Notice of Funding Opportunity No. R25AS00013

WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2025

Smillie Well Replacement and ASR Upgrades

Applicant: Robert McDonald, General Manager,
Carpinteria Valley Water District
1301 Santa Ynez Ave.
Carpinteria, CA 93013

Program Lead/ Manager: Brian Kind, District Engineer,
brian@cvwd.net
805-755-4081
Carpinteria Valley Water District
1301 Santa Ynez Ave.
Carpinteria, CA 93013

Technical Proposal

Executive Summary

Date: October 7th, 2024

Applicant: Carpinteria Valley Water District: 1301 Santa Ynez Ave. Carpinteria, CA 93013

Unique Entity Identifier: FN5XR3XRXCK8

Project Name: Smillie Well Replacement and ASR Upgrades (the Project)

Applicant Category / Eligibility: Category A; The applicant, Carpinteria Valley Water District, is a water district location in California (Category A applicant).

Task Area: Task B; The proposed Project is to replace Smillie Well #1 with a reliable well that is both Aquifer Storage and Recovery (ASR)-capable and permitted for ASR operations under the Regional Water Quality Control Boards General ASR discharge permit.

Funding Group: Funding group II up to $3,000,000 for a project completed within 3 years

The Carpinteria Valley Water District (District) is requesting $2,899,127 in federal funds for construction of an ASR well in place of the District's existing Smillie Well #1. The District expects startup of the ASR well by May 2027, 20 months from the time the District would enter into a financial agreement for these grant funds.

Project Summary

Carpinteria Valley Water District (District) is proposing to construct an upgraded ASR compatible well to replace the failing Smillie Well #1 located at the intersection of Lillingston Canyon Road and Casitas Pass Road. The proposed Project will include:

- Demolition of Smillie Well #1 site
- Conversion of Smillie Well #1 to a monitoring well.
- Construction of an ASR-capable replacement well (Smillie Well #2)
- Permitting of the new well for ASR operations
- Development of the site to equip the facility for well extraction and injection

ASR wells provide the District with the option to store water in the Carpinteria Groundwater Basin (Basin) during wet periods for use in dry periods. With a well injection potential of up to 500 AFY, this will build long-term resilience to drought. Also, the Project will increase the District's reliable number of production wells from two to three and provide much-needed production capacity. While the Smillie Well #1 can only produce 240 AFY, the new well is expected to produce up to 1,000 AFY (900 GPM). This would increase the District's monthly well production capacity by 27%. This enables the District to meet customer demand during a Stage 2 drought solely from groundwater, if necessary.

The Basin was designated by California Department of Water Resources (DWR) as a high-priority basin under the Sustainable Groundwater Management Act (SGMA) in 2019. The Basin Groundwater Sustainability Plan (GSP), completed in 2023, and identified

groundwater overdraft during extended droughts as the primary risk for the Basin (GSI, 2023). The GSP identified several projects and management actions to address the issue, including implementation of ASR wells to store water during wet years for use during dry years and pumping redistribution to reduce the risk of seawater intrusion. The Project would provide a means to recharge the groundwater basin more quickly than other methods.

Redistribution of pumping away from the coast was also identified in the GSP (Section 6.10) so that water levels remain stable at the coast and reduce the movement of seawater into the basin. The Smillie Well is currently the municipal well furthest from the coast. Increasing Smillie Well's production capacity will allow less pumping at HQ Well, the well closest to the coast. The GSP was prepared by the Basin Groundwater Sustainability Agency (GSA), which is comprised of four public agencies and led by the District.

The District completed a Smillie Well #2 Basis of Design TM (Attachment D) (Pueblo, 2022), 95% well design specifications and bid documents, and an 95% ASR pilot test work plan. It is currently developing environmental documents and preliminary site design documents. If selected for funding, the District will complete final design and initiate construction of the new Smillie Well in early 2026.

Project Length & Dates: Assuming funding is awarded on September 1, 2025, the Project will be complete by May 2027. Initial planning work started in 2022 and grant-eligible work began in August 2024. A schedule is provided in Section E.1.4 and Attachment A.

Federal Lands: The Project is not located on federal lands or at a federal facility.

Applicant Background: The District is a County Water District, as defined under Water Code Section 30000, providing potable water to municipal and agricultural customers. It does not provide wastewater or stormwater services. It is located on the coast of California 80 miles north of Los Angeles and 12 miles southeast of Santa Barbara. Its service area encompasses 11,098 acres extending along the southern Santa Barbara County coast. Water service is provided to 4,531 service connections and a population of 15,966.

Agricultural customers manage approximately 3,105 acres of irrigated crops, including fruits and nuts, pasture, grains, berries, and vineyards. Of this, approximately 1,987 acres are avocados. Agricultural activities also include covered nurseries that produce crops such as cut flowers, lettuce, orchids, and other nursery products. Micro-sprinklers are the most common method of outdoor crop irrigation and hydroponics is the most common greenhouse irrigation (Woodard & Curran, 2021).

Available Water Supply by Year

Surface water supplies shown in the table below represent annual allocations and available carryover water from the District's two surface water supplies: the Federal Cachuma Project and the California State Water Project (SWP). Groundwater supplies represent the District's portion of the Basin's historical, long-term sustainable yield.

Water Supply by Year

Year	Surface Water Total (AF)*	Agency Groundwater (AF)**	Recycled M&I Water (AF)	Other (AF)	Total (AF)
2014	2,490	1,200	0	0	3,690
2015	2,342	1,200	0	0	3,542
2016	500	1,200	0	0	1,700
2017	3,800	1,200	0	0	5,000
2018	1,997	1,200	0	0	3,197
2019	4,127	1,200	0	0	5,327
2020	4,270	1,200	0	0	5,470
2021	4,430	1,200	0	0	5,630
2022	2,313	1,200	0	0	3,513
2023	6,080	1,200	0	0	7,280
Total Average Annual Water Supply for 2014 - 2023 in AFY =					44,349
Average Annual Water Supply = 4,435 acre-feet * Includes Cachuma Project and SWP allocations and Cachuma Project carry over water. **As calculated in GSP average available groundwater supply for the District.					

Project Location

As show in the figure below, the Smillie Well is located in Carpinteria, CA within Santa Barbara County and is roughly two miles from the Pacific Ocean and north of downtown Carpinteria. The Project latitude is 34°24'18.8"N and longitude is 119°31'39.7"W.

Project Description

The original Smillie Well was constructed in 1975 using a hybrid design of stainless steel and carbon steel casing. Because of design deficiencies and issues related to construction and development of the well, the well has had production issues since the time of its construction. The well has recently begun to produce unacceptable amounts of sand and is now showing signs that it is near the end of its service life. The District's goal is to replace the existing, failing Smillie Well (#1) with an ASR-capable well that could produce up to 1000AFY and inject up to 500AFY. The Smillie Well site is in the unconfined area of the Basin; due to this, the injection of water at Smillie Well is not expected to interfere with injection activities in the confined area of the basin.

The District has three producing municipal groundwater wells: the Headquarters (HQ) well, El Carro well, and Smillie Well. The HQ well was replaced in 2002, and the El Carro well was replaced in 2012 after the well failed due to corrosion. The replacement wells were designed to be ASR-capable and were constructed with stainless-steel casings and continuous wire-wrapped screens. These design elements have proven to be superior to the original well construction of mild steel full flow louvers in terms of capacity, versatility, and longevity. The stainless-steel design of the pump has also proven durable against the corrosivity of local groundwater. Testing at these wells has demonstrated that water can be stored (injected) as well as extracted in the confined areas of the groundwater basin where Headquarters and El Carro wells are located.

The proposed Project will include decommission and conversion of the existing well to a monitoring well, site prep for the replacement well, well drilling and development, electrical equipment, pumping equipment, piping, valving, meters, controls, water treatment and other improvements. The District has completed a basis of design for the replacement well and begun work on the site design and environmental documentation.

Basis of Design

Based on information acquired through the drilling and historical operation of Smillie Well #1, objectives for the replacement well, and considerations of site conditions and construction logistics, the District has developed the Smillie Well #2 Basis of Design TM (Attachment D) (Pueblo, 2022).

Conductor Casing. A surface conductor casing will stabilize near surface materials and facilitate proper circulation of drilling mud and cuttings to the fluid circulation system. The casing will be a 28-inch diameter, mild steel casing with a wall thickness of one-quarter inch set to a depth of fifty feet.

Drilling Method. The well should be drilled using the reverse-rotary method with a polymeric or bentonite-based fluid system. The specifications will include stringent requirements for the maintenance of mud properties established to maintain a clean, sand-free fluid, minimize aquifer/formation damage, facilitate effective wall cake removal and well development, and maximize well performance and well efficiency.

Well Depth and Well Screen Placement. Smillie Well #1 is completed to a depth of 824 feet with screen placement between the depths of 455 feet and 800 feet. Review of the geophysical log for Smillie Well #1 and review of water level data and subsequent well performance test data following the 2015 rehabilitation suggest that the screen zone for Smillie Well #2 be generally the same as that for Smillie Well #1. A screen placement between the depths of 455 feet and 810 feet is recommended. Along with the recommendation for a 10-foot casing cellar, the total depth of the completed well would be 820 feet.

Specific Capacity and Well Production Capacity. Testing of the Smillie Well #1 in 2018 and 2021 yielded specific capacities of 1.9 GPM/ft. The specific capacity for Smillie Well #2 would conservatively be 3 GPM/ft and could realistically be as high as 5 GPM/ft.

Casing Diameter. The pumping capacity for Smillie Well #2 is estimated to be in the range of 402 GPM to 972 GPM. Conservatively, a long-term pumping capacity will likely be in the range of 450 to 800 GPM. Driscoll (Groundwater and Wells, 2nd Edition) recommends that for an anticipated well yield in the 500 GPM to 1,000 GPM range, an optimum casing diameter would be 14 inches with a minimum casing diameter of 12 inches. A 14-inch diameter casing would be the minimum casing diameter recommended for well yields in the range of 800 GPM to 1,800 GPM. Well diameter recommendations are based on the nominal size of pump bowls required to achieve the design flow rates. The District recommends a 14-inch diameter casing for Smillie Well #2. This is sufficiently sized to accommodate the design flow rate and required backflushing flow rates should ASR operations be implemented at the Smillie site.

Borehole Diameter. For purposes of well construction, a minimum 5-inch annulus is required to run temporary construction tremie pipe for effective installation of gravel pack envelope and cement seal materials. A minimum borehole diameter of 24 inches is recommended.

Screen/Gravel Pack Design. The well screen and gravel pack must be designed to minimize entrance and exit velocities at the well screen and gravel pack. The well screen must therefore be designed to maximize the open area. The available type of well screen with the most open area is a continuous slot, wire-wrapped design. This design has over 400 percent more open area than similar diameter-slotted or louvered pipe. For purposes of preliminary design, slot size will be 0.050 inches with an 8 by 16 inch gradation gravel pack. The highest quality silica gravel pack available should be used for Smillie Well #2. The material manufactured by P.W. Gillebrand, or an approved equal, is recommended.

Casing Material Evaluation. The entire casing (blank casing and well screen) of Smillie Well #2 will be constructed with Type 304 stainless steel. This casing and screen provide the best economically-viable resistance to corrosion and, therefore, superior well service life. Recent investigations (Roscoe Moss Company, Technical Memorandum 004-02) indicate that the use of a stainless-steel casing and screen can more than double the service life of a well, thereby dramatically reducing the overall life-cycle costs.

Seal Depth. State of California Water Well Standards (Bulletin 74-81 and supplements) require a minimum annular sanitary seal depth of 50 feet; however, to provide additional protection from surface-derived sources of contamination and to prevent inter-aquifer leakage, the well should be provided with a deep annular cement seal to a depth of 400 feet. This would place the bottom of the seal 55 feet above the top of the perforations.

Casing Wall Thickness. The well casing must be designed to protect against collapse during sealing operations. Unbalanced radial forces occur as a result of differential pressures between the outside and inside of the casing. In these cases, excessive force leads to collapse. Assuming a seal depth of 360 feet, the maximum transient hydrostatic pressure differential will be approximately 156 psi (assuming a specific gravity of the sealing material of 2.0 and the casing maintained full of fluid during cementing). To protect against collapse during sealing operations, the minimum casing wall thickness should be 5/16-inch, which will provide a safety factor of approximately 2.7.

ASR Utilization. The Basis-of-Design for Smillie Well #2 accommodates ASR well operation elements (e.g., the use of all stainless-steel casing and screen to minimize corrosion and plugging and a continuous-slot, wire-wrapped screen to maximize open area for injection). Piping and valving for ASR will be addressed in the Preliminary Site Design documents.

Design Summary

Design Consideration	Value
Conductor Casing	28” Mild Steel, to a depth of 20 ft.
Total Well Depth	820 ft.
Screen Placement	455 ft. to 810ft.
Seal Depth	400 ft.
Casing Material	Stainless Steel, Type 304
Nominal Casing Diameter	14-inches
Casing Wall Thickness	5/16-inches
Seal Depth	360 ft.
Gravel Pack Placement	400 ft. to 820 ft.
Gravel Pack	8 x 16; P.W. Gillebrand, or equal
Assumed Specific Capacity Range (GPM/ft)	4
Design Discharge Rate (GPM)	800
Estimated Drawdown (feet)	200
Estimated Pumping Levels (ft Bgs)	300-390

Well Siting

The District conducted a GIS-based injection well siting analysis for the unconfined aquifer area (WSC, 2024) to support decision making by the District for future ASR wells. As shown in Attachment B, the Smillie Well is in an area of high potential for ASR.

Applicant Category and Eligibility of Applicant

The applicant, Carpinteria Valley Water District (the District) is a water district located in California and therefore qualifies as a Category A applicant.

Evaluation Criteria

E.1.1. Evaluation Criterion A. Severity of Drought or Water Scarcity and Impacts (15 points)

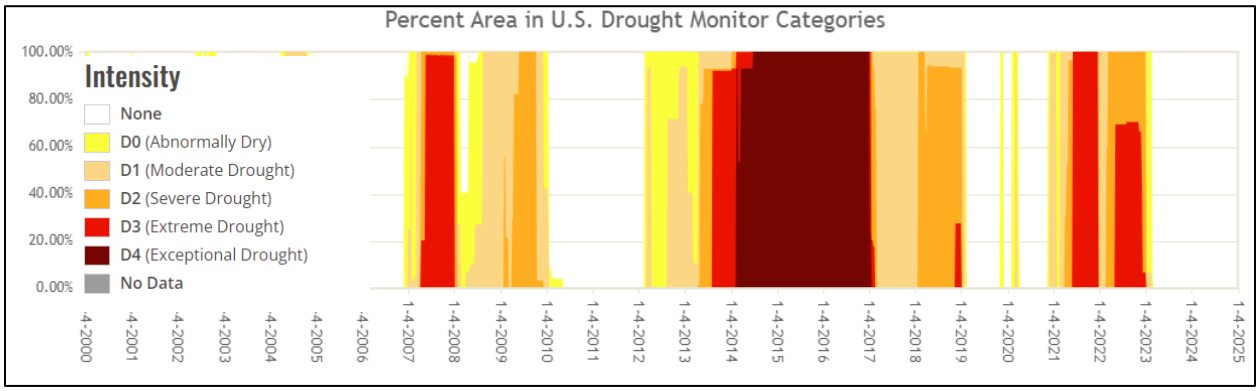
Up to 15 points may be awarded based upon the severity of actual or potential drought or water scarcity impacts to be addressed by the project. Proposals that address more urgent needs will receive higher priority consideration on this criterion than proposals that address less significant needs and impacts.

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

• Describe recent, existing, or potential drought or water scarcity conditions in the project area.

The District has experienced two severe droughts in the last 12 years. In extended drought conditions, the District does not have sufficient water supply to meet the needs of its service area. The period between 2012 and 2016 was one of the driest consecutive water years in Santa Barbara County with 50.8 inches in cumulative rainfall, less than half of the average (CVWD, 2023). The severity of this drought required temporary emergency pumping plant and pipeline at Lake Cachuma to move water across the lake's dry bottom to the distribution system intake that had been stranded by falling lake levels. The statewide drought ended in 2017 but localized Central Coast drought conditions persisted until a wet year in 2019 (CVWD, 2023). However, by the end of water year 2021, the U.S. Drought Monitor showed 99.96% of Santa Barbara County was in a D4 exceptional drought; storage at Lake Cachuma, the District's primary surface water supply, was at 48% of capacity.

Historical Drought Conditions for Santa Barbara County, CA



Note: Additional drought information provided in Attachment F.

In 2021, in response to the drought emergency declared by both the State of California and Santa Barbara County, the District faced significantly-reduced water allocations from its two surface water sources: Lake Cachuma and the SWP. Projections indicated a 50% allocation from Lake Cachuma in water year 2023 and a 0% allocation in water year 2024. Similarly, the District anticipated receiving no SWP allocation for both water years.

Over the past 30 years, the District's groundwater basin experienced a sustained decline in water levels, declining by ~20,000 AF in storage over the last eleven years alone. The basin can only recharge in wet weather. With persistent droughts and precipitation below normal, the basin has been unable to recharge.

In 2022, the District purchased approximately 670 AF of supplemental water at an average cost of $1200/AF; the total cost was $804,000. The cost to deliver purchased water was over $1000/AF, costing the District $670,000. In total, these costs were approximately 9.4% of the District's annual operating budget. If drought conditions had persisted, the District anticipated purchasing 500 AF of supplemental water each year at increasing costs. Without the purchase of supplemental water, the District's projected water supply shortage in 2024 could have reached 57%. Customers would have faced mandatory water use restrictions to avoid a critical shortage.

The District's experience underscores the critical need for local, sustainable supply augmentation. Relying solely on purchasing supplemental water during droughts is an expensive and uncertain strategy. A method for injecting surplus water into the groundwater basin during wet periods would enable the District to be less reliant on external supply sources during future droughts. This would not only help the District maintain the sustainability of its groundwater basin, but water affordability for customers.

• Describe any projected increases to the severity or duration of drought or water scarcity in the project area resulting from changes to water supply availability and climate change. Provide support for your response.).

Climate change poses a significant threat to the long-term water security of the District. California's SWP, a crucial source of water for the District, is projected to become less reliable due to climate change. Delivery of SWP water can vary from 5% to 100% of contracted entitlement in any given year depending on hydrologic conditions in northern California. Delivery is especially unreliable during dry years and multiple dry-year periods. According to the California Department of Water Resources' 2023 Public Draft Update of the California Water Plan (DWR, 2023), SWP allocations are anticipated to decrease to approximately 45% of historical averages. This signifies a significant decline, leaving the District with less than half of its normal SWP allocation during a typical year. Reduced snowpack and earlier snowmelt due to rising temperatures are key factors contributing to this decrease in SWP reliability.

The Cachuma Project captures flood water in Lake Cachuma from the Santa Ynez River, diverting ninety percent of the available water yield to the "South Coast" conveyance facilities for the City of Santa Barbara, Goleta Water District, Montecito Water District, and the Carpinteria Valley Water District. The District receives 50 to 70% of its water from the Cachuma Project on average, but the Cachuma Project deliveries can vary, including several recent zero-allocation years. Historically allocations averaged 2,813 AFY but are anticipated to decrease to 2,110 AFY due to sedimentation in the lake, recurring drought, releases for endangered fish species (pending a Biological Opinion currently being developed), and downstream water rights (Woodard & Curran, 2021).

While surface water supplies like the SWP are vital, groundwater plays a critical role in bolstering the District's water supply. However, the Carpinteria GSP necessitates limitations on groundwater pumping, reducing the District's annual pumping from a long-term average of 1,416 AFY to 1,076 AFY (GSI, 2023). To support groundwater sustainability planning and project development, SGMA GSP regulations require a projected water budget that quantifies aquifer response to future baseline conditions of supply, demand, and climate change over at least 50 years.

During dry years, the District historically pumped an average of 1,400 AFY, and in extreme droughts, this figure could reach up to 2,800 AFY. Therefore, under the new GSP regulations, the District's ability to rely on groundwater during future droughts will be considerably restricted. This limitation, coupled with decreased SWP allocations, paints a concerning picture of potential water scarcity in the face of climate change.

What are the ongoing or potential drought or water scarcity impacts to specific sectors in the project area if no action is taken (e.g., impacts to agriculture, environment, hydropower, recreation, tourism, forestry), and how severe are those impacts? Impacts should be quantified and documented to the extent possible. For example, impacts could include, but are not limited to:

• Whether there are public health concerns or social concerns associated with current or potential conditions (e.g., water quality concerns including past or potential violations of drinking water standards, increased risk of wildfire, or past or potential shortages of drinking water supplies; does the community have another water source available to them if their water service is interrupted?).

The South Coast Conduit is a pipeline that delivers all surface water from Lake Cachuma to the District; it is vulnerable to breach if wildfire-related debris flows or flooding occur. In 2018, during the debris flows in Montecito after the Thomas Fire, the South Coast Conduit was shut down for nearly a month. During that time, the District relied on groundwater to supply customer demand. If wildfires impair Lake Cachuma or the conveyance of surface water becomes unavailable, the District could be forced to rely on groundwater to meet the needs of its customers for short durations. However, as described above, groundwater availability is expected to be severely limited in the future. In addition, seawater intrusion into the basin is also a concern as recently-installed monitoring wells near the coast show the presence of elevated chlorides in the lower aquifers.

• Whether there are ongoing or potential environmental impacts (e.g., impacts to endangered, threatened or candidate species or habitat).

The District depends on imported surface water from the SWP and local surface water from Lake Cachuma to meet customer demand. By increasing local groundwater availability and reducing surface water dependence, more water will remain in the Sacramento-San Joaquin Delta (Delta) which will help maintain in-stream flows and overall ecosystem health. Reducing diversions from Lake Cachuma will improve natural stream flows, which benefits listed species such as the anadromous steelhead trout, and critical habitats. These listed species are at risk due in part to alteration of natural stream flow patterns,

degraded water quality, and lowering the groundwater table, all of which are impacted by surface water diversions.

Seawater intrusion is also a concern. Observations indicate that groundwater levels in some basin aquifers are lower than sea level. Groundwater modeling shows that seawater flows inward toward the basin, and recently-installed monitoring wells near the coast show the presence of elevated chlorides in the lower aquifers. Seawater contains levels of total dissolved solids (TDS), chloride, sodium, boron, and other parameters at much higher concentrations than desired for municipal, industrial, and agricultural use.

