEE ON APPROPRIATIONS
- CHAIR, ENERGY AND WATER SUBCOMMITTEE
COMMITTEE ON RULES AND ADMINISTRATION

United States Senate

March 11, 2022

Ms. Amanda Erath
Bureau of Reclamation
Water Resources and Planning Office
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I write in support of the application by the Soquel Creek Water District to the Bureau of Reclamation Title XVI Water Reclamation and Reuse Program. The funds would be used toward construction of the Pure Water Soquel Project, a critical water recycling project in Santa Cruz County.

The District is entirely reliant on groundwater wells to serve its 40,000 customers in Santa Cruz County, and technical studies conducted by the District have concluded that coastal seawater contamination is progressing much faster than previously expected. This is an urgent situation, as once the seawater has reached the wells, the District will have no choice but to shut them down

With the assistance of Title XVI funding from FY 2019-2021, an EPA WIFIA loan, funding from the California State Water Resources Board, and District ratepayers, the District has continued an aggressive schedule for completion of the project. This includes construction that is underway on eight miles of conveyance pipeline, three seawater intrusion wells, and a treatment facility.

I urge you to give the Soquel Creek Water District's application your full consideration. If you have any questions, please do not hesitate to contact my San Francisco office at (415) 393-0707.

Sincerely,

Dianne Feinstein
United States Senator

DF/zv

WASHINGTON, DC 20510-0504
http://feinstein.senate.gov

County of Santa Cruz

BOARD OF SUPERVISORS

701 OCEAN STREET, SUITE 500, SANTA CRUZ, CA 95060-4069
(831) 454-2200 • FAX: (831) 454-3262 TDD/TTY - Call 711

MANU KOENIG	ZACH FRIEND	RYAN COONERTY	GREG CAPUT	BRUCE MCPHERSON
FIRST DISTRICT	SECOND DISTRICT	THIRD DISTRICT	FOURTH DISTRICT	FIFTH DISTRICT

February 28, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. The basin is also relied upon by municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

ZACH FRIEND, Supervisor
Second District

ZF: cs

CAPITOL OFFICE
1021 O STREET, SUITE 8720
SACRAMENTO, CA 95814
TEL (916) 651-4017
FAX (916) 651-4917

MONTEREY DISTRICT OFFICE
99 PACIFIC STREET, SUITE 575-F
MONTEREY, CA 93940
TEL (831) 657-6315
FAX (831) 657-6320

SAN LUIS OBISPO DISTRICT OFFICE
1026 PALM STREET, SUITE 201
SAN LUIS OBISPO, CA 93401
TEL (805) 549-3784
FAX (805) 549-3779

SANTA CRUZ DISTRICT OFFICE
701 OCEAN STREET, SUITE 318A
SANTA CRUZ, CA 95060
TEL (831) 425-0401
FAX (831) 425-5124

SANTA CLARA COUNTY SATELLITE OFFICE
TEL (408) 847-6101

California State Senate

SENATOR
JOHN LAIRD
SEVENTEENTH SENATE DISTRICT

COMMITTEES
BUDGET SUBCOMMITTEE #1 (EDUCATION)
CHAIR
JOINT LEGISLATIVE AUDIT
VICE CHAIR
APPROPRIATIONS
BUDGET & FISCAL REVIEW
JOINT LEGISLATIVE COMMITTEE ON BUDGET
JUDICIARY
LABOR, PUBLIC EMPLOYMENT & RETIREMENT
NATURAL RESOURCES & WATER
RULES
JOINT LEGISLATIVE COMMITTEE ON RULES

U.S. Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

RE: Letter of Support for Soquel Creek Water District's Title XVI: Pure Water Soquel Project

Dear Ms. Erath,

I am enthusiastically writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. Among other environmental benefits, this project provides beneficial reuse of wastewater. Pure Water Soquel is vital to the region and is consistent with the priorities of the Bureau in assuring a sustainable, reliable source of water for the region while enjoying widespread support at the community, state, and federal levels. My collective experience as a former State Assembly Member and as the Secretary of the Natural Resources Agency under Governor Brown's Administration has given me a long history of work toward such comprehensive, safe, and environmentally sustainable projects.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically over-drafted and suffering from seawater intrusion at the coastline. Municipal water purveyors, small mutual well owners, and over a thousand private well pumpers also rely on the basin, as another reflection of its immense importance. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

In order to fulfill the goals of meeting the California state mandate of groundwater sustainability by 2040, providing resiliency during droughts, and protecting fish and endangered

species, the Soquel Creek Water District has developed and started construction of Pure Water Soquel. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. Pure Water Soquel provides a beneficial reuse of recycled wastewater, as opposed to being disposed of in the Monterey Bay National Marine Sanctuary.

Beyond being "shovel-ready," construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021 where I spoke at the groundbreaking event. It was there that stakeholders at the local, state, and federal level came together to show support for this crucial, cutting-edge project that creates an innovative way to get water to our communities. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel will aid in replenishing the groundwater basin, will provide a barrier against seawater contamination, and will provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region. Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

John Laird, California State Senator District 17

County of Santa Cruz

BOARD OF SUPERVISORS

701 OCEAN STREET, SUITE 500, SANTA CRUZ, CA 95060-4069
(831) 454-2200 • FAX: (831) 454-3262 TDD/TTY - Call 711

MANU KOENIG	ZACH FRIEND	RYAN COONERTY	GREG CAPUT	BRUCE MCPHERSON
FIRST DISTRICT	SECOND DISTRICT	THIRD DISTRICT	FOURTH DISTRICT	FIFTH DISTRICT

January 31, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. The basin is also relied upon by municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination.

All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

MANU KOENIG, Supervisor
First District

MK:cs

COMMITTEES
BANKING AND FINANCE
BUDGET
BUDGET SUBCOMMITTEE NO. 5 ON PUBLIC SAFETY
HUMAN SERVICES
NATURAL RESOURCES

SELECT COMMITTEES
CHAIR, COASTAL PROTECTION AND ACCESS TO NATURAL RESOURCES
VICE CHAIR, JOINT COMMITTEE ON FISHERIES AND AQUACULTURE

Assembly
California Legislature

MARK STONE
CHAIR, JUDICIARY COMMITTEE
ASSEMBLYMEMBER, TWENTY-NINTH DISTRICT

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0029
(916) 319-2029
FAX (916) 319-2129

DISTRICT OFFICES
701 OCEAN STREET, ROOM 318B
SANTA CRUZ, CA 95060
(831) 425-1503
FAX (813) 425-2570

99 PACIFIC STREET, SUITE 575G
MONTEREY, CA 93940
(831) 649-2832
FAX (831) 649-2935

February 25, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Re: Soquel Creek Water District's Pure Water Soquel Project

Dear Ms. Erath:

I am writing to express my continuing support for Soquel Creek Water District's (District) Pure Water Soquel Project (Project) and its grant application to the US Bureau of Reclamation (Bureau) Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau by assuring a sustainable and reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the local, state, and federal level.

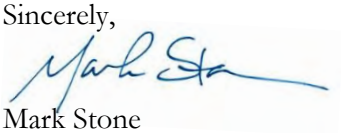
The Project has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. Impacts of climate change are a continual threat to the reliability of this water source for the municipal water purveyors, small mutual well owners, and over a thousand private well pumpers that depend upon it.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of potable water. The Project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

The Pure Water Soquel Project is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater intrusion, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for your consideration of this worthy proposal. If you have any questions, please feel free to contact me at (831) 425-1503.

Sincerely,



Mark Stone
Assemblymember
29th District

DocuSign Envelope ID: 91DE3A6D-694F-4DDB-A00A-7E9C47A832A6

SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY

Groundwater is a vital resource, together let's protect it.

midcountygroundwater.org • 5180 Soquel Drive • Soquel, CA 95073

February 18, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

The Santa Cruz Mid-County Groundwater Agency (MGA) is pleased to provide this letter of support for the Soquel Creek Water District's (District) Pure Water Soquel Project (Project) and its application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. The Project is consistent with the priorities of the Bureau and the MGA: assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and developing widespread support at the community, state, and federal levels.

The California Department of Water Resources (DWR) designated the Santa Cruz Mid-County Groundwater Basin (Basin) as critically overdrafted. Historical overdraft resulted in seawater intrusion which impacts water quality, threatens long-term water supply reliability, strands existing infrastructure, and has adverse impacts to groundwater dependent ecosystems and special-status species.

The MGA is a Groundwater Sustainability Agency (GSA) under California's Sustainable Groundwater Act. The MGA was among the first GSAs to have its Groundwater Sustainability Plan (GSP) approved by DWR. The GSP identifies specific projects and management actions to achieve sustainably in our coastal Basin by 2040, and is now being implemented by the MGA.

The District, one of the four Member Agencies of the MGA, relies entirely on groundwater from Basin. As a result, a key project identified in the GSP for achieving sustainability in out Basin is District's Pure Water Soquel Project.