In other basins where seawater intrusion has occurred, well owners have redrilled their wells further inland to avoid treatment, typically desalination, to reduce TDS and related contaminants. While it is not currently possible to fully quantify the effects of seawater intrusion into the Basin, the costs can be significant. For example, the cost to redrill a well in the Basin into all three aquifers is approximately $1.6 million. The City of Camarillo (located 30 miles southeast) is currently completing its 3,450 AFY Pleasant Valley Desalter at a cost of approximately $67 million or $2,150 per AF.

• *Whether there are local or economic losses associated with current water conditions that are ongoing, occurred in the past, or could occur in the future (e.g., business, agriculture, reduced real estate values).*

Recurring, prolonged droughts, and extremely variable precipitation patterns are likely to threaten the viability of permanent crops in the Carpinteria valley. Approximately 75% of agriculture in Carpinteria valley is permanent tree crops, including avocados, cherimoyas, lemons, and other orchards (Woodard & Curran, 2021). The ASR well plays a vital role in ensuring a reliable agricultural water supply for crop irrigation.

With over 2,000 acres of fruit orchards and nurseries, the risk for economic loss during periods of drought is high. In dry years, if the water supply is unavailable, farmers may be forced to switch from permanent crops to lower-value field crops or forgo irrigation altogether, leading to economic losses. Additionally, under SGMA regulations, over-drafted groundwater basins must achieve a balance, which could necessitate significant changes in cultivation practices, including fallowing. Permanent crops, like orchards, cannot be fallowed, leaving farmers with limited options. By ensuring a stable water supply, the Project helps prevent the conversion of valuable, permanent agriculture to lower-value uses, thereby safeguarding farmers' investments and overall agricultural viability.

• *Whether there are other water-related impacts not identified above.*

Reduced Basin yield from the GSP and long-term reductions in surface water supplies have increased the stress for Basin pumpers, including the District. Projects that increase Basin yield reduce tensions between pumpers. The proposed Project increases Basin groundwater levels across the Basin, benefitting all pumpers, not just the District.

E.1.2. Evaluation Criterion B. Project Benefits (30 points)

Up to 30 points may be awarded based on the expected drought resiliency and other benefits of the proposed project. Task A, B, and D projects will be evaluated under sub-

criterion B.1 and awarded points based on the project's ability to advance drought resiliency or mitigate water scarcity through augmenting and diversifying water supplies. Proposals containing a well-supported and detailed description of both quantifiable and qualitative benefits will receive the most points under this criterion.

E.1.2.1. Sub-Criterion B.1. Project Benefits (Tasks A, B, D only)

This section of the criterion is to assess the significance of the project in advancing drought resiliency or mitigating water scarcity through augmenting and diversifying water supplies, thus improving water supply reliability.

For Tasks A, B, and D, please address the following:

• What is the estimated quantity of additional supply the project will provide and how was this estimate calculated? Clearly state this quantity in AFY as the average annual benefit over ten years (e.g., if the project captures flood flows in wet years, state this and provide the average benefit over ten years or longer including dry years).

On average, Smillie Well #2 will provide 1,000 AFY of pumping capacity based on yield testing of the existing well, hydrograph data, precipitation patterns, and design of the replacement well. In comparison, the existing well only provides 240 AFY of production with no injection capability. Smillie Well #2 would increase the District's monthly well production capabilities by 27%.

In times of drought, the District becomes increasingly reliant on groundwater supplies as imported water becomes scarce and expensive. During a Stage 2 drought, Smillie Well #2, in conjunction with the District's other two production wells (El Carro well and Headquarters well) would enable the District to meet customer demand solely through groundwater, if necessary. Currently, the District's maximum well production capacity is about 2480 AFY. In a Stage 2 drought, customer demand is approximately 3200 AF. Thus, the District would have an extra 720 AF of local supply available during a Stage 2 drought.

Assuming injection capacity is half of production capacity, a common estimate for injection wells, Smillie Well #2 is projected to have the capacity to inject up to 500 AFY. If the District injects 500 AFY in wet years and 250 AFY in normal years and that there are three wet years and four normal years out of every 10 years, the District could inject 2,500 AF over 10 years. This would make the 10-year average yield from storage of the new Smillie Well 250 AFY.

• What percentage of the total water supply does the project's water yield represent? How was this estimate calculated? It is recommended to use your 10-year average that was presented in the Executive Summary to calculate this percentage.

The District's average annual water supply based on data from 2014-2023 is approximately 4400 AFY (Woodard & Curran, 2021). In normal years, the District pumps approximately 1200 AF of groundwater, approximately 27% of the total supply. Currently, the District can only pump 240 AFY from Smillie Well, which is approximately 20% of the District's groundwater supply and 5% of its total water supply. The District could pump 1000 AFY from Smillie Well #2, which is approximately 19% of its total water supply.

• How will the project build long-term resilience to drought or other water reliability issues? Include factors such as the predictability of supply, variability in availability, and the likelihood of interruptions or failures.

Over the last ten years, the District experienced consecutive years of extreme drought and years of extreme precipitation. In water years 2021 and 2022, the District's SWP Allocation was 5%. In water year 2022, the allocation from its local surface water supply, Lake Cachuma, was 70%.

When its surface water allocations are reduced due to drought, the District must rely on groundwater or purchased, supplemental water to meet customer demand. In water year 2022, the District pumped approximately 2100 AF of groundwater to meet approximately 50% of customer demand, though the District pumps 1200 AFY on average. The ability to pump groundwater is limited by the sustainability of the basin and well capacity. To pump significant quantities of groundwater in drought years while maintaining long-term groundwater basin sustainability, the District will need to inject water in wet years.

In February of 2023, all of the District's Lake Cachuma carryover water, 2,363 AF, spilled from the lake. Again, in February 2024, the District's Lake Cachuma carryover water, 1,002 AF, spilled from the lake. Currently, the District does not have a way to deliver and store this water in wet periods, so it is lost to spill. With the new Smillie Well #2, in spill conditions, the District could inject 500 AF of this water into its groundwater basin. This injection capability would enable the District to capture wet weather supplies and maintain the sustainability of the groundwater basin by enabling basin water levels to recover between droughts. The 10-year average injection capacity of the new Smillie Well is 250 AFY, which is roughly 5% of existing District demands.

10-year Average Injection Capacity

Injection Capability	**10-Year Avg**	**WET Years**
Project Injection Capability in AFY	250 AFY	500 AFY
Average Annual Water Supply in AFY *(From Water Supply by Year table in Executive Summary)*	4,400 AFY	7,280 AFY*
Percentage Yield *(Divide Total Project Water Yield by Average Annual Water Supply)*	5.7%	6.9%
** Wet year supply is based on 2023 data see Water Supply by Year table in Executive Summary*		

Future reliability of the SWP, one of the District's water sources, is expected to be about 50% (DWR, 2024). All surface water supply is delivered to the District through the South Coast Conduit. In an emergency, if the Conduit were damaged, the District may not be able to receive surface water supplies. As such, it is important that the District can meet demand through only locally-produced supply, if necessary. During a Stage 2 drought, the Smillie Well #2, in conjunction with the District's other two production wells (El Carro well and Headquarters well) would enable the District to meet customer demand solely through local groundwater production.

10-year Average Extraction Capacity

Extraction Capability	10-Year Avg	DRY Years
Total Project Water Yield in AFY	1,000 AFY	1,000 AFY
Average Annual Water Supply in AFY *(From Water Supply by Year table in Executive Summary)*	4,400 AFY	500 AFY
Percentage Yield *(Divide Total Project Water Yield by Average Annual Water Supply)*	22.7%	200%
** Dry year supply is based on 2016 data see Water Supply by Year table in Executive Summary*		

• How many years will the project continue to provide benefits?

Properly-designed and maintained municipal wells can last beyond 30 years. The District's Headquarters well was constructed in 2004 (22 years ago) and is currently performing at the same capacity it did when constructed. Based on the District's existing wells, the projected life of the Project is 30 years.

• Provide a qualitative description of the degree/significance of the benefits associated with the additional water supplies.

In 2022, the District spent over $1.4M to purchase and deliver 670 AF of supplemental water. In severe drought conditions, increasing the production and developing the injection capability of the Smillie Well will enable the District to meet demand through groundwater production rather than relying on surface water.

In the wet winters of 2023 and 2024, water spilled from Lake Cachuma, and the District was not able to capture this spill water because it had nowhere to store or inject this water. With the Smillie ASR well, the District could capture and inject a portion of this spill water. The injected water would bolster the water level of the Carpinteria groundwater basin, supporting long-term basin sustainability and enabling the District to increase groundwater pumping in drought.

• How will the project supply help buffer against water shortages, reduce the need for emergency responses, and enhance the resilience of water systems?

As mentioned above, increasing the production capacity of Smillie Well #2 and adding injection capability will buffer against water shortage by enabling the District to pump groundwater when surface water supplies are limited without compromising basin sustainability. This reduces the likelihood the District would need to enact increased drought shortage levels leading to mandatory cutbacks. Additionally, if the District's surface water supplies are inaccessible due to a disaster that impairs the South Coast Conduit, the District's local groundwater production would be better able to avoid emergency conditions.

Groundwater injection capabilities also enhance the resilience of the Carpinteria groundwater basin. Carpinteria Basin's GSP assumes the District will develop management actions that can accommodate drought periods and ensure short-term impacts can be offset by increases in groundwater levels or storage during normal or wet periods. Otherwise, basin levels could decline to the point of impacting water supply operations at

the District or historical farming operations, requiring fallowing or reduction of operations. Pumping demands for municipal and agricultural beneficial uses during the past decades have resulted in a depression in the groundwater elevation surface over the center of the Basin. Monitoring wells have begun to detect increasing levels of chloride. Without any offsetting projects or management actions, lower water levels will occur that could induce or fail to halt seawater intrusion.

In addition, for Task B projects only: please address the following:

• In acre-feet per year (AFY), what is the estimated capacity of the new well(s)? How was the estimate calculated?

Yield testing of the existing Smillie Well from 2015 through 2021 indicates that a specific capacity for Smillie Well #2 would conservatively be 3 GPM/ft and could realistically be as high as 5 GPM/ft. Based on a hydrograph of Smillie Well #1 between the period 1982 through 2019, the depth to water in the well has ranged between approximately 100 feet and 190 feet. Assuming a pumping level at a depth of 67% of the available drawdown (static level to top of well screen) for the high and low water levels, and assuming conservative and best-case specific capacities (3 GPM/ft and 5 GPM/ft, respectively), predicted pumping rates are 531-680 GPM at a specific capacity of 3 GPM/ft and 885-1150 GPM at a specific capacity of 5 GPM/ft (Basis of Design, Pueblo 2022). Assuming a median specific capacity of 4 GPM/ft, the pumping rate will likely range between 708 to 920 GPM through high and low static water level conditions. For planning purposes, it is recommended that a pumping rate of 800 GPM be adopted.

Estimated Pumping and Annual Yield

Parameter	High water level (ft)	Low water level (ft)
Water level (ft)	100	190
Top of screen (ft)	455	455
Available drawdown (ft)	345	261
2/3 Available drawdown (ft)	230	174
Pumping rate (GPM) when Specific Capacity = 3 GPM/ft	680	531
Pumping rate (GPM) when Specific Capacity = 4 GPM/ft	920	708
Pumping rate (GPM) when Specific Capacity = 5 GPM/ft	1,150	885
Annual yield (AFY) @ 800 GPM	1,000 AFY	

• How much water do you plan to extract through the well(s), and how does this fit within and comply with state or local laws, ordinances, or other groundwater governance structures applicable to the area?

To maintain sustainability of the Carpinteria Groundwater Basin, the Carpinteria GSP water budget allocates approximately 1,200 AFY on average for District pumping. The District has three groundwater production wells, the Headquarters well, the El Carro well, and Smillie Well #1. The District will use a combination of these wells to pump 1,200 AFY to meet demand. The amount of water produced from Smillie Well #2 versus El Carro or

Headquarters well will vary based on customer demand, maintenance schedules, water quality sampling, and distribution requirements.

• Will the well be used as a primary supply or supplemental supply when there is a lack of surface supplies?

When surface supplies are limited, local groundwater production will be the District's main source of supply. Additionally, although the District is currently proposing an indirect potable reuse project, it does not currently have any recycled water supplies. When surface water supplies are limited, the District's only options are to purchase expensive supplemental water, or to pump additional groundwater. Without the ability to inject water into the groundwater basin, enabling recovery between droughts, this additional pumping can lead to overdraft.

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

The District does not have a recharge program in place. The Carpinteria Basin GSP identifies a potential recharge project: the Carpinteria Advanced Purification Project that would inject approximately 1,100 AFY of purified water from the CSD Wastewater Treatment Plant into the Basin. However, this has not yet been approved by the District's Board of Directors.

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

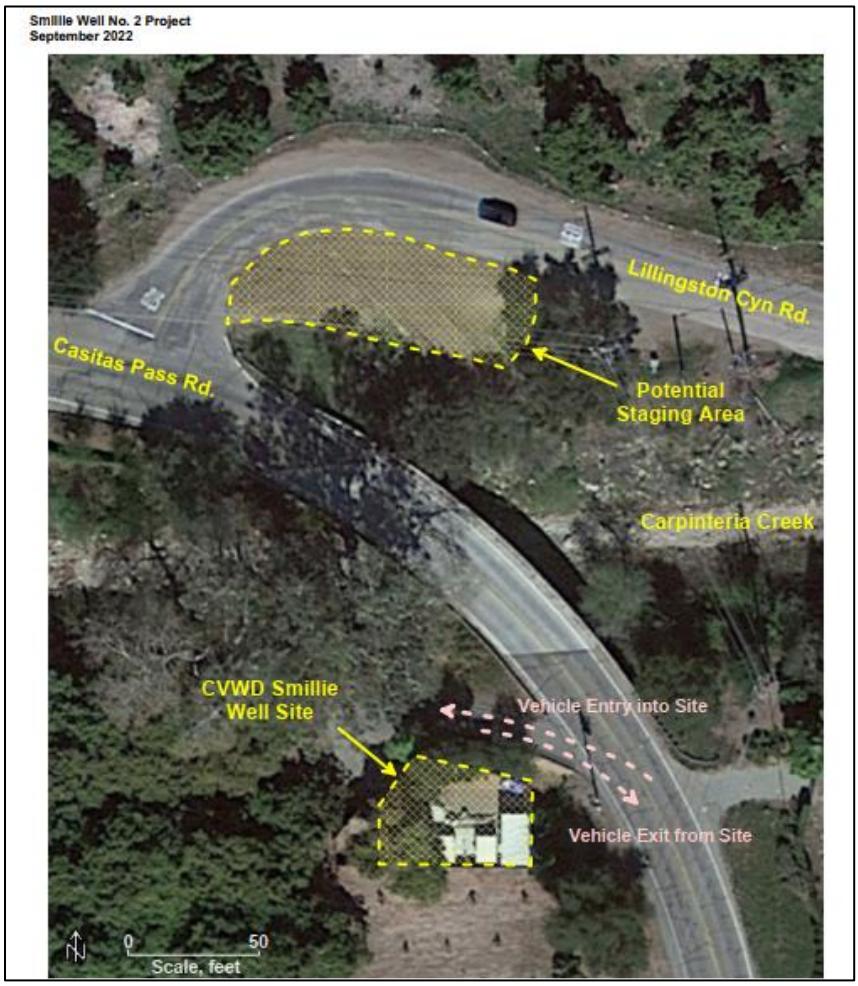
The proposed Smillie Well #2 will not impact the aquifer because it will provide injection capabilities to increase basin levels, and well production will be operated within the sustainable limits identified in the GSP. The Smillie site is situated within the Carpinteria Groundwater Basin, which has been studied extensively over the last 40 years. These studies describe the stratigraphy, structure, and hydraulic characteristics of the aquifer systems of the Carpinteria Basin. The east-west trending Rincon Creek thrust fault divides the basin into two subunits. Storage Unit No. 1 contains the principal water-bearing aquifers within the basin, serves as the primary source of groundwater supply for the basin, and is the unit in which all of the District's principal municipal supply well sites, including the Smillie Well site, are located. The Smillie Well site is within the Recharge Area of Storage Unit No. 1 (Pueblo, 2022).

The essential infrastructure elements are already in place at the Smillie Well facility to allow ASR implementation; only minor piping and instrumentation modifications are needed (along with a properly-designed and constructed well) to implement such a program. The completed Basis-of-Design document incorporates elements to accommodate ASR well operations (e.g. the use of an all stainless-steel casing and screen

to minimize corrosion and plugging and a continuous-slot, wire-wrapped screen to maximize the open area for injection). The Project Description section above includes a detailed design summary from the Basis-of-Design TM (included as Attachment D).

The District has two other functioning production wells besides Smillie Well: El Carro well and Headquarters well, with capacities of 800 GPM and 1200 GPM, respectively. Over the last 10 years, the average annual production of El Carro well was approximately 730 AFY and the average annual production of Headquarters well was approximately 650AF.

Site Location Map



Potential ASR projects have been considered in the Basin in the past. In 2003, Injection/Storage/Recovery testing of the Headquarters well was performed by the District. Approximately 12 million gallons of water were injected, and 19 million gallons of water were recovered during this field study. It was determined that no fatal flaw exists that would prevent the construction of an ASR project in the Basin (Pueblo, 2022). During the development of the Carpinteria Basin Groundwater model (Pueblo, 2012), a model simulation was performed that indicated that an ASR project would be feasible in the Basin and could benefit storage and water levels in the Basin. In 2012, the District performed

successful injection testing on the El Carro #2 production well at an injection rate of about 400 GPM (GSI, 2023, "Executive Summary").

The Carpinteria GSP identifies ASR as a potential project for achieving basin sustainability. Because an ASR project would contribute periodic storage to the aquifer, it would improve hydrogeologic conditions and help alleviate groundwater level decline and reduction in storage.

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

The GSP for Carpinteria Basin describes the existing and proposed monitoring practices for the basin. Within the basin, 35 wells are monitored for water levels, 46 wells are monitored for basic water quality parameters, and 12 wells are monitored for both. Several of these wells were selected as representative monitoring sites. These sites monitor conditions associated with chronic water level decline, reduction of groundwater storage, the degradation of water quality, land subsidence, depletion of interconnected surface water, and seawater intrusion.

The Basin will be considered to have undesirable results if water levels in municipal supply wells decline to the point that it could impact water supply operations at the District, or if water levels in agricultural supply wells decline to the point that inadequate supply is available for historical farming operations, requiring fallowing or reduction of operations.

The possible occurrence of undesirable results will be assessed if 33% or more of the monitoring wells within the Basin exceed the minimum threshold for three consecutive fall measurements (bracketing 2 consecutive water years). The GSP includes a minimum threshold and measurable objectives to define the chronic lowering of groundwater levels. Minimum thresholds are established based on reasonable anticipated future climatic conditions, based on the best available science and climatological models being used to characterize climate change currently in use. The table below shows the objective and minimum threshold for each monitoring well (GSI, 2023).

Monitoring Well Thresholds

RMS Well	Minimum Threshold (ft)	Monitoring Objective (ft)	Land Surface Elevation (ft)
19F4	-30	20	102
20K4	-77	0	47
21L1	-85	10	69
27F2	-92	25	136
26A1	140	220	425
28J1	-40	30	103
28F7	-90	15	65
29D7	-45	0	28

RMS Well	Minimum Threshold (ft)	Monitoring Objective (ft)	Land Surface Elevation (ft)
35E1	12	50	243

E.1.2.3. Sub-Criterion B.3. Additional Project Benefits (All Tasks)

This sub-criterion will be scored based on additional planned, direct benefits not previously described that will result from project implementation. Applicants that can quantify the direct benefits and provide reasonable support will receive the most points in this sub-criterion.

Sub-Criterion B.3.a. Climate Change

Pursuant to E.O. 14008: Tackling the Climate Crisis at Home and Abroad, consider the degree to which the application demonstrates that the proposed project will contribute to climate change resilience and adaptation.

For additional information on the impacts of climate change throughout the West, see www.usbr.gov/climate/secure/docs/2021secure/2021SECUREReport.pdf. To describe how the project will address and build resilience to climate change, consider the following, but only answer if applicable to your project:

• In addition to drought resiliency measures, does the proposed project include other natural hazard risk reductions for hazards such as wildfires or floods?

Climate change is projected to reduce average yield from surface water supplies – both from the Cachuma Project and SWP – over time and lead to wetter wet periods and drier dry periods. The best method to mitigate for this condition is storing water in wet periods for use in dry periods, which is the purpose of this project.

Climate change is the top risk for the District's long-term water supply reliability. It is already impacting the District's water supplies and demands. Raised temperatures result in increasing reservoir evaporation, higher evapotranspiration rates, and reduced soil moisture, all of which contribute to increased water loss and accelerating water demands, especially for irrigation. Reduced snowpack will stress reservoir operations during flood control season and lead to reduced reservoir yields. Total precipitation may vary but climate change is projected to extend and intensify both dry and wet periods. Storing water underground improves the District's climate change resilience by increasing reliance on local supplies that are less susceptible to evaporation.

The District just experienced its largest drought, and its surface water supplies had multiple years with yields at 5% or lower due to historically low local and statewide precipitation. This caused groundwater pumpers, including the District, to increase pumping and lower groundwater levels to record lows. This is all while the District's water use efficiency is some of the highest in the state. Wet winters in 2022/2023 and 2023/2024 provided temporary relief, but the District is doing everything it can to be better prepared for the next drought, including implementing the Smillie Well #2 Project.

Another climate change related risk is an outage of the South Coast Conduit (SCC), which delivers water from the SWP and Lake Cachuma. A larger-scale event like the debris flow

that occurred in Montecito in 2018 could threaten this water conveyance facility. Although the threat of debris flow continues for the three rainy seasons following a wildfire, it is most likely that a large-scale event similar to the Montecito flow will occur in the same year as a wildfire, when the threat is highest and the threshold rain intensity is lowest. For a large-scale event scenario, a rain intensity threshold that would trigger an event occurs in 15 out of 20 years.

In 2009, DWR released a report on Delta Risk Management Strategy that evaluated the potential risk of Bay-Delta levee failure from natural hazards, including earthquakes (seismic events), high water (flooding events), dry-weather failures, and the combined probability of multi-hazard events. The report states that the export of fresh water from the Bay-Delta could be interrupted for about a year and a half and emergency repairs to flooded islands could take about three years depending on the failure event (DWR, 2009).