The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

DocuSign Envelope ID: 91DE3A6D-694F-4DDB-A00A-7E9C47A832A6

SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY

Groundwater is a vital resource, together let's protect it.

midcountygroundwater.org • 5180 Soquel Drive • Soquel, CA 95073

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built; construction of the nine supporting monitoring wells began in fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; and the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project for our Basin. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for recognizing the importance of this Project in considering the District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

DocuSigned by:
9FBAFB716E6341D...
Thomas R. LaHue
MGA Board Chair

DocuSigned by:
E248AE283354409...
David Baskin
MGA Vice Chair

JIMMY PANETTA
20TH DISTRICT, CALIFORNIA

CHIEF DEPUTY WHIP

COMMITTEE ON
WAYS AND MEANS

COMMITTEE ON
AGRICULTURE

COMMITTEE ON
ARMED SERVICES

Congress of the United States
House of Representatives
Washington, DC 20515–0520

406 CANNON HOUSE OFFICE
BUILDING
WASHINGTON, DC 20515
(202) 225–2861

142 WEST ALISAL
ROOM E116
SALINAS, CA 93901
(831) 424–2229

701 OCEAN STREET
ROOM 318
SANTA CRUZ, CA 95060
(831) 429–1976

February 8, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I write in strong support of the application by the Soquel Creek Water District to the Bureau of Reclamation Title XVI Water Reclamation and Reuse Program. The funds would be used toward construction of the Pure Water Soquel Project, a critical water recycling project in my district.

The urgency of this project cannot be overstated, as the Soquel Creek Water District is entirely reliant on groundwater to serve its 40,000 customers in Santa Cruz County. Technical studies conducted by the District concluded that coastal seawater is threatening to contaminate those wells much faster than had originally been envisioned. Once the seawater contaminates these wells, the water district will have no choice but to shut them down with no reliable alternative. Keeping this project on schedule is essential to the livelihoods of everyone who relies on this critical water source.

With the assistance of Title XVI funding from FY 2019-2021, an EPA WIFIA loan, funding from the California State Water Resources Board, and District ratepayers, the District maintains an aggressive schedule for completing the project. This includes construction that is underway on eight miles of conveyance pipeline, three seawater intrusion wells, and a treatment facility.

I was pleased to support additional funding for the Title XVI program in the Bipartisan Infrastructure Law and believe that the Pure Water Soquel Project is an excellent candidate to receive its full request of $21 million. With this additional Title XVI funding, the Project can maintain its current construction timeline and protect the essential water supply in this region.

Thank you for your consideration of this request. Please let me know if you have any further questions regarding the Pure Water Soquel Project or if my office can be of assistance.

Sincerely,

Jimmy Panetta
Member of Congress

PAJARO VALLEY WATER MANAGEMENT AGENCY

36 BRENNAN STREET • WATSONVILLE, CA 95076
TEL: (831) 722-9292 FAX: (831) 722-3139
info@pvwater.org • pvwater.org

February 23, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I'm writing to express PV Water's continued support for Soquel Creek Water District's (District) Pure Water Soquel Project (Project), and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. The Project will provide a sustainable source of water for the District through the beneficial use of wastewater that will help to replenish a critically overdrafted basin at risk from seawater intrusion.

The District is located within the Santa Cruz Mid-County Groundwater Basin (Basin) and is 100% dependent on groundwater to meet existing water needs. The California Department of Water Resources has designated the Basin as critically overdrafted. In addition, the Basin is at risk of seawater intrusion in the near term, with climate change adding pressure over the long term. Municipal water purveyors, small water systems, and over a thousand private well owners rely on the critically overdrafted Basin's groundwater resources, which are hydrologically connected to the critically overdrafted Pajaro Valley Groundwater Basin.

The District developed the Project in part to meet California's Sustainable Groundwater Management Act mandate to achieve sustainable groundwater resources by 2040. The Project will treat recycled, municipal, wastewater through an advanced purification process to produce 1,500 acre-feet per year (AFY) of purified water, with the ability to treat 3,000 AFY in the future. The purified water will be used to recharge the groundwater basin which has been modeled to raise water levels and help prevent seawater intrusion. The Project reduces the volume of secondary treated wastewater being discharged to the Monterey Bay National Marine Sanctuary. Construction of Pure Water Soquel is underway.

Pure Water Soquel is a critical Project for the District. It will aid in replenishing a Basin that is hydrologically connected to the critically overdrafted Pajaro Valley Groundwater Basin that PV Water manages. Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

Brian Lockwood, PG, CHg
General Manager

County of Santa Cruz

DEPARTMENT OF PUBLIC WORKS

701 OCEAN STREET, ROOM 410, SANTA CRUZ, CA 95060-4070
(831) 454-2160 FAX (831) 454-2385 TDD (831) 454-2123

MATT MACHADO
DEPUTY CAO
DIRECTOR OF PUBLIC WORKS

January 28, 2022

BUREAU OF RECLAMATION
Water Resources and Planning Office
Attn: Amanda Erath, Title XVI Coordinator
Denver Federal Center Building 67 (84-51000)
P.O. Box 25007, MS 86-69200
Denver, CO 80225