• Will the proposed project establish and use a renewable energy source?
• Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation?
• Does the proposed project include green or sustainable infrastructure to improve community climate resilience?
• Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?
• Does the proposed project have a conservation or management component that will promote healthy lands and soils or serve to protect water supplies and its associated uses?
• Does the proposed project contribute to climate change resiliency in other ways not described above?

The Project will lower the embedded energy of the District's supplies. Water production and movement is a significant energy demand, thus a significant source of GHG emissions. within the State and within the Carpinteria Valley. The District adopted a Climate Action Plan in December of 2019, which includes a goal of reducing GHG emissions from District operations below 2007 levels by 40% by 2030. The Project will offset other GHG production because Cachuma Project water would be conveyed via gravity during wet periods to be stored locally; it will not need to be conveyed long distances such as with the SWP, which requires 3,382 kWh/AF. Further offsets can be achieved by using carbon-free energy from the Community Choice Electricity portfolio to meet District GHG reduction goals. Finally, hydropower, which provides low GHG energy, has its lowest availability during droughts, when the District would need to convey SWP water that would be replaced by water stored by this Project.

Sub-Criterion B.3.b. Ecological Benefits

Water projects often provide ecological benefits in addition to water supply reliability benefits. Ecological resiliency is crucial to sustain ecosystems that can respond to and recover from external stressors resulting from drought.

*This sub-criterion will be scored based on **intentional, direct benefits** that are expected to result from project implementation. Applicants that can quantify the direct benefits and provide reasonable support will receive the most points in this sub-criterion. Example*

project types that may receive points in this category may include, but are not limited to, increasing storage to augment stream flows during dry periods to protect endangered species or improving water quality or providing water for fish and wildlife habitat areas.

• Does the project seek to improve the ecological resiliency of a wetland, river, or stream in the face of climate change? Provide a narrative discussion, quantification, and metrics to support the anticipated improvements in ecological resilience.
• Identify ecological benefits expected to result from project implementation. Provide a narrative discussion, quantification, and metrics addressing, as applicable, the types and status of species benefited, acreage of habitat improved, restored, or protected, the amount of additional stream flow added, and the improvements in relevant water quality metrics? Support all metrics and quantifications with appropriate calculations.
• Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status? Identify the species of interest, explain how the project will positively impact the species and potential contribute to delisting.

The Project does not have intentional, direct ecological benefits but will have several indirect ecological benefits, including Cachuma Project releases, Bay-Delta flows, and groundwater levels.

The Cachuma Project captures flood water in Lake Cachuma from the Santa Ynez River, diverting water to the District and others. The Santa Ynez River has been listed since 1996 as critical habitat for the southern California steelhead, an endangered species, requiring water releases from the lake to benefit the steelhead fisheries. The amount of water releases needed to restore the habitat and fisheries is a moving target between 2,000 AFY to 13,000 AFY.

A Biological Opinion is currently being developed for the Cachuma Project that has the potential to require increased releases from Lake Cachuma and, as a result, reduced deliveries to the South Coast water agencies, including the District. The Project can supplant water provided for southern California steelhead in Santa Ynez River. Although the demands for the District do not adversely impact flow requirements for southern California steelhead and fisheries during average years, the demand will be less flexible during dry years. The reduced dependency on the Lake Cachuma supplies provides water and improved maintenance of Santa Ynez River flow for steelhead.

In the Bay-Delta system, this could mean increased outflow through the San Francisco Bay, which contains more than 35 endangered species, helping to reduce salinity and improve habitat for fish, amphibians, invertebrates and more. In addition to the non-listed species mentioned above, there are 21 federally-listed threatened and endangered species in the Bay-Delta that will benefit from the reduction in imported water for the District. These species include Delta smelt, Chinook salmon, Least Bell's vireo, and Conservancy fairy shrimp. Several fish species, such as bonytail and Delta smelt, live their entire lives within the Bay-Delta ecosystems, respectively. Other fish species, including Chinook salmon and steelhead, rely on the Bay-Delta for spawning, rearing, and migration during critical times of the year. With more water in the Bay-Delta, these species become more resilient to changes in the ecosystem.

The District's GSP sets groundwater elevation minimum thresholds which protect the groundwater basin and the existing ecological habitats that rely on it by avoiding long-term declines in groundwater levels. Injection of water into the groundwater basin using Smillie Well #2 will support these groundwater elevation minimum thresholds and raise groundwater levels during most years.

Sub-Criterion B.3.c. Other Benefits

This sub-criterion will be scored based on any additional project contributions to addressing water sustainability. For example (but not limited to):

• Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)? Describe the associated sector benefits.

A major benefit of the Project is that it provides water to the District in the event of extreme drought, when other water resources are at their most expensive and may not even be available. Groundwater stored as part of the Project will be available to call on during a drought emergency or as a supply in the case of a local supply outage. The Water Storage Investment Program Technical Reference identified this emergency-response benefit as a public benefit. Avoiding shortage costs are a public benefit for at least three reasons:

- Reason 1: Water is a finite resource, particularly in California. If the District takes action to acquire water through supplementary purchases, that water is not available to other consumers served by other water utilities. By foregoing these water acquisitions, the District is releasing water supply to other consumers.
- Reason 2: It allows for continued economic activity that is based on the availability of water, such as farming, landscaping, food services, and manufacturing. This benefit extends beyond District ratepayers and the state.
- Reason 3: Having a more resilient water supply will limit the need for outside funding by the state or federal government as part of an emergency or disaster declaration. (California Water Commission, 2016)

Another benefit is an emergency response in case of a failure in the Bay-Delta. The SWP infrastructure currently relies heavily on the Bay-Delta's natural channels to convey water south and is vulnerable to earthquakes and impending sea level rise. According to the USGS, there's a 72% chance of a 6.7 or greater magnitude earthquake in the Bay Area by 2043. This could cause levees in the Bay-Delta to fail, crippling the state's ability to deliver fresh water (Delta Stewardship Council, 2021). Therefore, an emergency response benefit of the Project is the emergency water supply it can provide in the event of a levee failure in the Bay-Delta that curtails SWP and Central Valley Project deliveries across the State.

• Will the project benefit a larger initiative to address sustainability?

The Sustainable Groundwater Management Act (SGMA) has established a comprehensive framework for local groundwater management in California. By enabling the formation of groundwater sustainability agencies (GSAs), SGMA facilitates the development of Groundwater Sustainability Plans (GSPs). This serves as strategic blueprints for achieving sustainable groundwater management over the next two decades. A well-managed basin

under these Plans ensures the preservation of groundwater resources, preventing issues such as declining water levels, depletion of supply, reduced storage capacity, deteriorating water quality, land subsidence, and negative impacts on connected surface waters.

This project is a key component of the Carpinteria GSP, aimed at promoting long-term sustainability of the groundwater basin. It is one of several management strategies designed to enhance sustainability, including the potential use of recycled water for recharge and, if necessary, the establishment of a seawater intrusion barrier. Furthermore, this initiative is part of a broader storage and banking program that opens avenues for collaboration with neighboring agencies. This Project reinforces a collective commitment to sustainable resource management.

• Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?

Reduced Basin yield from the GSP and long-term reductions in surface water supplies has increased the stress for Basin pumpers, including the District. Projects that increase Basin yield, like the proposed Project, reduce tensions between pumpers. Also, the proposed Project increases Basin groundwater levels across the Basin, benefitting all pumpers, not just the District.

E.1.3. Evaluation Criterion C. Planning and Preparedness (15 points)

Up to 15 points may be awarded based on the extent that the proposed project or goal is supported by an existing planning effort. For Tasks A-C, proposals that reference plans clearly intended to address drought will receive the most points under this criterion.

Priority under this criterion will be given to proposed projects that are supported by a collaboratively developed planning document. Proposals that demonstrate that the proposed project is clearly supported by an existing plan will be awarded the most points under this criterion. While the proposed project may be supported by multiple planning efforts, please provide specific details related to only one relevant plan. During evaluation, the Application Review Committee (ARC) will only use the information regarding the first plan cited.

Attach relevant sections of the plan(s) that are referenced in the application, as an appendix to your application. These pages will be included in the total 100-page count for the application. Provide clear citations to those relevant sections when answering the criteria below. Do not include a link to a plan, as the ARC will not review material outside the proposal package. Please address the following:

***Plan Description and Objective**: Is your proposed project supported by a specific planning document? If so, identify the plan by name and describe the plan, including:*
• When was the plan developed? How often is it updated?
• What is the purpose and objective of the plan?
• What is the geographic scope of the plan?
• Explain how the applicable plan addresses drought.

• For Tasks A-C, describe the plan's drought-focused elements (e.g., a system for monitoring drought, drought projections that consider climate change, vulnerability assessments, identification of drought mitigation projects, drought response actions, and an operational and administrative framework).

Carpinteria Groundwater Basin Groundwater Sustainability Plan

Plan Description and Objective (GSI, 2023, "Executive Summary")

The Project is directly supported by the Carpinteria Groundwater Basin GSP, prepared for the Carpinteria GSA, issued in December of 2023, to be updated every five years.

Effective as of 2015, the SGMA allows local agencies in California to form GSAs to develop GSPs for managing groundwater resources. The Carpinteria GSA, which is comprised of multiple local entities, has established criteria to prevent significant negative impacts on six sustainability indicators and includes a monitoring program to support long-term groundwater sustainability.

The jurisdictional boundaries for the GSP encompass the Carpinteria Groundwater Basin (Basin No. 3-018), a 7,801-acre coastal basin spanning parts of Santa Barbara and Ventura counties, including the City of Carpinteria. The surface water bodies in the plan area include Carpinteria, Franklin, Gobernador, Rincon, Toro Canyon, and Santa Monica Creeks. The eastern boundary of the Basin is marked by the surface extent of the Casitas Formation near Laguna Ridge in Ventura County, while the Pacific Ocean delineates its southern edge. In 2018, adjustments were made to the western boundary to align with the District's service area. The northern boundary was refined based on updated geological maps. Groundwater rights have not been adjudicated, and there are no other groundwater sustainability agencies or alternative plans within the basin.

Drought-Focused Elements of the Plan

The plan addresses drought in many direct and indirect ways. Most directly, the GSA established measurable objectives, including interim milestones every five years, to achieve the basin's sustainability goal within 20 years of Plan implementation and ensure ongoing sustainable management of the groundwater basin throughout the planning and implementation period. The groundwater storage sustainability indicators are based on historical groundwater level and precipitation data; they are designed to account for natural fluctuations in groundwater levels observed during past wet and dry periods. The primary goal is to ensure adequate storage to withstand multi-year droughts similar to those from 2012 to 2021 (which included two wet years in 2017 and 2019) and establish levels typical of pre-drought conditions to avoid reflecting drought scenarios.

Each Agency is required to detail in its Plan the methods and criteria used to identify undesirable results for the basin. These results occur when significant and unreasonable impacts on sustainability indicators arise from groundwater conditions within the basin. In the context of prolonged drought, minimum thresholds are determined based on projected future climate conditions, leveraging the best available science and climate models that address climate change. Severe and unexpected droughts may lead to critically low

groundwater levels, resulting in undesirable effects. The SGMA regulations recognize the potential for short-term drought impacts and highlight the importance of flexible management actions. This flexibility allows for adjustments during drought periods and ensures that any temporary reductions in groundwater levels can be balanced by recoveries during normal or wet years.
Objectives for Chronic Lowering of Groundwater Levels Sustainability Indicator")

SGMA regulations require that each GSP details the projects and management actions needed to achieve basin sustainability goals and adapt to evolving conditions. The Project analysis highlights several critical issues, including limitations of the SWP conveyance system, declining reliability, rising costs, potential yield reductions from the Cachuma Project, increased competition for Lake Cachuma storage, and stricter groundwater management mandates from SGMA. These challenges emphasize the urgent need for a local, reliable, and drought-resistant solution. (GSI, 2023) (Pages 6-2 to 6-7 "Projects and Management Actions")

Plan Development Process: *Was the plan(s) developed through a collaborative process? Describe the process including the following:*
• Who was involved in developing the plan? Identify specific entities or organization and describe their involvement.
• Was the plan was prepared with input from stakeholders with diverse interests (e.g., water, land, or forest management interests; and agricultural, municipal, Tribal, environmental, and recreation uses)? Describe the process used for interested stakeholders to provide input during the development of the plan.
• If the plan was prepared by an entity other than the applicant describe whether and how the applicant was involved in the development of the plan or why they were not part of the planning process.
• Tribal Plans: For some Tribal plans, collaboration could include working with entities representing multiple interests within the Tribe (e.g., Tribal water agencies; Tribal fish and wildlife agencies, cities, or towns on Tribal land; Tribal fisheries, industries, or agriculture; and Tribal community members). For Tribal plans that were developed collaboratively with multiple Tribal interests, but did not include collaboration with external entities, provide an explanation as to why collaboration with entities external to the Tribe were not involved in the development of the strategy or plan.

Plan Development Process

On January 31, 2020, the Carpinteria GSA was established by a Joint Exercise of Powers Agreement (JPA) among local agencies to manage groundwater and develop a unified GSP, with recognition submitted to the California DWR on February 7, 2020. The JPA includes the four member agencies: the Carpinteria Valley Water District, the City of Carpinteria, County of Santa Barbara, and County of Ventura.

The Plan was a collaborative effort between all members of the JPA. The JPA describes the agreement among member agencies establish the Carpinteria GSA to manage groundwater in the Basin sustainably. This includes decision-making procedures, outlines the GSA's powers and responsibilities, and provides for quarterly and special meetings …

The JPA establishes a governance structure for the GSA, featuring a board of directors with five regular directors and three optional directors appointed by other member agencies. The board includes a chair and a vice chair, elected by the members, and each agency can appoint an alternate director to fill in as needed. Alternate directors can either be legislative members or senior management staff. (GSI, 2023)(Executive Summary)

Since its formation, the Carpinteria GSA has actively engaged stakeholders through public meetings and consultations, starting with the development of its JPA. A contact list of interested parties was created, and the GSA continues to encourage broad participation in managing the Basin's groundwater resources during the Plan's development. Key stakeholders invited to participate include holders of overlying groundwater rights such as agricultural users, domestic well owners, municipal operators, public water systems, local planning agencies, environmental users, surface water users, federal entities, California Native American Tribes, and disadvantaged communities. The Communication and Engagement Plan for the GSP outlines the eight public workshops held from October 2022 to August 2023. Additionally, a GSP Advisory Committee (GSPAC) was formed from Basin stakeholders through an interview process, and seven public meetings were conducted between February and August 2023. (GSI, 2023) (Pages 2-30 to 2-31, "Beneficial Uses and Users")

Plan Support for Project: *Describe to what extent the proposed project is supported by the identified plan, including:*
• Does the plan identify the proposed project by name and location as a potential mitigation or water management action?
• Explain how the proposed project was prioritized in the plan over other potential projects/measures.
• If the proposed project is not specifically identified in the plan, does implementing the proposed project achieve a goal or need identified in the plan?
• Is the supported goal or need prioritized within the plan? If so, how is it prioritized?

Plan Support for Project

The GSP identified several projects and management actions to address the issue, including implementation of ASR wells to store water during wet years for use during dry years and pumping redistribution to reduce the risk of seawater intrusion. The Project would provide a means to recharge the groundwater basin more quickly than other methods. Redistribution of pumping away from the coast was also identified in the GSP so that water levels remain stable at the coast and reduce the movement of seawater into the basin. The Smillie Well is currently the municipal well furthest from the coast. Increasing Smillie Well's production capacity will allow less pumping at HQ Well, the well closest to the coast. The GSP was prepared by the Basin Groundwater Sustainability Agency (GSA), which is comprised of four public agencies and led by the District. (GSI, 2023) (Section 6.10, pp. 6-42 to 6-46)

The Plan identifies this Project under the category of the Aquifer Storage and Recovery Projects. The ASR Project is prioritized as a Tier 2 project and will be evaluated and ranked during the first five-year period for potential future implementation. The Project description for this category is such that ASR would provide for the injection of supplemental surface water supplies, to the extent they are available, into the natural structure of the basin aquifer for use as an underground storage reservoir. The source water for injection must be drinking water quality. Water stored in the Basin as a result of an ASR project could provide a drought supply for the District service area or could be used in conjunction with other projects and management actions in the Basin to achieve sustainability. (GSI, 2023) (Section 6.7, pp. 6-29 to 6-32)

Measurable Objectives include: Because an ASR project would contribute periodic storage to the aquifer, this Project would improve hydrogeologic conditions. This would contribute to the successful attainment of the measurable objectives for the chronic groundwater level decline and reduction in storage sustainability indicators.

Direct Project benefits include: An ASR Project would result in an increase in basin groundwater storage, increased water levels, and possibly an ancillary impact on water levels along the coast that could mitigate against conditions conducive to seawater intrusion. It would also provide drought supplies, which would reduce the dependence on pumping of native groundwater by the District during drought periods. (GSI, 2023)

E.1.4. Evaluation Criterion D. Readiness to Proceed and Project Implementation (15 points)

Up to 15 points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement. Information provided in Section H.1 Environmental and Cultural Resource Considerations will be utilized when assessing this criterion. Applications that include a detailed project implementation plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion. Please also see Section B.2. Expected Award Amount regarding eligible lengths of projects for this NOFO.

• Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates for completing the project within the applicable timeframe. Milestones may include but are not limited to preliminary and/or final design, environmental and cultural resources compliance, permitting, and construction/installation.

Implementation Plan: The District completed a Basis of Design for Smillie Well #2 in September 2022 (Pueblo, 2022). Both design of the replacement well construction and development of a testing program for the well are 95% complete. The District has also initiated preliminary design of the replacement well and environmental permitting. See Attachment A for a detailed schedule.

Milestone Summary

Milestone/ Task/ Activity	Start Date	Completion Date
Task 1 Grant Administration	Sep 2025	Oct 2027
Task 2 Project Management	Dec 2024	Apr 2027
Task 3 Permits & Environmental Compliance	Nov 2024	May 2027
Task 4 Engineering and Design	Aug 2024	Nov 2025
Task 5 Construction	Jan 2026	Apr 2027
Task 6 Testing Program	Jun 2026	Dec 2026

• Describe any permits or approvals that will be required (e.g., water rights, water quality, stormwater, other regulatory clearances). Include information on permits or approvals already obtained. For those permits and approvals that need to be obtained, describe the process, including estimated timelines for obtaining such permits and approvals.

Permits/Approvals: The District will also acquire the following permits before construction:

California Environmental Quality Act (CEQA)

The proposed Project does not qualify for a categorical exemption from the California Environmental Quality Act (CEQA) because the well would be located at a new site at a sensitive location (adjacent to Carpinteria Creek). Significant impacts may include nighttime drilling noise, encroachment into the riparian habitat of Carpinteria Creek, and disturbance of archeological resources. Therefore, the District will prepare an Initial Study (IS) and Mitigated Negative Declaration (MND). Both will be prepared based on existing project descriptions and include a cultural resources record search, a Phase I archaeological field survey, a biological survey, and baseline noise measurements. The District will also prepare and distribute a notice of Intent and the Public Draft IS/MND to properties located within 300 feet of the Project site. The CEQA initial review started, but completion will rely on the completion of a preliminary site design. With the current schedule, it is anticipated that the CEQA work will be complete by April of 2025

National Environmental Policy Act (NEPA)

Environmental review under NEPA may be required if there is a federal nexus established from the funding of the Project through a federal program including WaterSmart. The District will utilize work done for CEQA to complete the NEPA review. It is anticipated that this work will be completed in tandem with CEQA schedule and completed in April of 2025.

SBCO Coastal Development Permit (CDP)

The Smillie Well is in the Coastal Zone and will require a CDP administered under the Santa Barbara County local coastal plan. The permit will have conditions for the development of the site, including analysis of construction and operation impacts and potential mitigations. The processing of this permit will utilize the preliminary site design and the CEQA analysis for an understanding of the Project. The permit application will be submitted in February of 2025 and is expected to be completed by July 2025.

SBCO Conditional Use Permit (CUP)

The Santa Barbara County Planning and Development may require a CUP to operate the facility since the site is located in an agriculture zone. If so, the CUP is typically processed concurrently with the CDP and will be completed on the same schedule.

Santa Barbara County Environmental Health Services (SBEHS) Agency Monitoring Well Permit

A permit will be required for the conversion of Smillie #1 into a monitoring well, and a permit for the construction of Smillie Well #2 will also be required. Although these are ministerial permits, the District will contact SBEHS prior to the commencement of the preparation of the specifications for the Project to ascertain whether or not this agency will have any questions or concerns related to the Project or whether or not any special conditions may be applied. This permit is considered a "day of" permit and will be applied for a week before well drilling. Drilling is scheduled to begin in March of 2026.

Regional Water Quality Control Board (RWQCB) ASR General Permit Pilot Test

The RWQCB will require an ASR discharge permit under the General ASR permit to conduct pilot testing to determine whether the ASR operations will have any negative impacts on the targeted aquifer. This permit will be in force for approximately two years. Once all necessary data is collected for the pilot testing, the RWQCB will review and determine long-term requirements for the operations of the ASR. The NOI will be filed in July of 2025 and is expected to be complete by December of 2025.

RWQCB ASR General Permit for long-term operations

RWQCB will require an ASR discharge permit under the General ASR permit to conduct ASR operations for the long term. The RWQCB will use pilot test data to inform the long-term permit. This District will apply for this permit in February of 2027 as the Project approaches completion and is expected to be complete May of 2027.

RWQCB Drinking Water System Discharges Permit: Planned Discharges

Planned discharges resulting from well drilling will use the Water System General Permit, in which the District is enrolled. Construction-related discharge will be handled through a Stormwater Pollution Prevention Plan (SWPPP). Both of these permits are in place.

Caltrans Encroachment Permit

The Smillie Well site is accessed off State Highway 192. With the Smillie Well site changing, a redesign of the access to the site may be necessary which will trigger a Caltrans Encroachment permit. If necessary, the encroachment permit will be applied for after the preliminary site design is complete. It is anticipated that the application for this permit will be submitted in October of 2025 and completed by December of 2025.

State Board Department of Drinking Water (DDW) Drinking Water Permit Amendment

An amendment to the District's existing water system permit from DDW will be required to remove Smillie Well #1 from the system permit and add Smillie Well #2. This will require an updated Drinking Water Source Assessment and Protection (DWSAP) analysis. DDW will review the updated DWSAP and issue a new drinking water permit with appropriate

monitoring and reporting requirements for the Smillie Well #2. This process will begin after the Project is substantially complete in April of 2027.

• Identify and describe any engineering or design work performed specifically in support of the proposed project. If design work has commenced, what phase of design is the project current in (e.g., preliminarily or final and percentage-30%, 60%, 90%, or complete). If additional design is required, describe the planned process and timeline for completing the design. Projects that are further in design will receive more points.

The District prepared a detailed BOD for Smillie Well #2 (Pueblo, 2022). The BOD established recommendations for drilling and well depths, casing material, casing diameter, well screen design, slot size, well screen placement, and ASR considerations. The BOD is the basis for the preparation of tightly-written specifications to ensure the efficient construction of a high-capacity and long-lasting well. Final construction plans, specifications, and bid documents for the Smillie Well #2 drilling operations are 95% complete (Pueblo, 2024). Pueblo will also develop an ASR Pilot Test Work Plan for Smillie Well #2. The plan will include an evaluation and identification of needs for implementing the program and consists of the following main components:

- Identification of temporary above-ground facility improvements to convey injection source water and recovery pumping discharges to and from the well, as well as test pump/motor/discharge head requirements and downhole injection appurtenances.
- Development of ASR pilot test program parameters.
- Development of a Sampling and Analysis Plan to be implemented during the ASR pilot test program.

The District will contract with a civil engineering design firm to develop the site engineering documents including piping, pump, electrical equipment, treatment equipment, concrete flatwork, and buildings.

• Describe any land purchases that must occur before the project can be implemented, and the status of the purchase. (While land purchases are not allowable costs under this NOFO, this information is still important to assess the readiness to proceed.)

The District is not anticipating purchasing any land for the Project. The District owns the parcel on which the existing Smillie Well is located. Since this parcel is only 5,000 square feet, the District plans to contact the owner of the neighboring property and attempt to make arrangements for the contractor to temporarily encroach onto that property with equipment and possible materials staging during the Project.

• If the project is completely or partially located on Federal land or at a Federal facility, explain whether the agency supports the project and has granted access to the Federal land or facility, whether the agency will contribute toward the project, and why the Federal agency is not completing the project?

The Project is not located on Federal land or at a Federal facility.

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

No new policies or administrative actions are required to implement the Project.

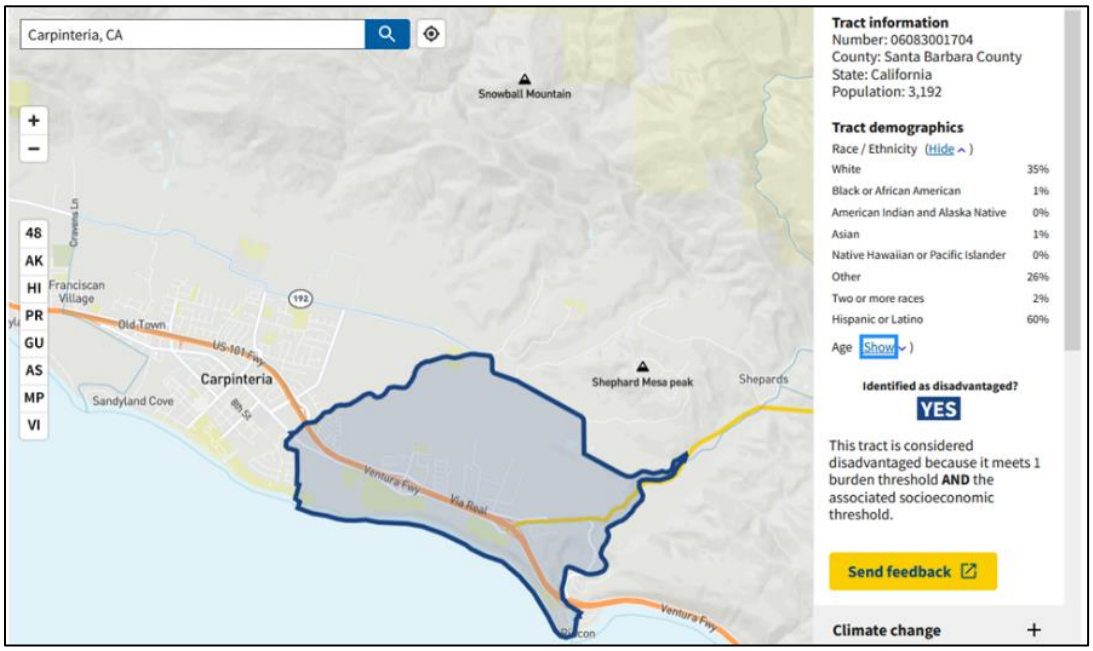
E.1.5. Evaluation Criterion E. Presidential and Department of the Interior Priorities (15 pts)

Up to 15 points may be awarded based on the extent that the project demonstrates support for the Biden-Harris Administration's priorities under E.O. 14008: Tackling the Climate Crisis at Home and Abroad, and the President's memorandum, Tribal Consultation and Strengthening Nation-to Nation Relationship

Benefits for Disadvantaged Communities

Points will be awarded based on the extent to which the project directly serves disadvantaged communities. Projects that primarily benefit disadvantaged communities will be given priority under this criterion. For the purposes of this criterion, Tribes and insular areas (American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands) are considered disadvantaged. Use the White House Council on Environmental Quality's CEJST, available online at Climate & Economic Justice Screening Tool (https://screeningtool.geoplatform.gov) to identify the disadvantaged communities that will benefit from your project. Points can only be awarded under this criterion by using CEJST. Please provide a map overlay displaying both the project area and CEJST tool. If applicable, describe how the proposed project will directly serve and/or benefit a disadvantaged community. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?

Climate and Economic Justice Screening Tool for Project Area



The District's service area includes the City of Carpinteria, with a population of 13,385, and the service area total population of approximately 15,600 residents. The Project benefits all residents within the District service area. The figure above shows that Tract Number 06083001704, with a population of 3,192 (roughly 20% of the District service area and 24%

of City population), is designated as disadvantaged by the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool. EPA, 2024)

The District is considered to be water-rate burdened by the state of California. Three census blocks within the District's service area, 060830016042, 060830016013, and 060830017062 have unemployment in the 80th percentile at 9%, 11% and 10%, respectively. In addition, two census tracts qualify as disadvantaged communities (DAC) per DWR's definition (MHI is less than 80% of California's statewide MHI).

The Project will directly increase the amount of locally-controlled potable water supplies during a drought. Benefits realized by all the District customers include improved water supply reliability and associated protection against cost increases of imported water. Although the benefits will be realized equally by all residents within the District's service area, the degree of benefits felt by DACs will be higher compared to the benefits felt by non-DACs because the impact of a rate savings is more substantial to lower-income households than higher income ones.

Tribal Benefits

• Does the proposed project directly serve and/or benefit a Federally Recognized Tribe? • • • Describe the Tribal benefits. Benefits can include, but are not limited to, public health and safety by addressing water quality, new water supplies, economic growth opportunities, or improving water management.

• Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?

While Reclamation's Cachuma Project has no contractual obligation to provide water for tribes, the Project serves the Chumash Indians residing in the District. The traditional tribal territory for the Chumash Indians encompassed 7,000 acres and spanned the Santa Barbara and Ventura counties. Extending from Paso Robles to Malibu, the Chumash had a total population of 22,000 people. In 1901, the Santa Ynez Band of Chumash Indians was federally recognized, and the Santa Ynez Reservation (Reservation) was established. The Reservation encompasses 144 acres and is located adjacent to the town of Santa Ynez, which is about 40 miles from the City of Carpinteria. The Reservation is too small to develop housing to accommodate the tribe's members and their descendants who want to live on the Reservation. The overcrowding has forced many Chumash Indians to live elsewhere, cut off from their community. Santa Barbara County is home to over 9,400 people of Native American descent, including Chumash and other tribes, representing 2.1% of the overall population in the County. Approximately 1.6% of the City's population is of Native American descent. (US Census Bureau, 2020)

E.1.6. Evaluation Criterion F. Nexus to Reclamation (5 points)

Up to 5 points may be awarded if the proposed project is connected to a Reclamation project or Reclamation activity. Previously awarded grants do not constitute as a nexus under this criterion.

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider the following:

• Does the applicant have a water service, repayment, or O&M contract with Reclamation? If so, please provide the contract number(s).
• If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?
• Will the proposed work benefit a Reclamation project area or activity?
• Is the applicant a Tribe?

Reclamation's mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. This Project supports all aspects of this mission. The Project will store water that is currently disposed of in the ocean and can be used for potable municipal and agricultural supply. It will create a sustainable and locally-controlled supply while reducing the District's reliance on surface waters from the SWP and federal Cachuma Project during drought. Reclamation operates the Cachuma Project according to a series of water rights orders issued by the SWRCB. Most recently, the SWRCB is requiring Reclamation to: 1) Release more water from Cachuma Reservoir during wetter-than-normal years; and 2) Conduct studies regarding steelhead protection and the reduction of invasive species in the watershed.

Obligations for the Cachuma Project include complying with Section 7 of the Endangered Species Act, for which substantial work has been completed for habitat restoration and other fish management projects, totaling almost $40 million. Also, Reclamation must comply with the downstream settlement agreement to release water from Cachuma to replenish downstream groundwater basins in the Santa Ynez Valley. On a larger scale, since the District straddles two Reclamation regions (Mid Pacific and Lower Colorado River), Reclamation's obligations include supplementing California's imported water delivery via the aqueduct systems. The imported water aqueducts include Reclamation's Central Valley Project and DWR's SWP. The Project eases these obligations of Reclamation by reducing the use of Cachuma Project and SWP surface waters.

E.1.7. Evaluation Criterion G. Stakeholder Support for Proposed Project (5 Points)

Up to 5 points may be provided based on the level of stakeholder support for the proposed project. Applications that demonstrate support for the project from a diverse array of stakeholders will receive the most points under this criterion. For example, provide letters of support from entities representing agricultural, municipal, Tribal, environmental, recreation uses, and so forth.

• Describe the level of stakeholder support for the proposed project. Are any stakeholders providing support for the project through cost-share contributions or through other types of contributions to the project?

Included in Attachment E are letters of support from the following agencies:

1. **Carpinteria GSA:** The GSA represents Carpinteria Valley Water District, City of Carpinteria, County of Santa Barbara Water Agency, and County of Ventura. As the primary beneficiary, the District will fund the Project, but it is supported by GSA members to support Basin sustainability.
2. **Montecito GSA:** Montecito groundwater basin is very small and is not conducive to ASR. Montecito GSA has an interest in supporting Montecito Water District's supply reliability to reduce pressure on Montecito Groundwater Basin and therefore supports groundwater banking in Carpinteria.
3. **Montecito Water District:** Both Montecito Water District and Casitas Water District are neighboring agencies that are both interested in partnering with the District to bank water in the Basin. This Project is focused on banking for the District but will provide framework to expand ASR in the basin with regional partners
4. **Casitas Water District:** Casitas Water District is building a high-capacity intertie near Carpinteria that will connect Santa Barbara County and Ventura County and has expressed interest in using Carpinteria Groundwater Basin as a potential water bank for its State Water.
5. **County of Santa Barbara:** The County Water Agency is involved in Groundwater Sustainability in the County and has express support for ASR projects in Carpinteria.
6. **City of Carpinteria:** City of Carpinteria is a member agency of the GSA and supports sustainability projects.
7. **Private Grower:** Case Van Wingerden is a private farmer that owns and operates several groundwater wells connected to farming operations in Carpinteria.

Performance Measures

All applicants are required to provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts as well as the overall effectiveness of the project.

Program funding may be used to establish a monitoring and data management plan or to install necessary equipment to monitor progress. However, program funding may not be used to measure performance after project construction is complete (these costs are considered normal operation and maintenance costs and are the responsibility of the applicant).

The proposed Project enables the District to support the sustainability of its groundwater basin and improve drought resiliency. The specific anticipated benefits and their related methods for measuring performance are detailed in the following table.

Primary Benefits & Target	Performance Measure
Reduced purchases of imported water: The Project will inject up to 500 AFY and an estimated average of 250 AFY of into the Carpinteria Basin, which can be extracted for potable supply. The increased supply will offset purchases of imported water in drought.	Measure how much water was recharged into the Basin, which directly correlates to offset surface water purchases.

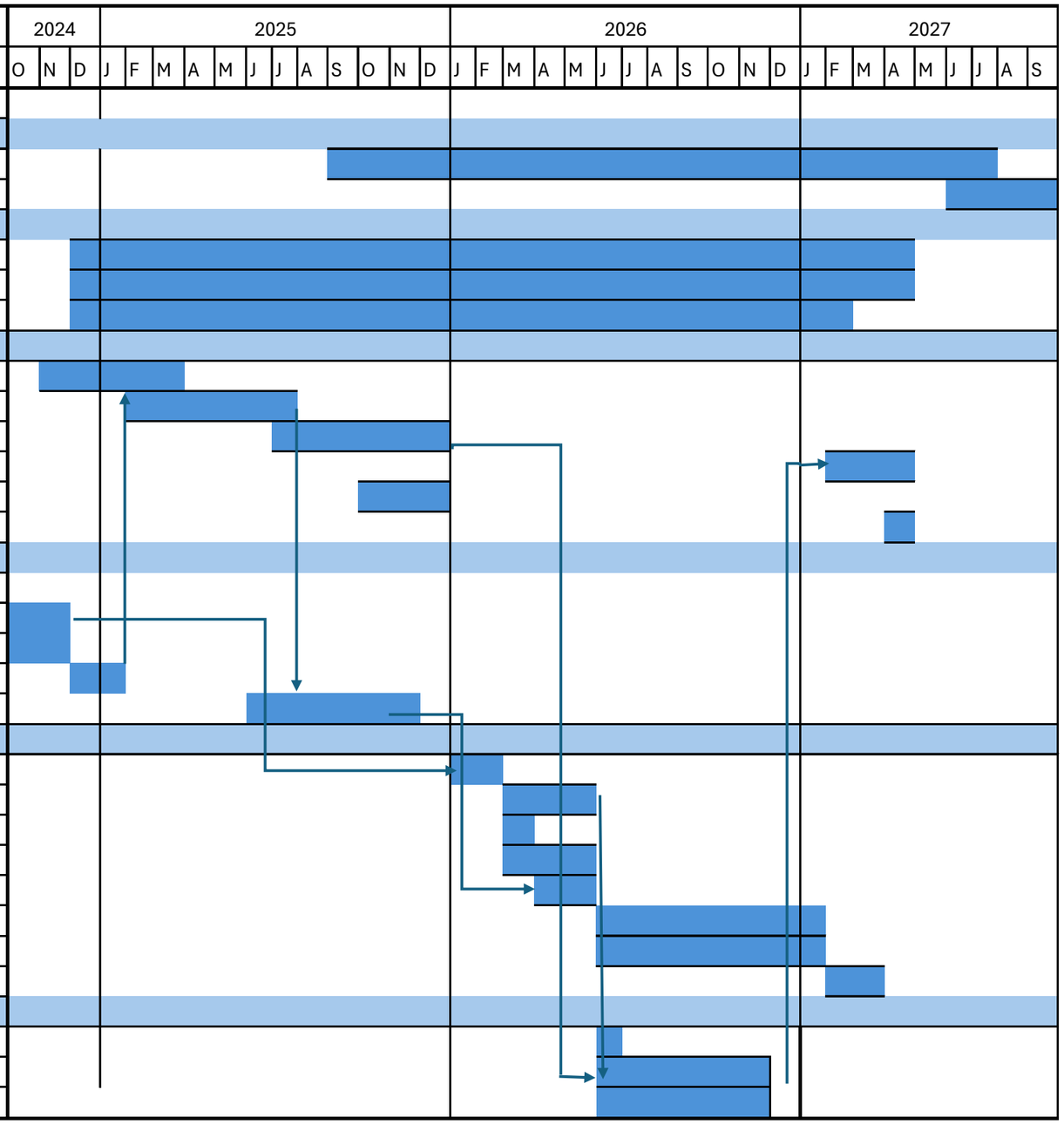
Primary Benefits & Target	Performance Measure
	Measure SWP and supplemental water deliveries during drought.
Improved capture of wet weather supply: In the wet winters of 2023 and 2024, all the District's carryover water in Lake Cachuma, approximately 3,300 AF, was lost to spill. Previously, the District did not have an alternative location to store or inject water when Lake Cachuma is likely to spill. In the future, the District can use the Smillie ASR well to inject approximately 500 AFY into its Basin instead of losing the water to spill.	Total water stored in the Basin from Cachuma carryover will be measured between each spill. Carryover water stored in the Basin will directly offset the loss of water to spill.
Improved groundwater levels and reduce seawater intrusion impacts: Recharge an average of 250 AFY into the Basin. Groundwater levels vary seasonally. Bimonthly measurements from observation wells show a depression in the central portion of the basin at approximately 60 feet below sea level and water levels were consistently below sea level in the western portion of the Basin, causing susceptibility to seawater intrusion.	Meter measuring volume recharged. Biannual Groundwater levels measured in observation wells will document the groundwater level trends.
Reduced demand on existing Federal water supply facilities: A portion of CVWD's supplies come from the Cachuma Project, a Federal water supply source. During drought is when most of the pressure occurs on the Cachuma project. If water is stored in the groundwater basin, this will reduce reliance on Lake Cachuma during droughts.	Groundwater withdrawal of banked groundwater will be measured. This will be directly correlated to reduced Cachuma deliveries during drought
Reduced existing diversions from natural watercourses: The Project will reduce dependence on imported water supplies, which are diverted from natural water courses in the Bay-Delta and Santa Ynez River. Over the lifetime of the Project, this is expected to be up to 7,500 AF. Flood waters (non-perennial) are the waters targeted for capture and storage. When this water is lost to spill during flood conditions it is wasted to the ocean. The water that will potentially be wasted to the ocean is the water that CVWD will be targeting to inject and store in the Basin.	Groundwater withdrawal of banked groundwater will be measured. This will be directly correlated to less water being diverted from the Santa Ynez River and the Feather River's perennial flows.

Smillie Well Replacement ASR Well Project

Tasks			Start Date	Completion
1		**Grant Administration**		
	a	Grant Management and Invoicing	Sep, 2025	Jul, 2027
	b	Grant Close Out	Jun, 2027	Oct, 2027
2		**Project Management**		
	a	Program Oversight	Dec, 2024	Apr, 2027
	b	Project Management	Dec, 2024	Apr, 2027
	c	Outreach	Dec, 2024	Mar, 2027
3		**Permits & Environmental**		
	a	CEQA/NEPA analysis	Nov, 2024	Mar, 2025
	b	SBCO Coastal Development Permit	Feb, 2025	Jul, 2025
	c	RWQCB ASR General Permit Pilot Test	Jul, 2025	Dec, 2025
	d	RWQCB ASR General Permit	Feb, 2027	May, 2027
	e	Caltrans Access Permit	Oct, 2025	Dec, 2025
	f	Drinking Water Permit Amendment	Apr, 2027	May, 2027
4		**Engineering and Design**		
	a	Smillie Well Replacement Basis of Design Report	Jul, 2022	Sep, 2022
	b	Smillie Well Replacement Well Construction Design	Aug, 2024	Sep, 2024
	c	Smillie Well #2 Testing Program memo	Aug, 2024	Sep, 2024
	d	Smillie Well Replacement Site Preliminary Design	Dec, 2024	Jan, 2025
	e	Smillie Well Replacement Site Final Design	Jun, 2025	Nov, 2025
5		**Construction**		
	a	Bid out Well drilling	Jan, 2026	Mar, 2026
	b	Drill Replacement Well Construction	Mar, 2026	May, 2026
	c	Conversion of Existing Well	Mar, 2026	Mar, 2026
	d	Hydrologeologic and Construction Management Support	Mar, 2026	May, 2026
	e	Bid out Site Construction	Apr, 2026	May, 2026
	f	Site Construction	Jun, 2026	Jan, 2027
	g	Engineering support & Construction Management	Jun, 2026	Jan, 2027
	h	Startup/comission	Feb, 2027	Apr, 2027
6		**Testing Program**		
	a	ASR Pilot Test Pump & Pipe setup	Jun, 2026	Jul, 2026
	b	ASR Pumping Equipment Rental 6 Months	Jun, 2026	Dec, 2026
	c	ASR Testing program, analytics and hydrogeology	Jun, 2026	Dec, 2026

Smillie Well Replacement ASR Well Project

		Tasks	Start Date	Completion
1		**Grant Administration**		
	a	Grant Management and Invoicing	Sep, 2025	Jul, 2027
	b	Grant Close Out	Jun, 2027	Oct, 2027
2		**Project Management**		
	a	Program Oversight	Dec, 2024	Apr, 2027
	b	Project Management	Dec, 2024	Apr, 2027
	c	Outreach	Dec, 2024	Mar, 2027
3		**Permits & Environmental**		
	a	CEQA/NEPA analysis	Nov, 2024	Mar, 2025
	b	SBCO Coastal Development Permit	Feb, 2025	Jul, 2025
	c	RWQCB ASR General Permit Pilot Test	Jul, 2025	Dec, 2025
	d	RWQCB ASR General Permit	Feb, 2027	May, 2027
	e	Caltrans Access Permit	Oct, 2025	Dec, 2025
	f	Drinking Water Permit Amendment	Apr, 2027	May, 2027
4		**Engineering and Design**		
	a	Smillie Well Replacement Basis of Design Report	Jul, 2022	Sep, 2022
	b	Smillie Well Replacement Well Construction Design	Aug, 2024	Sep, 2024
	c	Smillie Well #2 Testing Program memo	Aug, 2024	Sep, 2024
	d	Smillie Well Replacement Site Preliminary Design	Dec, 2024	Jan, 2025
	e	Smillie Well Replacement Site Final Design	Jun, 2025	Nov, 2025
5		**Construction**		
	a	Bid out Well drilling	Jan, 2026	Mar, 2026
	b	Drill Replacement Well Construction	Mar, 2026	May, 2026
	c	Conversion of Existing Well	Mar, 2026	Mar, 2026
	d	Hydrologeologic and Construction Management Support	Mar, 2026	May, 2026
	e	Bid out Site Construction	Apr, 2026	May, 2026
	f	Site Construction	Jun, 2026	Jan, 2027
	g	Engineering support & Construction Management	Jun, 2026	Jan, 2027
	h	Startup/comission	Feb, 2027	Apr, 2027
6		**Testing Program**		
	a	ASR Pilot Test Pump & Pipe setup	Jun, 2026	Jul, 2026
	b	ASR Pumping Equipment Rental 6 Months	Jun, 2026	Dec, 2026
	c	ASR Testing program, analytics and hydrogeology	Jun, 2026	Dec, 2026



Montecito Groundwater Basin
Groundwater Sustainability Agency

Grayford Payne
Deputy Commissioner
Policy, Administration and Budget
Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Mr. Payne,

I am writing to express my strong support for Carpinteria Valley Water District's (CVWD) grant application to the U.S. Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects. The proposed project involves the replacement of Smillie Well #1 with a new Aquifer Storage and Recovery (ASR) capable well, which is a critical step toward securing a drought-resilient water supply for municipal and agricultural water users in Carpinteria Valley and surrounding communities.