SUBJECT: SUPPORT FOR SOQUEL CREEK WATER DISTRICT'S PURE WATER SOQUEL PROJECT

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. The basin is also relied upon by municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Yours truly,

MATT MACHADO
Deputy CAO
Director of Public Works

MM:dm

Attachments

cc: Ron Duncan – General Manager, Soquel Creek Water District

County of Santa Cruz Health Services Agency
Environmental Health Division
701 Ocean Street, Room 312 ❖ Santa Cruz, CA 95060
(831) 454-2022 ❖ Fax (831) 454-3128
https://www.scceh.org/

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

January 27, 2022

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. The basin is also relied upon by municipal water purveyors, small water systems, and over a thousand private wells. Impacts of climate change are a continual threat to the reliability of this water source, for users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region. Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

Sierra Ryan
Water Resources Manager, County of Santa Cruz
Sierra.Ryan@santacruzcounty.us

Santa Cruz County
CHAMBER OF COMMERCE
Creating a vibrant community since 1889

January 28, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath:

I'm writing on behalf of the Santa Cruz County Chamber of Commerce to express our continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

For the record, the Santa Cruz County Chamber was created in 1889 to represent the voice of the Santa Cruz County business community. Going on our 133 year, the Chamber is dedicated to help ensure the economic vitality of the region. A clean reliable water source is critical to our county and Pure Water Soquel Project provides the additional water source to support businesses, residents and visitors.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years. You may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. The basin relies on municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is designed as cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region.

Thank you for considering the views of the Santa Cruz County Chamber of Commerce in support of Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,

Casey Beyer
Chief Executive Officer
Santa Cruz County Chamber of Commerce

Santa Cruz County Chamber of Commerce * 3121 Park Avenue, Suite C, Soquel, CA 95073
831-457-3713 Phone
The SCCCoC is a 501c (6) non-profit corporation * Employer ID 94-0841660

March 4, 2022

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in ensuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. The basin is also relied upon by municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

The Project was developed to meet the California state mandate of groundwater sustainability by 2040, provide resiliency during droughts, and protect fish and endangered species by reducing regional reliance on surface water sources. The Project will put recycled municipal wastewater through an advanced purification process to produce 1,500 acre-feet per year (afy) of purified water. The project's full-scale implementation is up to 3,000 afy, and current design and construction of the project is being sized to accommodate this expansion. The purified water will be used to recharge the groundwater basin, raise water levels, and prevent further seawater contamination. All of this will be accomplished through the beneficial reuse of recycled wastewater that would otherwise be disposed of in the Monterey Bay National Marine Sanctuary.

Construction of Pure Water Soquel is already underway. All three seawater intrusion prevention (injection) wells have been built, construction of the nine supporting monitoring wells began in Fall 2021; construction on the eight miles of conveyance pipeline began in spring 2021; the advanced water purification facility began construction in late 2021. Project development and construction are estimated to support over $900 million dollars in economic benefits to the local community.

Pure Water Soquel is a crucial, cutting-edge project. It will aid in replenishing the groundwater basin, provide a barrier against seawater contamination, and provide a safe, high-quality, reliable, drought-proof, and sustainable water supply to support current and future generations in the Mid-Santa Cruz County region. Thank you for considering the Soquel Creek Water District's request for Bureau of Reclamation Water Smart Program Title XVI WIIN grant funds.

Sincerely,
Emily Ham
Executive Director, Santa Cruz County Business Council

Save Our Shores
345 Lake Avenue, Suite A
Santa Cruz, CA 95062-4600
(831) 462-5660

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Amanda Erath, Title XVI Program Coordinator
P.O. Box 25007, MS 86-69200
Denver, CO 80225

February 1, 2022

Dear Ms. Erath,

I'm writing to express my continuing support for Soquel Creek Water District's Pure Water Soquel Project, and its current application for a grant through the US Bureau of Reclamation Water Smart: Title XVI WIIN Water Reclamation and Reuse Program. This Project is consistent with the priorities of the Bureau, in assuring a sustainable, reliable source of water for the region, providing beneficial reuse of wastewater and other environmental benefits, and having widespread support at the community, state, and federal levels.

Pure Water Soquel has received Title XVI grants from the Bureau in previous years – for which the affected communities and stakeholders are sincerely grateful. As you may recall from those previous grant applications, the District receives no imported water, relying 100% on groundwater from the Mid-County Groundwater Basin, which is critically overdrafted and suffering seawater intrusion at the coastline. The basin is also relied upon by municipal water purveyors, small mutual well owners, and over a thousand private well pumpers. Impacts of climate change are a continual threat to the reliability of this water source, for all of these users.

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Sincerely,
Erica Donnelly-Greenan, M.Sc.,

Save Our Shores Executive Director