Southern California faces ongoing water supply challenges exacerbated by climate change, population growth, persistent droughts, and the overdraft of water resources. The replacement of the aging Smillie Well, originally constructed in 1975, is essential. Analysis of the well has revealed poor design and age-related degradation as the primary causes of its greatly reduced yield. Hydrologic studies indicate that with modern design and construction, the well's production capacity could be up to four times greater than its current output.

The installation of a new ASR capable well would increase CVWD's groundwater production capacity by 27% and provide CVWD with approximately 500 acre-feet per year (AFY) of groundwater injection capacity. Additionally, the location is ideal for ASR due to the low groundwater levels in the area compared to historic levels, making it a favorable site for injecting and storing surface water for future drought periods.

ASR is a vital tool for sustainable groundwater management and water supply reliability. With the new well, CVWD will be able to store excess water during wet years and utilize it during droughts. While the project will initially be operated by CVWD, it may also be used on behalf of neighboring water agencies to store their excess surface water.

This project will significantly improve the long-term dependability of water supplies in the Carpinteria Valley and potentially surrounding communities. For these reasons, I respectfully urge you to give this application your full and fair consideration.

Thank you for your attention to this important matter.

Sincerely,

Nicholas Turner
General Manager
Montecito Groundwater Basin
Groundwater Sustainability Agency

RELIABLE SINCE 1921

583 San Ysidro Road
Santa Barbara, CA 93108-2124

Phone: 805.969.2271
Fax: 805.969.7261
Email: info@montecitowater.com
Web: montecitowater.com

Grayford Payne
Deputy Commissioner
Policy, Administration and Budget
Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Mr. Payne,

I am writing to express my strong support for Carpinteria Valley Water District's (CVWD) grant application to the U.S. Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects. The proposed project involves the replacement of Smillie Well #1 with a new Aquifer Storage and Recovery (ASR) capable well, which is a critical step toward securing a drought-resilient water supply for municipal and agricultural water users in Carpinteria Valley and surrounding communities.

Southern California faces ongoing water supply challenges exacerbated by climate change, population growth, persistent droughts, and the overdraft of water resources. The replacement of the aging Smillie Well, originally constructed in 1975, is essential. Analysis of the well has revealed poor design and age-related degradation as the primary causes of its greatly reduced yield. Hydrologic studies indicate that with modern design and construction, the well's production capacity could be up to four times greater than its current output.

The installation of a new ASR capable well would increase CVWD's groundwater production capacity by 27% and provide CVWD with approximately 500 acre-feet per year (AFY) of groundwater injection capacity. Additionally, the location is ideal for ASR due to the low groundwater levels in the area compared to historic levels, making it a favorable site for injecting and storing surface water for future drought periods.

ASR is a vital tool for sustainable groundwater management and water supply reliability. With the new well, CVWD will be able to store excess water during wet years and utilize it during droughts. While the project will initially be operated by CVWD, it may also be used on behalf of neighboring water agencies to store their excess surface water.

This project will significantly improve the long-term dependability of water supplies in the Carpinteria Valley and potentially surrounding communities. For these reasons, I respectfully urge you to give this application your full and fair consideration.

Thank you for your attention to this important matter.

Sincerely,

Nicholas Turner
General Manager
Montecito Water District

CASITAS
Municipal Water District

Grayford Payne
Deputy Commissioner
Policy, Administration and Budget
Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Mr. Payne,

I am writing to express my strong support for Carpinteria Valley Water District's (CVWD) grant application to the U.S. Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects. The proposed project involves the replacement of Smillie Well #1 with a new Aquifer Storage and Recovery (ASR) capable well, which is a critical step toward securing a drought-resilient water supply for municipal and agricultural water users in Carpinteria Valley and surrounding communities.

Southern California faces ongoing water supply challenges exacerbated by climate change, population growth, persistent droughts, and the overdraft of water resources. The replacement of the aging Smillie Well, originally constructed in 1975, is essential. Analysis of the well has revealed poor design and age-related degradation as the primary causes of its greatly reduced yield. Hydrologic studies indicate that with modern design and construction, the well's production capacity could be up to four times greater than its current output.

The installation of a new ASR capable well would increase CVWD's groundwater production capacity by 27% and provide CVWD with approximately 500 acre-feet per year (AFY) of groundwater injection capacity. Additionally, the location is ideal for ASR due to the low groundwater levels in the area compared to historic levels, making it a favorable site for injecting and storing surface water for future drought periods.

ASR is a vital tool for sustainable groundwater management and water supply reliability. With the new well, CVWD will be able to store excess water during wet years and utilize it during droughts. While the project will initially be operated by CVWD, it may also be used on behalf of neighboring water agencies to store their excess surface water.

This project will significantly improve the long-term dependability of water supplies in the Carpinteria Valley and potentially surrounding communities. For these reasons, I respectfully urge you to give this application your full and fair consideration.

Thank you for your attention to this important matter.

Sincerely,

Michael L. Flood

General Manager - Casitas Municipal Water District

1055 Ventura Ave. • Oak View, CA 93022 • (805) 649-2251 • Fax (805) 649-3001 • www.casitaswater.org

County of Santa Barbara Public Works Department
Water Resources Division
Santa Barbara County Water Agency - Project Clean Water
130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101
(805) 568-3440
https://www.countyofsb.org/189/Water-Resources

Chris Sneddon
Director

Walter Rubalcava
Deputy Director

October 2, 2024

Grayford Payne
Deputy Commissioner
Policy, Administration and Budget
Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Mr. Payne,

I am writing to express my strong support for Carpinteria Valley Water District's (CVWD) grant application to the U.S. Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects. The proposed project involves the replacement of Smillie Well #1 with a new Aquifer Storage and Recovery (ASR) capable well, which is a critical step toward securing a drought-resilient water supply for municipal and agricultural water users in Carpinteria Valley and surrounding communities.

Southern California faces ongoing water supply challenges exacerbated by climate change, population growth, persistent droughts, and the overdraft of water resources. The replacement of the aging Smillie Well, originally constructed in 1975, is essential. Analysis of the well has revealed poor design and age-related degradation as the primary causes of its greatly reduced yield. Hydrologic studies indicate that with modern design and construction, the well's production capacity could be up to four times greater than its current output.

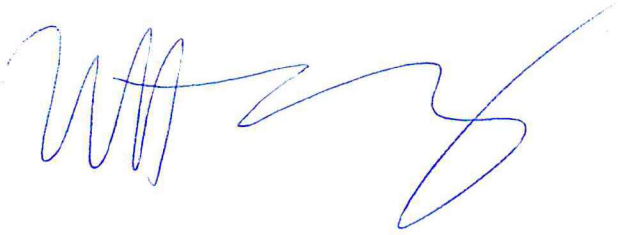
The installation of a new ASR capable well would increase CVWD's groundwater production capacity by 27% and provide CVWD with approximately 500 acre-feet per year (AFY) of groundwater injection capacity. Additionally, the location is ideal for ASR due to the low groundwater levels in the area compared to historic levels, making it a favorable site for injecting and storing surface water for future drought periods.

ASR is a vital tool for sustainable groundwater management and water supply reliability. With the new well, CVWD will be able to store excess water during wet years and utilize it during droughts. While the project will initially be operated by CVWD, it may also be used on behalf of neighboring water agencies to store their excess surface water.

This project will significantly improve the long-term dependability of water supplies in the Carpinteria Valley and potentially surrounding communities. For these reasons, I respectfully urge you to give this application your full and fair consideration.

Thank you for your attention to this important matter.

Sincerely,



Matt Young
Santa Barbara County Water Agency Manager

Grayford Payne
Deputy Commissioner
Policy, Administration and Budget
Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Mr. Payne,

I am writing to express my strong support for Carpinteria Valley Water District's (CVWD) grant application to the U.S. Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects. The proposed project involves the replacement of Smillie Well #1 with a new Aquifer Storage and Recovery (ASR) capable well, which is a critical step toward securing a drought-resilient water supply for municipal and agricultural water users in Carpinteria Valley and surrounding communities.

The installation of a new ASR capable well would increase CVWD's groundwater production capacity by 27% and provide CVWD with approximately 500 acre-feet per year (AFY) of groundwater injection capacity. Additionally, the location is ideal for ASR due to the low groundwater levels in the area compared to historic levels, making it a favorable site for injecting and storing surface water for future drought periods.

ASR is a vital tool for sustainable groundwater management and water supply reliability. With the new well, CVWD will be able to store excess water during wet years and utilize it during droughts. While the project will initially be operated by CVWD, it may also be used on behalf of neighboring water agencies to store their excess surface water.

This project will significantly improve the long-term dependability of water supplies in the Carpinteria Valley and potentially surrounding communities. For these reasons, I respectfully urge you to give this application your full and fair consideration.

Thank you for your attention to this important matter.

Sincerely,

Signed by:
Case Van Wingerden
FFD90590DA5143B...

Case Van Wingerden, Carpinteria Grower

CITY of CARPINTERIA, CALIFORNIA

October 3, 2024

Grayford Payne
Deputy Commissioner
Policy, Administration and Budget
Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Mr. Payne,

I am writing to express my support for Carpinteria Valley Water District's (CVWD) grant application to the U.S. Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects. The proposed project involves the replacement of Smillie Well #1 with a new Aquifer Storage and Recovery (ASR) capable well, which is a critical step toward securing a drought-resilient water supply for municipal and agricultural water users in Carpinteria Valley and surrounding communities.

California faces ongoing water supply challenges exacerbated by climate change, population growth, persistent droughts, and the overdraft of water resources. Analysis of the Smilie Well, originally constructed in 1975, has revealed poor design and age-related degradation as the primary causes of its greatly reduced yield. Hydrologic studies indicate that with modern design and construction, the well's production capacity could be up to four times greater than its current output.

The installation of a new ASR capable well would increase CVWD's groundwater production capacity by 27% and provide CVWD with approximately 500 acre-feet per year (AFY) of groundwater injection capacity. Additionally, the location is ideal for ASR due to the low groundwater levels in the area compared to historic levels, making it a favorable site for injecting and storing surface water for future drought periods.

With the new well, CVWD will be able to store excess water during wet years and utilize it during droughts. This project will significantly improve the long-term dependability of water supplies in the Carpinteria Valley and potentially surrounding communities. For these reasons, I respectfully urge you to give this application your full and fair consideration.

Sincerely,

Michael Ramirez, City Manager

5775 CARPINTERIA AVENUE • CARPINTERIA, CA 93013-2603
(805) 684-5405 • FAX (805) 684-5304
www.CarpinteriaCA.gov

CARPINTERIA GSA
GROUNDWATER SUSTAINABILITY AGENCY

Grayford Payne
Deputy Commissioner
Policy, Administration and Budget
Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Dear Mr. Payne,

I am writing to express my strong support for Carpinteria Valley Water District's (CVWD) grant application to the U.S. Bureau of Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects. The proposed project involves the replacement of Smillie Well #1 with a new Aquifer Storage and Recovery (ASR) capable well, which is a critical step toward securing a drought-resilient water supply for municipal and agricultural water users in Carpinteria Valley and surrounding communities.

Southern California faces ongoing water supply challenges exacerbated by climate change, population growth, persistent droughts, and the overdraft of water resources. The replacement of the aging Smillie Well, originally constructed in 1975, is essential. Analysis of the well has revealed poor design and age-related degradation as the primary causes of its greatly reduced yield. Hydrologic studies indicate that with modern design and construction, the well's production capacity could be up to four times greater than its current output.

The installation of a new ASR capable well would increase CVWD's groundwater production capacity by 27% and provide CVWD with approximately 500 acre-feet per year (AFY) of groundwater injection capacity. Additionally, the location is ideal for ASR due to the low groundwater levels in the area compared to historic levels, making it a favorable site for injecting and storing surface water for future drought periods.

ASR is a vital tool for sustainable groundwater management and water supply reliability. With the new well, CVWD will be able to store excess water during wet years and utilize it during droughts. While the project will initially be operated by CVWD, it may also be used on behalf of neighboring water agencies to store their excess surface water.

This project will significantly improve the long-term dependability of water supplies in the Carpinteria Valley and potentially surrounding communities. For these reasons, I respectfully urge you to give this application your full and fair consideration.

Thank you for your attention to this important matter.

Sincerely,

DocuSigned by:
Robert McDonald
8859568B5F65424...

Executive Director, Robert McDonald

Budget Narrative

Submission of a budget narrative is required. The budget narrative provides a discussion of, or explanation for, items included in Section B of the SF-424A. If selected for award, successful Applicants will need to submit detailed supporting documentation for all budgeted costs. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. The narrative should describe the basis for and purpose of all cost elements. Please refer to Attachment A Budget Detail & Narrative Template and Attachment B Budget Narrative Guidance when developing your Project Budget.

a. Personnel. The District will staff the Project with four positions, each with specific roles. The following individuals will fill these roles:

- District Engineer will be the Program Lead/Manager (P1)
- Associate Engineer will be the Project Manager (P2)
- Accountant will be the Grant Manager (P3)
- Public Outreach Coordinator will be the Public Outreach Coordinator (P4)

The Program Lead/Manager, Brian King, will manage the overall program through oversight and direction, consult on technical issues with support staff, provide quality assurance reviews of work products from staff and consultants, and serve as a liaison between staff and upper management.

The Project Manager, Spencer Seale, will provide day-to-day support for Project activities, review schedules, coordinate consultants and contractors, oversee work during design and construction, keep the program manager informed of potential cost or schedule changes, review invoices, attend meetings, and communicate with the public, County staff, DDW, and Caltrans permitting staff.

The Grant Manager, Emily Schiele, will review invoices for compliance, monitor budgets, create invoices for the grant program, communicate with the WaterSMART grant manager, and close out the grant when the Project is complete.

The Public Outreach Coordinator, Rhonda Guitierrez, will produce outreach materials, provide updates on social media, issue press releases, distribute public notices, update the website, write news articles, and coordinate public meetings for the Project.

The estimated cost for each employee is based wages with a three percent escalation each year for the Project. Wages for each position were determined based on actual wages on the date of this application plus a cost of living of 4% adjustment to be applied at the end of 2024. Fringe benefits are discussed in a separate section but are included in the hourly rates show here:

District Personnel Rates			
Position	**2025**	**2026**	**2027**
District Engineer	$ 130.78	$ 134.71	$ 138.75
Assoc Engineer	$ 81.98	$ 84.44	$ 86.97
Accountant	$ 70.71	$ 72.83	$ 75.01
Public Outreach Spec	$ 72.46	$ 74.63	$ 76.87

The hours attributed to each position are shown in the table below:

Personnel Hours				
Year	**P1**	**P2**	**P3**	**P4**
2025	208	832	41.6	104
2026	520	1040	312	208
2027	52	260	130	26
Total	780	2132	483.6	338

Hours by task are shown in the table below.

Hours by Task				
Task	P1	P2	P3	P4
1.a			386.88	
1.b			96.72	
2.a	760			
2.b		2112		
2.c				328
5.a	10	10		5
5.e	10	10		5

Total estimated cost for the personnel category including fringe benefits is **$343,576.90**

b. Fringe Benefits. A fringe benefit of 35% of base wage was applied to the rate in calculating personnel costs. Fringe benefits based on average cost of the four staff positions benefits including retirement, healthcare and paid time off.

c. Travel. There are no travel expenses incurred as part of the Project. Therefore, travel costs are not part of the requested funds.

d. Equipment. Equipment costs for the Project are incorporated into the Contractor costs under the Contractual and Construction sections of the Budget Proposal. Therefore, equipment costs are not part of this request.

e. Supplies. Supplies and materials costs for the Project are incorporated into the Contractor costs under the Contractual and Construction sections of the Budget Proposal. Therefore, supplies and materials costs are not part of this request.

f. Contractual. Tasks 3.a-d, 4.c, and 6.a-c are not directly related to construction and have been placed in this section. (Refer to schedule in Attachment A for task breakdown).

For Task 3.a (CEQA/NEPA analysis), Task 3.b (SB County CUP/CDP), Task 3.c (Pilot ASR permit), and Task 3.d (Long-Term ASR permit), the District will use consultants to complete the work. The cost of this work was estimated by consultants who typically perform this type of work for the District.

Task 4.c, the ASR Testing program document, was completed by Pueblo Water Resources (PWR) at a cost of approximately $10,000.

Tasks 6.a and 6.b represent the estimated contractor costs for the well driller to set up and rent a test pump for six months for the purpose of ASR testing, which will occur in tandem with site development. These costs were estimated by PWR, a consulting hydrogeologist with 25 years of experience working in the area.

Task 6.c covers the time and direct costs, such as lab analytics and coordination with the RWQCB on the testing program, that PWR anticipates will be necessary to complete the ASR Pilot testing. The associated costs are outlined below:

ASR Pilot Testing		
6.a	ASR Pilot Test Pump & Pipe setup	$100,000.00
6.b	ASR Pumping Equipment Rental 6 Months	$ 90,000.00
6.c	PWR- ASR Pilot Test Implementation, Data Analysis and Reporting	$250,000.00
6.c	Outside Lab fees	$ 75,000.00

Total Contractual Budget is **$641,000**

g. Construction. CVWD will procure contractors for Project construction. CVWD has established written procurement policies and procedures that are consistently applied when securing the services of a consultant for professional services. CVWD utilizes established procedures when soliciting bids from contractors that are consistently applied and in compliance with California public contract and procurement regulations and laws for public agencies. All procurement transactions for services and contracts are conducted in a manner to provide to the maximum extent practical, open, and free competition.

Well and Site Design

The District will contract for design services to complete engineering documents to construct the Project. The Basis of Design Report for the well construction was completed in 2022 and is not part of the cost of this Project. The well construction bid documents are 90% complete. The preliminary site design will begin in December of 2024 and final engineering documents for the site design are anticipated in September 2025. These are covered under Budget Tasks 4.a,b,d,&e Thes cost were estimated based proposal from consultants. The total eligible costs are estimated to be $448,000.

Well Construction Hydrogeologic and Construction Management

The project hydrogeologist, Pueblo Water Resources, will by on-site construction management during drilling of the new Smillie well. The budget item is based on Pueblo's fee estimate - $204,152.

Startup and Commissioning efforts are estimated at 2% of construction cost - $53,415.

Site Construction Engineering Services and Construction Management

The following services will be necessary during construction: Engineering services, which will include tasks such as construction meetings, submittal review, responding to requests

for information, managing change orders and design clarifications, conducting field visits, performing the final inspection and punch list, and preparing record drawings. Construction management will involve Project setup, contract administration, submittal review processing, and overseeing startup, commissioning, and Project closeout. This work will be contracted by the District as well. These are tasks 5.d and 5.g in the Project budget. These costs were calculated as 15% of construction contract costs ($356,100).

Well Drilling Construction Contractor

There are two contracts anticipated for the Project. The first will be a well drilling contractor. This contractor will drill Smillie #2, case & screen the bore hole, gravel pack and seal the annular space and develop the well using appropriate well development methods. The estimated cost for this work is included in the BOD report. This contractor will also construct temporary piping and valving along with setting up a test pump with electrical gear to run the ASR pilot test. This cost Tasks 6.a & 6.b is not include in the Constrution section because it is not directly related to the construction of the Project. Tasks 6.a & 6.b are included in the Contractual section. The contractor estimate is $1,319,010.

Well Equipping Construction Contractor

The second contractor will be responsible to demolish existing site, grade and prepare site, develop site access, convert Smillie #1 to a monitoring well, install the new well pump and motor in Smillie #2, procure and install the electrical equipment, build SCADA system, construct disinfection system, install piping and valving, install meters, pressure sensors, chlorine analyzers and other instruments, integrate systems together, provide buildings, enclosures and drainage and concrete flat work at the site. The following is a cost estimate of this work, which totals $2,374,000:

Site Construction			
		Working days	Cost
Contruction Daily Rate (4) workers 8hr/day @ $200/hr	$6,400.00	160	$ 1,024,000.00
SS Well Pump	Equipment		$ 500,000.00
200 HP Well Motor	Equipment		$ 100,000.00
Variable Frequency Drive (VFD)	Equipment		$ 100,000.00
Switch Gear/MCC	Equipment		$ 150,000.00
Scada Equipment	Equipment		$ 60,000.00
Treatment Equipment (chlorine)	Material		$ 80,000.00
Pipes, Valves andinstruments	Material		$ 60,000.00
Misc, Concrete, drainage, electrical service,buildings	Material		$ 300,000.00

The total estimated construction category cost is $**4,754,677**

h. Other Direct Costs. Permit fees for the Caltrans Encroachment Permit, CDP CUP Permit, DDW Permit and ASR permits. Each Permit fee is typically between $2,000 and $20,000 depending on the complexity of the Project. Total cost for this category is **$34,000**.

i. Total Direct Costs. The total direct cost is **$5,773,253**.

j. Indirect Costs. The District will apply a 10% administrative cost to all personnel work listed in the budget for the Project. CVWD does not have a Federal negotiated indirect cost rate agreement. Total cost for this category is the maximum value of **$25,000**.

Total Costs. The total Project cost is **$5,798,523.** The federal cost share (50%) is **$2,899,126.70**. The applicant (District), non-federal (50%) is **$2,899,126.70**.

Required Permits or Approvals

You should state in the application whether any permits or approvals are necessary and explain the plan for obtaining such permits or approvals.

California Environmental Quality Act (CEQA)

The proposed Project does not qualify for a categorical exemption from the California Environmental Quality Act (CEQA) because the well would be located at a new site at a sensitive location (adjacent to Carpinteria Creek). Significant impacts may include nighttime drilling noise, encroachment into the riparian habitat of Carpinteria Creek and disturbance of archeological resources. Therefore, the District will prepare an Initial Study (IS) and Mitigated Negative Declaration (MND). The IS and MND will be prepared based on existing project descriptions and will include a cultural resources record search, a Phase I archaeological field survey, a biological survey and baseline noise measurements. The District will also prepare and distribute a notice of Intent and the Public Draft IS/MND to properties located within 300 feet of the Project site.

National Environmental Policy Act (NEPA)

Environmental review under NEPA may be required if there is a federal nexus established from the funding of the Project through a federal program including WaterSmart. If NEPA is required the District will utilize work done under CEQA to complete the NEPA review.

SBCO Coastal Development Permit

The Smillie Well is in the Coastal Zone and will require a coastal development permit (CDP) administered under the Santa Barbara County local coastal plan. The permit will have conditions for the development of the site including analysis of construction impacts and operational impacts and potential mitigations. The processing of this permit will utilize the preliminary site design and the CEQA analysis for an understanding of the Project.

SBCO Conditional Use Permit

The Santa Barbara County Planning and Development may require a conditional use permit (CUP) to operate the facility since the site is located in an agriculture zone. If so, the CUP is typically processed concurrently with the CDP.

Santa Barbara County Environmental Health Services (SBEHS) Agency Monitoring Well Permit

A permit will be required for the conversion of Smillie #1 into a monitoring well, and a permit for the construction of the replacement well will also be required. Although these are ministerial permits, the District will contact SBEHS prior to commencement of the preparation of the specifications for the Project to ascertain whether or not this agency will have any questions or concerns related to the Project, or whether or not any special conditions may be applied.

RWQCB ASR General Permit Pilot Test

The Regional Water Quality Control Board (RWQCB) will require an ASR discharge permit under the General ASR permit to conduct ASR pilot testing to determine whether the ASR operations will have any negative impacts on the targeted aquifer. This permit will be in force for approximately 2 years. Once all necessary data is collected for the pilot testing the RWQCB will review and determine long-term requirement for the operations of the ASR

RWQCB ASR General Permit for long-term operations

RWQCB will require an ASR discharge permit under the General ASR permit to conduct ASR operations for the long term. The RWQCB will use pilot test data to inform the long-term permit.

RWQCB Drinking Water System Discharges Permit: Planned Discharges

Planned discharges resulting from well drilling will use the Water System General Permit, which CVWD is enrolled. Construction related discharge will be handled through a Stormwater Pollution Prevention Plan (SWPPP).

Caltrans Encroachment Permit

Smillie Well site is accessed off of State Highway 192. With the Smillie Well site changing, a redesign of the access to the site may be necessary which will trigger a Caltrans Encroachment permit. If necessary, the encroachment permit will be applied for after the preliminary site design is complete.

Drinking Water Permit Amendment

An amendment to the District's existing water system permit from State Board Department of Drinking Water (DDW) will be required to remove Smillie #1 from the system permit and add Smillie #2. This will require an updated Drinking Water Source Assessment and Protection (DWSAP) analysis. DDW will review the updated DWSAP and issue new drinking water permit with appropriate monitoring and reporting requirements for the Smillie Well #2.

Environmental and Cultural Resources Compliance

Answer the questions from Section H.1. Environmental and Cultural Resource Considerations in this section.

Section H.1. Environmental and Cultural Resource Considerations

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should address the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should address:

• Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts, as well as any other past, present, or reasonably foreseeable future developments that you are aware of that will affect these same resources in the surrounding area.

The District anticipates only minor impacts to the surrounding environment. The Project includes minor earth-disturbing work to provide a level area for the drill rig and associated equipment. To minimize dust generation from the earth-disturbing work, the Project will include watering of the work area. Vegetation will be cleared to provide space for the drill rig, shaker, and pipe trailer. However, the vegetation to be removed is non-native and provides only minimal habitat for wildlife. In addition, the Project will seek to minimize and flag the work area to avoid impacts to adjacent areas. The Project will implement standard BMPs for construction stormwater to avoid impacts to water quality (including the nearby Carpinteria Creek). There are no other active or planned projects in the vicinity of the Smillie Well (Pueblo 2024).

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

There are no listed or candidate threatened or endangered species in the Project area. There is no designated critical habitat in the Project area. Therefore, no impacts to candidate species, listed species, or critical habitat would occur from the Project (Pueblo 2024).

• Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed project may have.

Carpinteria Creek, which qualifies as a Waters of the United States, is adjacent to the Project. However, the Project would have no impact on such waters. No physical

disturbance of the creeks is proposed. Fluids produced during airlifting and pumping development that meet the requisite criteria may be discharged to Carpinteria Creek in accordance with the District's existing Statewide NPDES Permit for Drinking Water System Discharges (Order WQ 2014-0194-DWQ, General Order No. CAG140001). Fluids produced during the early stages of airlifting development shall be transferred to tankage at the offsite staging area (Pueblo BoD 2022).

• When was the water delivery system constructed?

The existing well was constructed in 1975. The well was connected to the water delivery system at the same time. The conveyance system was built in 1958.

• 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 Project will not modify any existing irrigation systems.

Disclosures and Statements

Overlap or Duplication of Effort Statement

Applicants should provide a statement that addresses if there is any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. If any overlap exists, applicants must provide a description of the overlap in their application for review. Applicants should also state if the proposal submitted for consideration under this program does or does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal. If such a circumstance exists, applicants must detail when the other duplicative proposal(s) were submitted, to whom (Agency name and Financial Assistance program), and when funding decisions are expected to be announced. If at any time a proposal is awarded funds that would be duplicative of the funding requested from Reclamation, applicants must notify the NOFO point of contact or the Program Coordinator immediately.

There is no overlap between the proposed Project and any other active or anticipated proposals. The proposal does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal. The District may apply for funding from the State of California for the Project in the future but no applications have been submitted.

Conflict of Interest Disclosure Statement

Per 2 CFR §1402.112, "Financial Assistance Interior Regulation" applicants should state in the application if any actual or potential conflict of interest exists at the time of submission. Submission of a conflict-of-interest disclosure or certification statement is mandatory prior to issue of an award.

The District is not aware of any conflicts of interest at this time.

Uniform Audit Reporting Statement

The District did not expend $750,000 or more in Federal award funds in the most recently closed fiscal year. The District did not submit a Single Audit report for the most recently closed fiscal year.

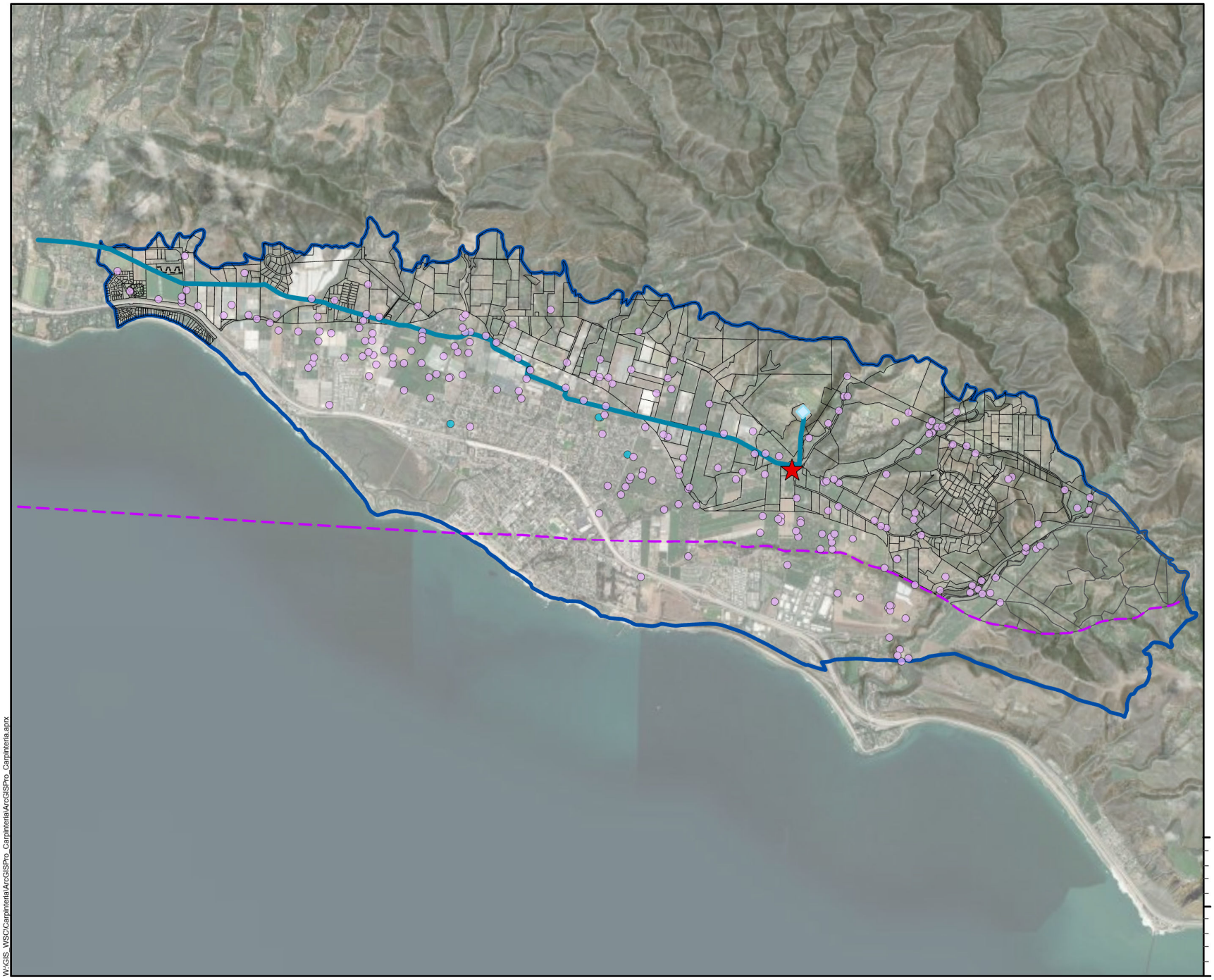
Certification Regarding Lobbying

The District's certified statements in 43 CFR § 18 are uploaded as required.

Disclosure of Lobbying Activities

The Disclosure of Lobby Activities form is not applicable because the District has not made or agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of

Congress, or an employee of a Member of Congress in connection with a covered Federal action.



W:\GIS_WSC\Carpinteria\ArcGISPro_Carpinteria\ArcGISPro_Carpinteria.aprx

Prepared by:

WSC

N

1:58,880

0 0.25 0.5 1 Mi

0 1,500 3,000 6,000 US Feet

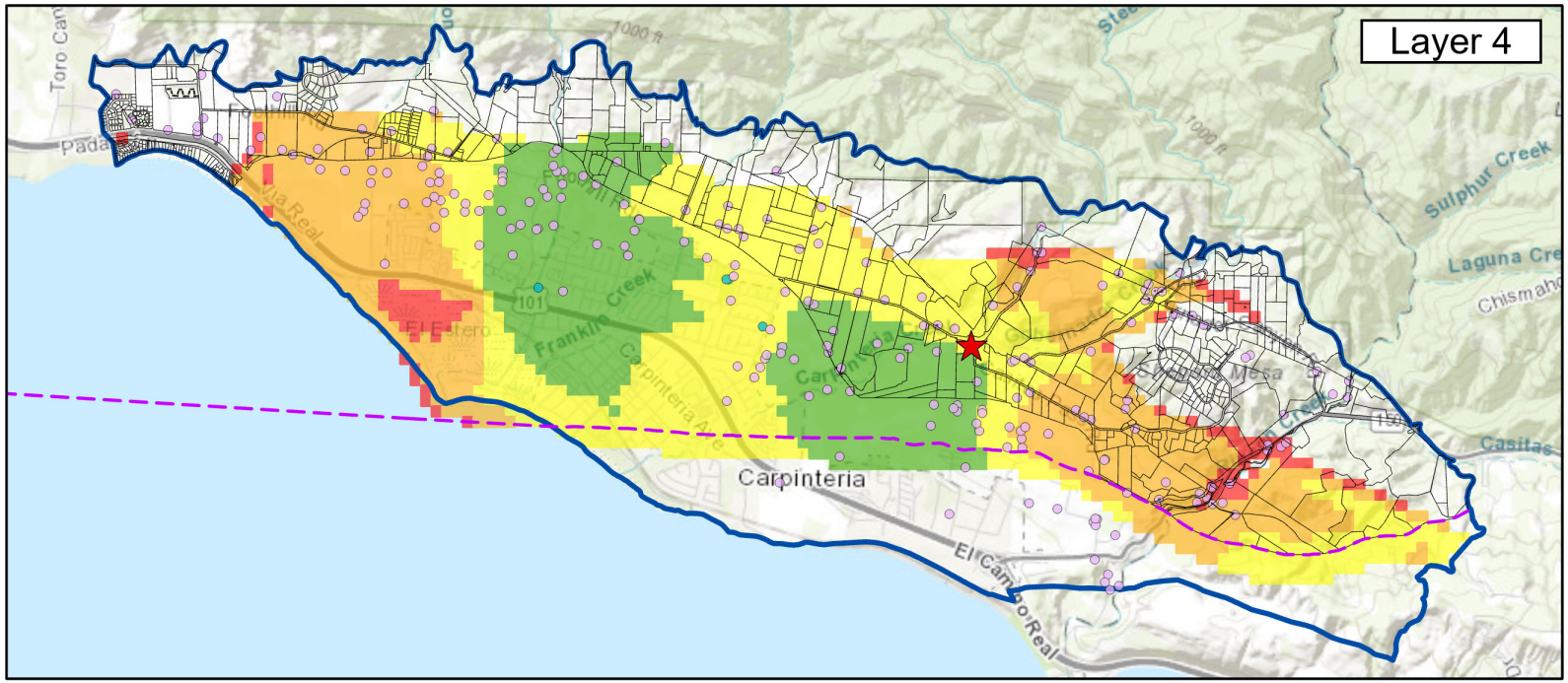
References:

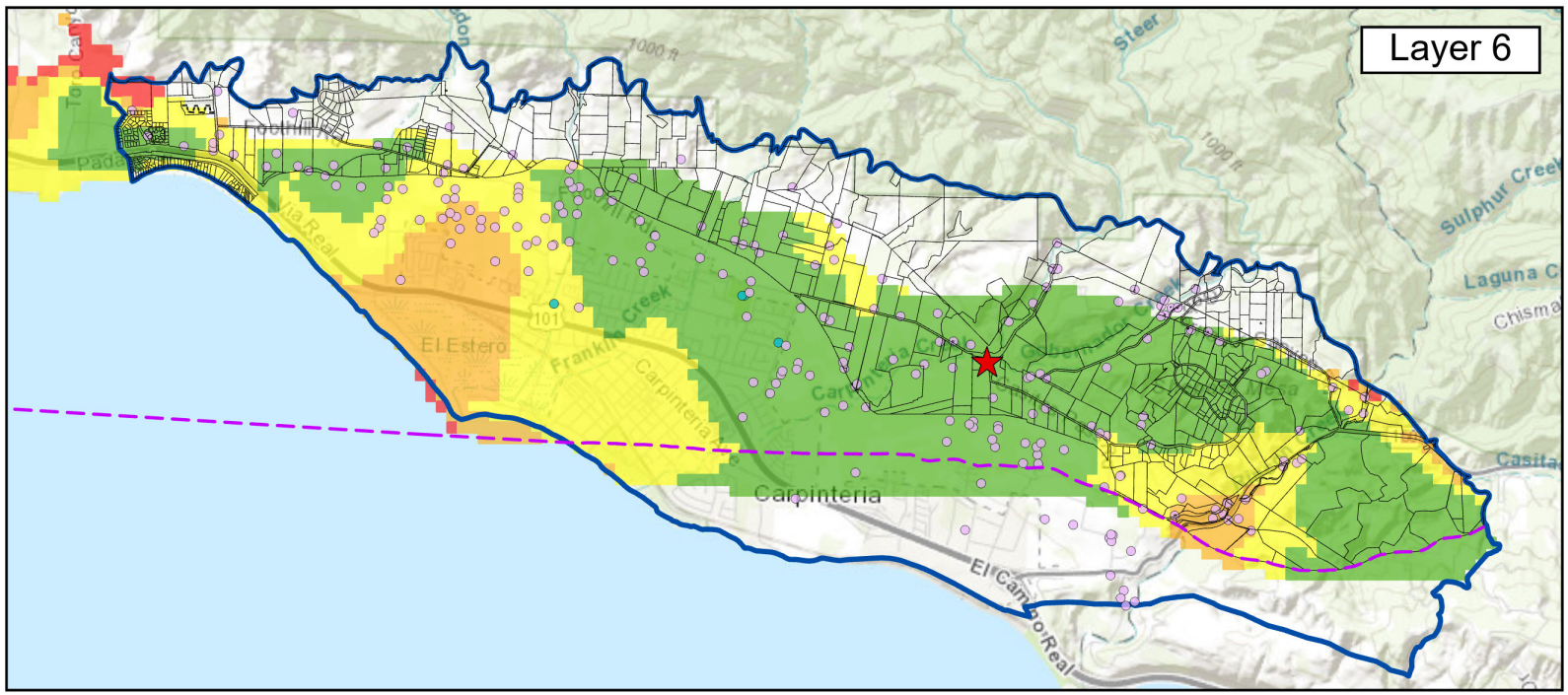
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983

Prepared for:

Carpinteria Valley Water District

Figure 1. Location Map





Legend

Transmissivity x Depth to Water
(ft^2/day x ft)

- ≥ 50,000
- 5,000 - 50,000
- 500 - 5,000
- 0 - 500

Increasing Favorability

Carpinteria Well

- Municipal
- Private

Parcel

Rincon Creek Fault

Carpinteria Groundwater Basin

Prepared by:

WSC

N

1:65,000

0 0.25 0.5 1 Mi

0 1,500 3,000 6,000 US Feet

References:

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983

Notes:

1. Model cells with negative transmissivity or depth to water values are not shown.

Carpinteria Valley Water District

Figure 2. Transmissivity x Depth to Water Normal Groundwater Conditions

Executive Summary

ES-1 Introduction

The Sustainable Groundwater Management Act (SGMA), effective as of January of 2015, created a new statewide framework for managing California's groundwater at the local level. SGMA empowers local agencies to form groundwater sustainability agencies (GSAs) tasked with developing Groundwater Sustainability Plans (GSPs or Plans), such as this document. A GSP is a detailed road map for maintaining or bringing a designated groundwater basin into a sustainable condition within the next 20 years. When a basin is managed sustainably, groundwater conditions are maintained in a manner that avoids undesirable results caused by groundwater conditions occurring throughout the basin, such as chronic lowering of groundwater levels, or significant and unreasonable depletion of supply, reduction of groundwater storage, degraded water quality, land subsidence, or depletions of interconnected surface waters.

In his signing statement, Governor Brown emphasized that "groundwater management in California is best accomplished locally." The Carpinteria Groundwater Basin (Basin) Plan was developed by a single GSA formed by the Carpinteria Valley Water District (CVWD), the City of Carpinteria, the Santa Barbara County Water Agency (Water Agency), and the County of Ventura. On January 31, 2020, the GSA entered into a Joint Exercise of Powers Agreement (JPA) to form the Carpinteria GSA for the purpose of managing groundwater and coordinating preparation of a single GSP for the Basin. The JPA outlines the powers of the GSA and describes the Board of Directors composition, decision making, and other terms. The Carpinteria GSA Board of Directors adopted Resolution 0001 on February 7, 2020, declaring its intent to designate itself to California Department of Water Resources (DWR) as the recognized GSA for the Basin, and the required documentation was submitted to DWR in February 2020.

The Basin was originally designated as a low-priority basin by DWR. In 2019, DWR conducted a basin reprioritization process that reclassified the Basin as a high-priority basin, resulting in the preparation of this Plan pursuant to Section 10720, et. seq., of the State Water Code as required by SGMA.

This executive summary fulfills the Plan requirement for the Carpinteria GSA. It describes the Basin, develops quantifiable management objectives that account for the interests of the Basin's beneficial groundwater uses and users, and identifies a group of projects and management actions that will allow the Basin to achieve sustainability within 20 years of plan adoption.

ES-1.1 Plan Area

The jurisdictional boundaries for the Plan cover the entire Carpinteria Groundwater Basin identified by DWR as Basin No. 3-018 (DWR, 2004, 2023) as shown in Figure ES-1. This 7,801-acre (12.7 square mile) coastal basin consists of a low-lying alluvial plain that includes portions of County of Santa Barbara and County of Ventura and the incorporated City of Carpinteria. In unincorporated areas under county jurisdiction, the County of Santa Barbara and the County of Ventura are responsible for comprehensive long-range planning, permitting, and development review. The Santa Barbara Flood Control and Water Conservation District has jurisdiction over certain flood control facilities. The City of Carpinteria has land management authority within its boundaries, and municipal and agricultural water service within the City is provided by CVWD. The U.S. Bureau of Reclamation has jurisdiction over the Carpinteria Regulating Reservoir. Lands under state jurisdiction include Carpinteria State Beach (California Department of Parks and Recreation), the beds of tidal waters (California State Lands Commission), and the Carpinteria Salt Marsh Reserve (University of California Natural Reserve System).

CVWD's service area covers all of the Basin within County of Santa Barbara with the exception of a small area on the northeast edge of the District boundary, and the service area also extends beyond the Basin boundaries to the north and includes a small portion to the southeast of the Basin on the west side of Rincon Point. CVWD has water management and supply authority within its service area. The County of Ventura portion of the Basin is located within the service area of Casitas Municipal Water District, which has water management and supply authority within its service area.

The surface water bodies in the plan area include Carpinteria, Franklin, Gobernador, Rincon, Toro Canyon, and Santa Monica Creeks. U.S. Highway 101 forms the major transportation corridor running from northwest to southeast through the Basin. Average annual precipitation within the Basin ranges from 15 to 19 inches.

The Basin's eastern boundary is defined by the extent of the Casitas Formation mapped at the surface near Laguna Ridge in Ventura County. The Pacific Ocean forms its southern boundary. An adjustment to the western boundary was approved by DWR in 2018 following an application submitted by the Montecito Water District and supported by CVWD for a jurisdictional basin boundary modification. The originally defined Basin boundary was moved to the west to coincide with the boundary between the two water districts' service areas. The new western boundary of the Basin follows the limits of the CVWD service area along Toro Canyon and separates the Basin from the Montecito Groundwater Basin. The Basin's northern boundary is delineated at the geologic contact with the Coldwater Sandstone and Sespe Formations in the foothills of the Santa Ynez Mountains. DWR approved a second basin boundary modification request in 2018 to refine the delineation of the northern boundary using more recently published geologic maps.

Groundwater rights in the Basin have not been adjudicated. No other GSAs have been formed within the Basin, and no alternative plans have been submitted for any part of the Basin.

ES-1.2 Sustainable Management Criteria

The Carpinteria GSA establishes sustainable management criteria (SMCs) to avoid significant and unreasonable conditions caused by groundwater use that could lead to undesirable results for six sustainability indicators listed in SGMA. The sustainability indicators include (1) chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply, (2) significant and unreasonable reduction of groundwater storage, (3) seawater intrusion, (4) degraded water quality, (5) land subsidence, and (6) depletion of interconnected surface water. Basin stakeholders helped to define the sustainability goal, what constitutes undesirable results, and appropriate SMCs for each sustainability indicator. SGMA also requires that GSAs identify groundwater dependent ecosystems (GDEs) and assess the effects of changing groundwater levels on GDEs. The Plan includes a robust groundwater monitoring program and defines projects and management actions that have been developed to maintain long-term groundwater sustainability.

As noted in Section 3 of this Plan, several data gaps exist in the hydrogeologic conceptual model (HCM). The uncertainty created by these data gaps was considered when developing the SMCs. The SMCs are considered initial criteria and will be reevaluated and potentially modified in the future as new data become available.

2.6 Notice and Communication [§354.10]

2.6.1 Beneficial Uses and Users [§354.10(a)]

§354.10 Notice and Communication. Each Plan shall include a summary of information relating to notification and communication by the Agency with other agencies and interested parties including the following:

(a) A description of the beneficial uses and users of groundwater in the basin, including the land uses and property interests potentially affected by the use of groundwater in the basin, the types of parties representing those interests, and the nature of consultation with those parties.

The Carpinteria GSA has engaged stakeholders in consultation since its formation, starting with public meetings during development of the JPA Agreement forming the GSA. A contact list for interested parties was developed through this process, and the Carpinteria GSA has continued seeking broad engagement in management of the Basin's groundwater resources during development of this Plan. Beneficial uses and users identified in the Basin and invited to participate in development and implementation of the Plan include:

- Holders of overlying groundwater rights, including:
  - Agricultural users. There are agricultural users of groundwater operating on land overlying the Basin. The Carpinteria GSA anticipates that the Plan will address the collective interests of agricultural users of groundwater wells and will continue to engage in outreach to them throughout the development and implementation of the Plan through inviting their participation in the GSA's public meetings.
  - Domestic well owners. There are domestic wells overlying the Basin. The majority of these domestic well owners are likely to be de minimus users, as defined by SGMA. The Carpinteria GSA anticipates that the Plan will address the collective interests of domestic users of groundwater wells and plans to continue to engage in outreach to them throughout the development and implementation of the Plan through inviting their participation in the GSA's public meetings.
- Municipal well operators. The Carpinteria GSA is a joint powers authority created by four local public agencies. One of the GSA's signatory members, CVWD, owns and operates municipal wells in the Basin. The City of Carpinteria also owns wells, which are used for landscape irrigation.
- Public water systems. CVWD is a public water system located within the Basin and is a signatory member to the JPA Agreement. CMWD is a public water system serving the Ventura County portion of the Basin and will be invited to participate in the GSA's public meetings.
- Local land use planning agencies. The County of Santa Barbara, County of Ventura, and City of Carpinteria have land use planning authority on land overlying the Basin. All three agencies are signatory members to the JPA Agreement forming the Carpinteria GSA. Santa Barbara County is represented via the Santa Barbara County Water Agency.
- Environmental users of groundwater. The Carpinteria GSA will assess whether any environmental users of groundwater exist within the Basin and will reach out to appropriate resource agencies if any are identified. The Carpinteria GSA will conduct outreach to environmental organizations within the Basin and will consider environmental interests throughout development of the Plan by inviting their participation in the GSA's public meetings.

- Surface water users, if there is a hydrologic connection between surface and groundwater bodies. Three potential surface water diversions within the Basin were identified on the State Water Resources Control Board Electronic Water Rights Information Management System. These users will be reached out to if a hydrologic connection between surface water and groundwater is determined to exist near the points of diversion.
- Federal government, including, but not limited to, the military and managers of federal lands. Portions of the Basin lie within the Los Padres National Forest. The Carpinteria GSA will reach out to the United States Department of Agriculture.
- California Native American Tribes. The Carpinteria GSA will ensure that a representative of overlying California Native American tribes is on the GSA's interested parties list, in order to receive notices of all public meetings and other stakeholder involvement opportunities.
- Disadvantaged Communities (DACs), including, but not limited to those served by private domestic wells or small community water systems. DACs located within the Basin are served by CVWD, a JPA member, and by CMWD. CVWD will assist the Carpinteria GSA with DAC outreach and engagement.
- Entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of the groundwater basin managed by the GSA. CVWD is the designated CASGEM entity for the Basin. CVWD is a JPA member.

Based on several datasets, two DACs were identified in the Basin. DWR's DACs online mapping tool shows the Ventura County portion of the Basin and one census block group in the City of Carpinteria as DACs (DWR, 2022). The CMWD's UWMP shows the Ventura County portion of the Basin as a DAC (CMWD, 2021).

5.5.3 Measurable Objectives for Chronic Lowering of Groundwater Levels Sustainability Indicator [§354.30]

§354.30 Measurable Objectives.

(a) Each Agency shall establish measurable objectives, including interim milestones in increments of five years, to achieve the sustainability goal for the basin within 20 years of Plan implementation and to continue to sustainably manage the groundwater basin over the planning and implementation horizon.

(b) Measurable objectives shall be established for each sustainability indicator, based on quantitative values using the same metrics and monitoring sites as are used to define the minimum thresholds.

(c) Measurable objectives shall provide a reasonable margin of operational flexibility under adverse conditions which shall take into consideration components such as historical water budgets, seasonal and long-term trends, and periods of drought, and be commensurate with levels of uncertainty.

(d) An Agency may establish a representative measurable objective for groundwater elevation to serve as the value for multiple sustainability indicators where the Agency can demonstrate that the representative value is a reasonable proxy for multiple individual measurable objectives as supported by adequate evidence.

(g) An Agency may establish measurable objectives that exceed the reasonable margin of operational flexibility for the purpose of improving overall conditions in the basin, but failure to achieve those objectives shall not be grounds for a finding of inadequacy of the Plan.

The measurable objectives for chronic lowering of groundwater levels provide a target to be managed toward during the 20-year Plan implementation period to ensure conditions that avoid the occurrence of undesirable results. Measurable objectives for chronic lowering of groundwater levels are aspirational objectives that provide operational flexibility above minimum threshold levels to ensure that the Basin can be managed sustainably over a reasonable range of climate and hydrologic variability. Measurable objectives are subject to change during the 20-year Plan implementation period, as new information and hydrologic data become available.

5.5.3.1 Methodology for Setting Measurable Objectives

Measurable objectives were established to meet the sustainability goal and were based on trends in historical groundwater level data; historical precipitation data; review of data and strategies with the TCC; and input from the GSPAC, other public stakeholders, and the GSA management. The measurable objective levels were set so that: (1) natural variations in groundwater levels as were observed in the past during wet and dry periods are considered, (2) there is enough groundwater in storage to get through a multi-year drought as was observed in water years 2012 to 2021 with 2 wet years in water years 2017 and 2019 without undesirable results, and (3) water levels typical of pre-drought conditions are used to establish measurable objectives (i.e., measurable objectives are not reflective of drought conditions). Table 5-1 includes the estimated elevations for the measurable objectives established for the basin aquifer.

5.6.1 Undesirable Results for Reduction of Groundwater Storage [§354.26(a)]

§354.26 Undesirable Results.

(a) Each Agency shall describe in its Plan the processes and criteria relied upon to define undesirable results applicable to the basin. Undesirable results occur when significant and unreasonable effects for any of the sustainability indicators are caused by groundwater conditions occurring throughout the basin.

(b) The description of undesirable results shall include the following:

(2) The cause of groundwater conditions occurring throughout the basin that would lead to or has led to undesirable results based on information described in the basin setting, and other data or models as appropriate.

(d) An Agency that is able to demonstrate that undesirable results related to one or more sustainability indicators are not present and are not likely to occur in a basin shall not be required to establish criteria for undesirable results related to those sustainability indicators.

Per Section 354.26 of the SGMA regulations, locally defined significant and unreasonable conditions for the reduction of groundwater storage sustainability indicator were assessed based on the review of available historical groundwater data, stakeholder input during the public process, analysis of available data, and discussions with GSA staff. Based on well-established hydrogeologic principles, it is understood that the reduction of groundwater storage sustainability indicator is directly correlated to the chronic lowering of groundwater levels sustainability indicator. Significant and unreasonable changes in groundwater storage in the Basin are those that:

- May lead to long-term reduction of groundwater storage
- Interfere with other sustainability indicators

Assessment of groundwater in storage was evaluated using the same RMS network and associated water level minimum thresholds and measurable objectives as the chronic lowering of groundwater levels SMC. As additional data are collected in the monitoring network described in Section 4, new RMS sites may be established during the 20-year SGMA implementation period, and SMCs may be amended as determined by the GSA as new data are collected.

For the purposes of this Plan, the definition of undesired conditions for the reduction of groundwater storage sustainability indicator is as follows:

> *The Basin will be considered to have undesirable results if water levels in municipal supply wells decline to the point that they are in the screen, which could impact water supply operations, or if water levels in agricultural supply wells decline to the point that inadequate supply is available for farming operations, requiring fallowing or reduction of operations. The potential occurrence of undesirable results will be investigated and assessed if 33 percent or more RMSs for water levels within the Basin display exceedances of the minimum threshold groundwater elevation values for three consecutive fall measurements (bracketing 2 calendar years).*

SECTION 6: Projects and Management Actions [Article 5, SubArticle 5]

6.1 Introduction [§354.42, 354.44(a),(c), and (d)]

§354.42 Introduction to Projects and Management Actions. This Subarticle describes the criteria for projects and management actions to be included in a Plan to meet the sustainability goal for the basin in a manner that can be maintained over the planning and implementation horizon.

§354.44 Projects and Management Actions

(a) Each Plan shall include a description of the projects and management actions the Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.

(c) Projects and management actions shall be supported by best available information and best available science.

(d) An Agency shall take into account the level of uncertainty associated with the basin setting when developing projects or management actions.

SGMA regulations require each Groundwater Sustainability Plan to include a description of projects and management actions necessary to achieve the basin sustainability goals and to respond to changing conditions in the basin. This section describes the projects and management actions that the Carpinteria GSA believes will, when implemented, help the Basin attain sustainability in accordance with § 354.42 and § 354.44 of SGMA regulations. The concepts for the proposed projects and management actions were developed during working sessions with GSA staff, meetings with the Carpinteria GSA TCC, meetings with the GSA GSPAC, and in public workshops between April and August, 2023. In the context of this GSP, projects are defined as activities supporting groundwater sustainability that require significant funding, infrastructure, and engineering support. Groundwater management actions generally refer to activities that support groundwater sustainability through policy and regulations without significant infrastructure requirements or capital investments. The effectiveness of the projects and management actions will be assessed based on the ability to avoid undesirable results as discussed in Section 5 of this Plan.

The Carpinteria GSA has developed a portfolio of potential projects and management actions that can be implemented in a phased manner as the conditions in the Basin dictate. Based on the results of the analysis that was performed in conjunction with the development of this Plan, the Carpinteria GSA concludes that the sustainability goals described in this Plan and required under the provisions of SGMA can be achieved through the implementation, as needed, of the projects and management actions described in Sections 6.3 through 6.14. This GSP categorizes listed projects as either Tier 1 projects or Tier 2 projects. Tier 1 projects are priority projects expected to be implemented within the first 5-year SGMA implementation period; three projects are identified as Tier 1 projects. Tier 2 projects are non-priority projects also identified for possible future consideration. It is expected that all management actions discussed in this section will be evaluated and implemented as appropriate in the first 5-year SGMA implementation period.

The Carpinteria GSA plans to continually monitor and assess its progress toward meeting the sustainable management criteria described in Section 5. Under conditions where minimum thresholds are projected to be achieved, the Carpinteria GSA will perform assessments to determine whether the trends are related to groundwater pumping, drought conditions, or other factors. If groundwater level data are trending toward reaching minimum thresholds as a direct consequence of groundwater pumping in the Basin, then the Carpinteria GSA will determine which additional project(s) and/or management action(s) to implement to address these conditions.

Management actions and potential future projects discussed in this section have been developed to address sustainability goals, measurable objectives, and undesirable results identified for the Basin in Section 5. Inclusion of projects and management actions in this Plan does not forego obligations under local, state, or federal regulatory programs. While the Carpinteria GSA has an obligation to oversee progress toward groundwater sustainability, it is not the primary regulator of land use, water quality, or environmental project compliance. The GSA will work with the County of Santa Barbara and the City of Carpinteria land use staff and other outside regulatory agencies, as needed, to ensure that projects and management actions undertaken pursuant to SGMA are in compliance with all applicable laws. The Carpinteria GSA may choose to collaborate with land use and regulatory agencies on specific overlapping interests, such as well permitting, water supply considerations, water quality monitoring, and oversight of projects developed within the Basin.

The projects and management actions in this Plan are designed to achieve several outcomes, including:

- Achieving groundwater sustainability within 20 years of Plan adoption.
- Preventing or reducing the impacts of seawater intrusion in the Basin.
- Ensuring that projects and management actions benefit all uses and users of groundwater.
- Developing sources of funding for GSA operations. Funds will also be used for future Basin monitoring and the implementation of projects and management actions that are identified by the GSA to be appropriate.
- Providing controls and incentives to manage groundwater pumping, if needed, to support sustainability goals.
- Supporting the health of groundwater-dependent ecosystems in the Basin.

The projects and management actions described in this section provide a framework for achieving sustainability. However, not all details for proposed projects are known at the time of adoption of this GSP. Specific details will need to be finalized and negotiated before many of the projects and management actions can be implemented. Costs for implementing projects and management actions may come from grant funding or from GSA operating revenues, depending on the project.. The array of projects and management actions developed by the GSA included in this section demonstrate that options and alternative paths exist to reach sustainability, and it may not be necessary to implement all the projects and management actions to maintain sustainability over the long term. Importantly, the projects and management actions included herein should be considered as a list of options that will be refined during Plan implementation, during which stakeholders will be provided additional opportunities to participate in the public process before projects and management actions are implemented.

SGMA regulation § 354.44 requires that projects and management actions described in the Plan include a discussion of the following:

- Relevant measurable objectives being addressed
- The expected benefits of the action
- The circumstances under which management actions or projects will be implemented
- How the public will be notified
- Relevant regulatory and permitting considerations
- Implementation schedules
- Legal authority required to take the actions
- Estimated costs

A summary of the projects and management actions identified by the Carpinteria GSA are listed below. Tier 1 projects are expected to be implemented within the first 5-year SGMA implementation period. Tier 2 projects will be evaluated and ranked during the first 5-year period for potential future implementation. Some projects or management actions may occur if drivers other than sustainability, such as water supply management flexibility, necessitate the implementation.

Tier 1 Projects

- Carpinteria Advanced Purification Project (CAPP)
- Sentinel Monitoring Well Network Expansion Project
- Local Infrastructure Water System Interties

Tier 2 Projects

- Carpinteria Seawater Intrusion Barrier Project
- Aquifer Storage and Recovery (ASR) Projects
- Recharge Enhancement Projects (Recharge Basins and Creek De-lining)
- Local Inter-Agency Water Delivery and Water Banking Agreements

Potential Management Actions

- Municipal Pumping Re-Distribution
- Well Registration and Metering Program
- Water Use Efficiency Programs
- Groundwater Model Revisions and Updates
- Address Data Gaps
    - Perform Video Surveys in Representative Wells that Currently Do Not Have Adequate Construction Records to Confirm Well Construction
    - Identify wells in the Ventura County portion of the Basin that can be monitored for water levels or water quality
    - Survey and Investigate Potential Groundwater Dependent Ecosystems (GDEs) in the Basin
    - Geophysical monitoring along the coast every 5 years to evaluate seawater intrusion.
- Perform Tier 2 Project and Management Action Feasibility and Ranking Study

6.3 Carpinteria Advanced Purification Project (CAPP) [§354.44(b)(1), (d)]

23 Cal. Code Regs §354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(1) A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent.

(d) An Agency shall take into account the level of uncertainty associated with the basin setting when developing projects or management actions.

6.3.1 Project Description

The CAPP is a Tier 1 project. The objective of the CAPP is to develop a new sustainable locally controlled future water supply for the Basin through implementation of an Indirect Potable Reuse (IPR) project. Planning, design, and funding for this project have been administered by the CVWD. The recent drought and projected changes to the area's existing water supplies highlight several water resource vulnerabilities and the need for a local, reliable water supply. Water supply issues include State Water Project (SWP) conveyance system capacity limitations, decreased reliability, and increasing costs to sustain reliability; potential yield reductions for the Cachuma Project, increased competition for Lake Cachuma storage, and vulnerability of Cachuma Project conveyance systems; and stricter groundwater management resulting from SGMA implementation. These vulnerabilities support the need for a local, reliable, and drought-resistant recycled water project.

In 2016, the District, along with Carpinteria Sanitary District (CSD) and City of Carpinteria (City), completed a *Recycled Water Facilities Plan* (RMS, 2016) that obtained partial funding by the California State Water Resources Control Board. This plan recommended alternatives for a recycled water project with groundwater recharge. The recommended project consists of producing approximately 1,100 AFY (1.0 million gallons per day [MGD]) of purified water from the CSD Wastewater Treatment Plant (WWTP) for injection into the local groundwater basin. After adequate retention time in the aquifer, the injected water ultimately will be recovered through existing CVWD production wells (Headquarters well and El Caro well) and used for District potable water supply. The ultimate project assumes an expansion of treatment capacity from 1.0 MGD to 1.5 MGD based on projected future increases in WWTP flows. The ultimate implementation of the CAPP includes the following facilities (see Figure 6-1):

- Advanced Water Purification Facility (AWPF) consisting of equalization tank, microfiltration (MF), reverse osmosis (RO), and an advanced oxidation process (AOP)
- Purified Water Pump Station, to be located on the WWTP site
- 6,100 linear feet (LF) of 12-inch conveyance pipeline from the Purified Water Pump Station to a well lateral split point, including CalTrans installation for the Linden Avenue overpass over U.S. Highway 101
- 2,000 LF of 8-inch conveyance pipeline from the well lateral split point to individual injection wells
- Up to three 14-inch injection wells with backwash pumps and a 42,000 gallon backwash tank

- Approximately 1,400 LF of 12-inch well backwash discharge piping to existing sanitary sewers.
- Six clustered monitoring wells
- Existing CVWD Headquarters and El Carro production wells

The CAPP is not a proposed project planned for possible future development; the project is moving forward as of the adoption of the GSP. Funding from numerous sources has been secured, Final design underway, construction elements have been scheduled, and the project is anticipated to be completed and ready for startup by 2027.

Attachment A

GSP Advisory Committee Meetings		
Meeting	**Date**	**Topic**
Meeting #1	February 28, 2023	SGMA 101 Overview, Basin Conditions, Introduction to Sustainable Management Criteria
Meeting #2	March 28, 2023	Groundwater Model History, Housing Impacts on Groundwater Sustainability, Agricultural Stakeholder Interviews regarding Undesirable Results, Seawater Intrusion Sustainability Management Criteria
Meeting #3	April 25, 2023	Sustainable Management Criteria, Introduction to Projects and Management Actions
Meeting #4	May 23, 2023	Flood Control Facilities, Groundwater Dependent Ecosystems and SGMA, Water Level and Groundwater Storage, Projects and Management Actions
Meeting #5	June 27, 2023	Projects and Management Actions, Implementation Plan, Agricultural Representative Interviews
Meeting #6	July 25, 2023	Review of Draft GSP Chapters 1 - 3
Meeting #7	August 22, 2023	Review of Draft GSP Chapters 4 - 7

GSP Workshops		
Workshop	**Date**	**Topic**
Workshop #1	October 19, 2022	SGMA 101 Overview, Hydrogeologic Conceptual Model, Groundwater Conditions, Historical/Current Water Budget
Workshop #2	November 16, 2022	Groundwater Model, Monitoring Network
Workshop #3	January 18, 2023	Introduction to Sustainable Management Criteria
Workshop #4	February 15, 2023	Future Water Budget, Seawater Intrusion Sustainability Management Criteria
Workshop #5	March 15, 2023	Sustainable Groundwater Management Act, Sustainable Management Criteria
Workshop #6	April 19, 2023	Sustainable Groundwater Management Act, Sustainable Management Criteria
Workshop #7	May 17, 2023	Sustainable Management Criteria, Introduction to Projects and Management Actions
Workshop #8	August 16, 2023	Projects and Management Actions, GSP Implementation

6.9.9 Cost & Funding [§354.44(b)(8)]

23 Cal. Code Regs §354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(8) A description of the estimated cost for each project and management action and a description of how the Agency plans to meet those costs.

Project costs and proposed mechanisms for funding a recharge enhancement project will be assessed in a desktop study evaluating Tier 2 projects during the first 5-year SGMA implementation period. Project cost estimates for any specific project would be addressed during the study, planning, preliminary design/engineering, and permitting phases of all projects that are identified by the GSA for potential future consideration.

6.10 Municipal Pumping Re-Distribution Management Action [§354.44(b)(1), (d)]

23 Cal. Code Regs §354.44 Projects and Management Actions.

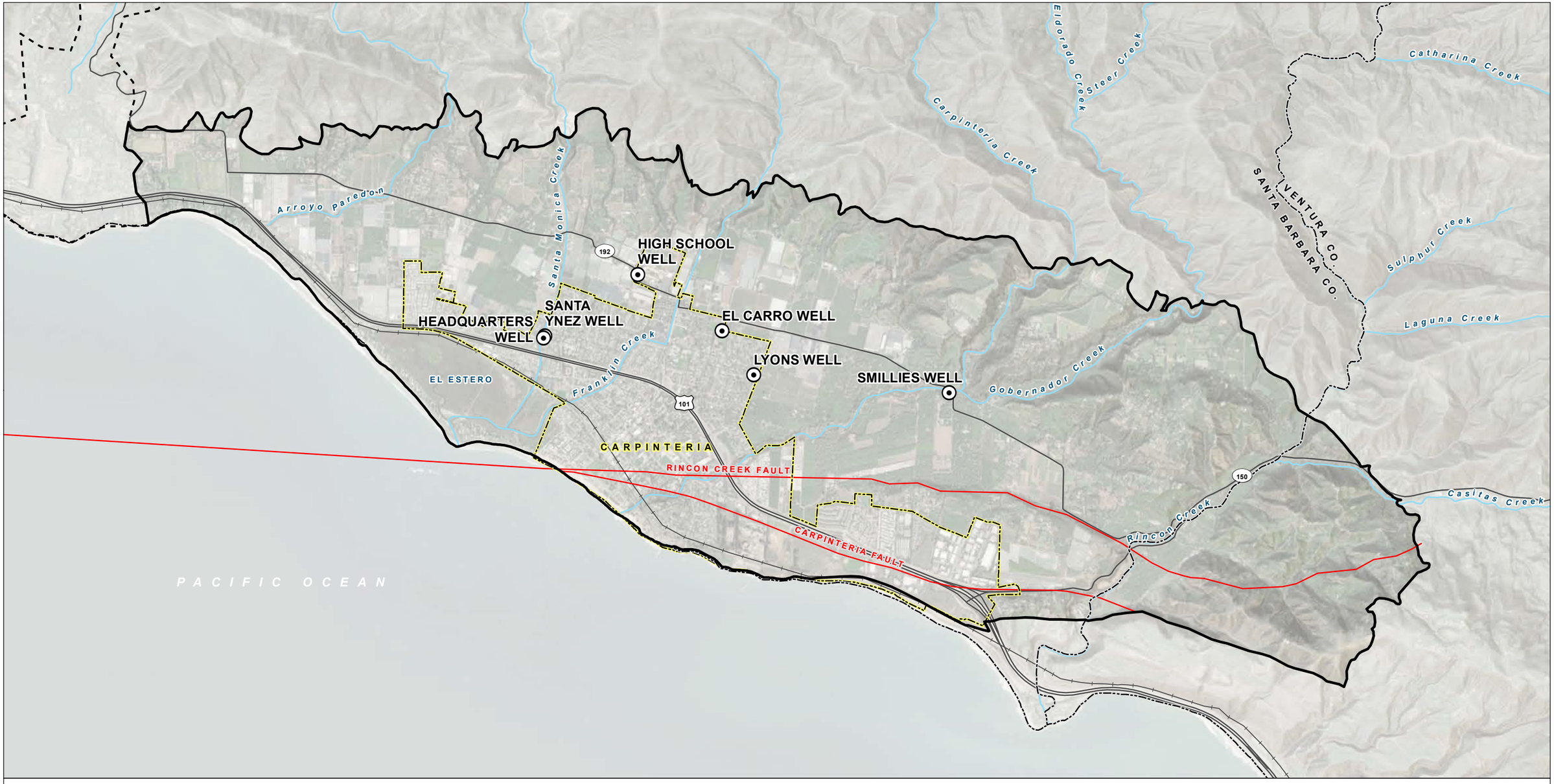
(b) Each Plan shall include a description of the projects and management actions that include the following:

(1) A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent.

(d) An Agency shall take into account the level of uncertainty associated with the basin setting when developing projects or management actions.

6.10.1 Project Description

The CVWD provides virtually all of the potable water used by municipal and industrial users in the Basin. CVWD currently produces approximately 25 to 30 percent of the total groundwater pumping in the Basin from three wells: the Headquarters Well, the El Carro Well, and the Smillie well (see Figure 6-4). Two of the District's wells, the High School Well and the Lyons Well, are not currently used to produce groundwater for the District. The Headquarters well is the closest well to the coast that is north of the Rincon Fault. Due to the detection of increasing chlorides in the Sentinel monitoring wells, there is newfound concern regarding the possibility of seawater intrusion impacting water quality conditions at the Headquarters well, among other possible private wells that could be impacted. Several other projects discussed in this section (Sentinel Well Network Expansion, Seawater Barrier Project) have the objective of managing potential seawater intrusion along the coast. This project of Municipal Pumping Re-Distribution is also presented with the objective of maintaining conditions along the coast to minimize the potential impact from seater intrusion.



LEGEND

- CVWD District Well

All Other Features

- Carpinteria Groundwater Basin
- Montecito Groundwater Basin
- County Boundary
- City Boundary
- Fault
- Railroad
- Major Road
- Watercourse

FIGURE 6-4

CVWD Production Wells

Carpinteria Groundwater Basin
Groundwater Sustainability Plan

N

0 1,500 3,000 4,500
feet

CARPINTERIA GSA
GROUNDWATER SUSTAINABILITY AGENCY

Document Path: Y:\2006_Carpinteria_Basin_GSA\Source_Figures\001_GSA\GW_Sustainability_Plan\Chapter_6\Figure6-4_CVWD_Production_Wells.mxd, npalmer

Reduction of pumping at the Headquarters well could minimize future water level declines in this area, and thereby mitigate against conditions that might contribute to future seawater intrusion. The project concept for this project is to reduce overall pumping at the Headquarters well and make up that same quantity of required municipal production by increasing pumping at the El Caro well and the Smillie well or some other future inland well. Ultimately, new District wells could be drilled at either the Lyons or High School sites, or possibly at alternate sites yet to be acquired by the District, to re-distribute Headquarters well pumping to other locations than the currently active wells.

6.10.2 Relevant Measurable Objective(s) [§354.44(b)(1)]

§354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(1) A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent.

The purpose of potential redistribution of municipal production from the Headquarters well is to contribute to conditions required to achieve the Measurable Objective for the Seawater Intrusion.

6.10.3 Implementation Triggers [§354.44(b)(1)(A)]

23 Cal. Code Regs §354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(1) The Plan shall include the following:

(A) A description of the circumstances under which projects or management actions shall be implemented, the criteria that would trigger implementation and termination of projects or management, and the process by which the Agency shall determine that conditions requiring the implementation of particular projects or management actions have occurred.

It is anticipated that the District will begin to evaluate this action to assess any constraints or costs associated with its operation early in the initial 5-year SGMA implementation period, and implement the concept as appropriate after that. Therefore, there is no future implementation trigger to consider.

6.10.4 Public Notice Process [§354.44(b)(1)(B)]

§354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(1) The Plan shall include the following:

(B) The process by which the Agency shall provide notice to the public and other agencies that the implementation of projects or management actions is being considered or has been implemented, including a description of the actions to be taken.

Notification to the public regarding the concept for this project and the need to implement this project to avoid undesirable conditions in ongoing groundwater management was provided during the public process associated with the development of this GSP. If this project progresses, appropriate public notification will be maintained in conformance with the GSA Stakeholder Communication and Engagement Plan (Appendix C), and compliance with other permit conditions associated with project implementation will be maintained.

6.10.5 Permitting and Regulatory Process [§354.44(b)(3)]

23 Cal. Code Regs §354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(3) A summary of the permitting and regulatory process required for each project and management action.

Because this management action involves the internal operational decisions of the CVWD, it is not expected to involve any additional permitting or regulatory requirements to implement. If new wells are ultimately constructed by the District, there will be normal county and city drilling permits to procure.

6.10.6 Implementation Timeline [§354.44(b)(4)]

§354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(4) The status of each project and management action, including a time-table for expected initiation and completion, and the accrual of expected benefits.

This project has no significant design requirements or construction costs to implement. As such, it is anticipated that the District will begin to evaluate this action early in the initial 5-year SGMA implementation

period. Any constraints or costs associated with its operation will be assessed, and the management strategy will be implemented as appropriate after that.

6.10.7 Anticipated Benefits [§354.44(b)(5)]

§354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(5) An explanation of the benefits that are expected to be realized from the project or management action, and how those benefits will be evaluated.

The anticipated benefits of this management action are to minimize declines in groundwater elevation in the coastal area of the aquifer north of the Rincon Fault. This will mitigate against conditions that could contribute to seawater intrusion.

6.10.8 Legal Authority [§354.44(b)(7)]

23 Cal. Code Regs §354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(7) A description of the legal authority required for each project and management action, and the basis for that authority within the Agency.

California Water Code § 10726.2 provides GSAs the authority to purchase, among other things, land, water rights, and privileges in the furtherance of sustainable groundwater management in the Basin.

6.10.9 Cost & Funding [§354.44(b)(8)]

23 Cal. Code Regs §354.44 Projects and Management Actions.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(8) A description of the estimated cost for each project and management action and a description of how the Agency plans to meet those costs.

Because some portion of any offset pumping from the Headquarters well can be performed at existing wells with existing infrastructure, there is not expected to be any significant construction or operational costs associated with implementation of this strategy, unless and until it may be determined that new municipal well construction may be required.

TECHNICAL MEMORANDUM
Pueblo Water Resources, Inc.
4478 Market St., Suite 705
Ventura, CA 93003
Tel: 805.644.0470
Fax: 805.644.0480

To:	Bob McDonald	Date:	September 15, 2022
From:	Mike Burke, P.G., C.Hg Robert Marks, P.G., C.Hg	Project No:	21-0061
Subject:	Basis-of-Design, Smillie Well No. 2		

Presented in this Technical Memorandum is the Basis-of-Design (BOD) for a new well intended to replace the Carpinteria Valley Water District's (District) existing Smillie Well. The Smillie Well was drilled and constructed in 1975. Based on review of the well drilling and well construction documentation, historical operational data collected, and the results of various well performance tests that have been performed over the years, Pueblo Water Resources, Inc. (Pueblo) has concluded the following about the existing well:

- the well is inappropriately designed with respect to the casing materials (hybrid of stainless steel and carbon steel);
- development of the well was incomplete and insufficient at the time of construction in 1975 and residual drilling fluids and/or formation fines are creating excessive well losses; and,
- the gravel pack gradation/well screen aperture opening size were inappropriately matched.

Because of a combination of the above factors, the full production potential of the well was never fully realized; sand production from the well has been problematic throughout the history of well operation; and efforts to rehabilitate/ redevelop the well have resulted in limited success. The District, therefore; intends to replace the existing Smillie Well (Smillie # 1) with a new well (Smillie # 2) in order to maximize groundwater production at the existing site.

This BOD presents the following: a discussion of the hydrogeologic setting associated with the Smillie Well site; a review of the drilling and construction details of Smillie #1; a summary of the operational and maintenance history of Smillie #1; and a preliminary design for Smillie #2. Among other considerations, the preliminary design is based on information acquired through the drilling of Smillie #1, objectives the District has established for the replacement well, and logistical considerations with respect to the execution of drilling and well construction operations at the existing site. Because of the limited size of the existing site, the disposition of the site with respect to traffic flow on Foothill Road, and limitations with respect to ingress onto and egress from the site with drilling and associated equipment, the consideration of site logistics is extremely important and has bearing on site preparation, the method of well drilling and construction, and the execution of well drilling operations. The location of the Smillie well site is shown on **Figure 1**.

Hydrogeologic Setting

The Smillie site is situated within the Carpinteria Groundwater Basin, which has been studied extensively over the last 40 years in previous investigations, most notably by: the United States Geological Survey (USGS), *Geology and Ground Water Reservoirs of the South-Coast Basin of Santa Barbara County, California,* USGS Water Supply Paper 1108, J.E. Upson, 1951; Geotechnical Consultants, Inc. (GTC), *Hydrogeologic Investigation of Carpinteria Ground Water Basin*, dated June 1976; and most recently, Pueblo Water Resources, Inc., *Carpinteria Groundwater Basin, Hydrogeologic Update and Groundwater Model Project*, June, 2012. These documents describe the stratigraphy, structure, and hydraulic characteristics of the aquifer systems of the Carpinteria Basin.

As described in these documents, the Carpinteria Basin is located on the south flank of the Santa Ynez Mountains. The basin represents the north limb of a structural syncline that has been filled with water bearing sediments. The east-west trending Rincon Creek thrust fault divides the basin into to two subunits. Storage Unit No. 1 is situated north of the fault and Storage Unit No. 2 lies south of the fault. Storage Unit No. 1 contains the principal water bearing aquifers within the basin, serves as the primary source of groundwater supply for the basin, and is the unit in which all of the District's principal municipal supply well sites, including the Smillie well site, are located.

Within the Confined Area of Storage Unit No. 1 of the Carpinteria Basin, the principal aquifers occur primarily within marine sediments of the Pleistocene and upper Pliocene aged Carpinteria and Casitas Formations. Three principal aquifer zones within the basin include Zones A, B, C, and D, with Zone A representing the shallowest major aquifer and Zone D being the deepest. Geologically, Zone A likely represents the basal conglomerate of the Carpinteria Formation, whereas Zones B, C, and D are contained within the Casitas Formation. The base of Zone D is considered to represent the effective base of freshwater in the basin (GTC). The base of Zone D generally ranges between 1,200 feet to 1,700 feet below sea level in Storage Unit No. 1.

Lithologically, primary water bearing deposits in the basin consist of interbedded, unconsolidated, and semi-consolidated sand, gravel, silt and clay (and combinations thereof) deposits. The coarser grained sandy/gravelly strata in these deposits comprise the individual primary aquifer zones (i.e., Zones A through D). These primary aquifer zones are generally on the order of 50 to 100 feet thick each. Finer grained strata of silt and clay are generally thicker and form a series of aquicludes between the primary aquifer zones. The primary aquifer zones are generally correlateable within the confined portion of Storage Unit No. 1, and transition into, for the most, part non-correlateble sequences of strata into and through the unconfined portion, or recharge area of Storage Unit No. 1.

The Smillie well site is shown on the maps of the basin to be within the Recharge Area of Storage Unit No. 1. Review of geophysical and lithologic logs prepared for the pilot drill hole of Smillie #1 indicate that some of the strata may be identified as being associated with some of the principal aquifers (i.e., Zones B and C, Zone A is absent at the site), but it also appears that the well site overlies the part of the basin which transitions from confined to unconfined.

Maps and figures from the 2012 Hydrogeologic Update and Groundwater Model Project showing the Confined and Recharge Areas of the basin and the hydrogeologic cross section that transects the Smillie well site are included for reference as supporting documentation.

Smillie Well No. 1

Smillie #1 was drilled and constructed in 1975. Design and construction management for the well was provided by Geotechnical Consultants, Inc (GTC). Information from a test hole (TH-4) drilled approximately 50 feet from the Smillie site served as the basis for the design of Smillie #1. The direct rotary method was used, and the pilot hole for Smillie #1 was drilled to a total depth of 1163 feet below ground surface (bgs). Based on the geophysical log for Smillie #1 and the lithologic log of TH-4, GTC interpreted that the materials present between the depths of approximately 450 feet and 800 feet bgs included Zones B and C, and the materials between approximately 1020 feet and 1120 feet corresponded to Zone D. While the original plan was to complete a well to approximately the full depth of the pilot hole, because of estimates of limited production from the deeper zones, and concerns related to potential poor water quality and gas production associated with the deeper strata, the well was completed to a total depth of 824 feet. The electric log for Smillie #1 and the lithologic log for TH-4 are attached as supporting documentation.

A summary of the construction details of Smillie #1 is provided in Table 1.

Table 1. Smillie #1 As-Built Construction Summary

Design Feature	Value	Comments
Date Drilled	1990	Midway Drilling & Pump Co.
Drilling Method	Direct Rotary	
Total Cased Depth	824 ft.	
Borehole Diameter	24 in./22 in.	
Casing Diameter	14 in. x 12 in.	Reduced at 455 feet
Well Screen	455 ft. to 800 ft.	Roscoe Moss Ful Flo Louvers, 0.0625 in slots
Blank Cellar	800 ft. to 824 ft.	
Casing Material	Blank – Cu Bearing Steel, Screen – Stainless Steel	
Seal Depth	422 ft.	
Gravel Pack Depth	420 ft. to 824 ft.	Crushed Silica, 4 x 20 Gradation (?)
Conductor Casing	0 ft. to 10 ft.	28 in. Diam, Steel

The well was initially developed by swabbing and bailing (26 hours total), and later by pumping and surging with a test pump. The total amount of development time by pumping and surging is not documented in the well completion report, but it is stated in the report that the performance and production capacity of the well as determined through the development data was significantly less than what had been expected. A chemical dispersant was used in an attempt to facilitate additional mud cake removal and improve well performance.

Testing of the well was performed following development. Test procedures and test results are not clearly documented and presented in the well completion report. It was stated that a pumping rate of 350 gallons per minute (gpm) could not be sustained with a pump setting of

410 feet, and that a specific capacity of 1.2 gpm per foot of drawdown (gpm/ft) was derived. An operational pumping rate range of 275 gpm to 300 gpm was recommended.

In 2015, the District authorized Pueblo to develop a rehabilitation/redevelopment program for Smillie #1 in an effort to increase the performance of the well so that the District could utilize this asset for groundwater production from this portion of the basin. Pueblo's workplan included development by airlift swabbing, pumping and surging, and introduction of a chemical dispersant to remove residual drilling fluids. Following testing performed after the redevelopment work, the specific capacity of the well improved by a factor of approximately 3 to 4, from a starting specific capacity of about 1.3 gpm/ft, to an improved specific capacity in the approximate range of 4 gpm/ft to 5 gpm/ft. Given these results, it appeared that pumping rates for Smillie #1 as high as 750 gpm could be attained; however, the testing also revealed that production rates in excess of about 450 gpm resulted in mechanical jamming within the gravel pack and associated production declines, so an upper limit of 400 gpm was recommended.

Prior to termination of test pumping following the 2015 rehabilitation of Smillie #1, a sample was collected and submitted to FGL Environmental Laboratory (Santa Paula) for general mineral analysis. The results of the analysis indicated that the well yielded high quality water with respect to drinking water standards. The water was of a calcium bicarbonate character, with a total dissolved solids concentration of 550 milligrams per liter. The water contained low concentrations of nitrate (2.7 mg/L, as N), below the State of California action level for this constituent.

Well Site and Drilling/Well Construction Logistics

The existing Smillie well site is extremely limited in size with respect to the execution of a municipal well drilling and construction project. The area inside the existing fence is approximately 2,400 square feet. Of this, approximately 500 square feet is occupied by permanent electrical and control facilities, so the available work area inside the fence is approximately 1,900 square feet. In February 2022 a survey was performed to establish and delineate the extent of the District's parcel outside of the existing fenced area. The existing site and the boundary of the District's parcel are shown on **Figure 2**. The total area within the District owned parcel (including the existing, fenced in well site) is approximately 5,000 square feet. Even with the addition of the surveyed area to the existing site, the area is still relatively limited for a well drilling and construction project, and we recommend that the District contact the owner of the neighboring property and attempt to make an arrangement for the Contractor to encroach onto that property with equipment and possible materials staging during the project.

An additional challenge associated with use of the existing Smillie site for a well construction project is the disposition of the site entrance/egress with respect to the flow of eastbound and westbound traffic on Foothill Road. Entrance to the site from the west and egress from the site to the site from the west is at an acute angle which will necessitate entry to the site from the east and egress from the site to the east. Additionally, the site is situated on a blind curve in both directions which will require that appropriate traffic safety measures be established and executed for the duration of the project.

The limited size of the site and the issues associated with ingress to and egress from the site bears the following with respect to the Smillie #2 drilling and construction project:

- Smillie #1 will have to be either destroyed or converted to a monitoring well (which could be housed in a ground flush vault) before mobilization to the site for Smillie #2 drilling and construction. The existing sand filter, discharge piping, and well pedestal will need to be removed in order to set up drilling equipment.
- Drill pipe lengths will be a maximum of 20 feet in length to reduce the size of the trailer needed to transport and hold the pipe joints.
- An offsite area will be needed to accommodate tanks and containers for fluids and cuttings. A relatively small dump/transport truck will be needed to convey cuttings from the site to the offsite staging area. Potential offsite staging areas have been identified. One option may be an area relatively close to the site across Foothill Road. Another option may be the District's yard on Santa Ynez Avenue. We recommend that the District contact the owner of the property across Foothill Road (which may be Cal-Trans) to arrange for temporary use of that site during the Smillie #2 project.
- A traffic safety plan will be required, which will include the placement of signage for the east and west bound traffic on Foothill Road and the use of flagmen in both directions when equipment and/or vehicles are entering or exiting the site.
- A minimum three-man crew will be required throughout the project, which will allow one crew member dedicated for fluid and cuttings transport.

Drilling and well construction operations will be conducted on a 24 hours per day, 7 days per week basis to minimize aquifer damage and maximize the production capacity and efficiency of the well. Following well construction and initial development, the work schedule can revert to conventional work hours. It is estimated that the 24/7 schedule will occur over a period of 14 days for Smillie #2.

Given the proximity of the site to two nearby residences (one 300 feet to the west, and a second 300 feet to the south), a sound barrier will likely be required to reduce noise during drilling and construction. The use of effective sound barriers will likely add approximately $65,000 to the construction costs. A public outreach and notification program is recommended to familiarize residents who may be impacted by the project.

Drilling fluid and development water disposal will be required throughout the project. Drilling fluids removed from the system during drilling (for drill fluid thinning), fluids displaced during well construction, and initial development fluids shall be transferred offsite and legally disposed of by the Contractor. Fluids produced during airlifting and pumping development that meet the requisite criteria may be discharged to Carpinteria Creek in accordance with the District's existing Statewide NPDES Permit for Drinking Water System Discharges (Order WQ 2014-0194-DWQ, General Order No. CAG140001). Fluids produced during the early stages of airlifting development shall be transferred to tankage at the offsite staging area and may be ultimately discharged under the General permit to the appropriate receiving water after settling has occurred and discharge criteria are met.

SMILLIE WELL NO. 2 BASIS-OF-DESIGN

Based on information acquired through the drilling and historical operation of Smillie #1, objectives of the District's for the replacement well; and considerations of site conditions and construction logistics, Pueblo has developed the preliminary design for Smillie Well No. 2. The design features developed are considered typical for a modern municipal production well, and will also allow the well to be used for aquifer, storage, and recovery (ASR) operations. A brief discussion of each design consideration is presented below:

Conductor Casing. We recommend a surface conductor casing to stabilize near surface materials and facilitate proper circulation of drilling mud and cuttings to the fluid circulation system. We recommend a 28-inch diameter, mild steel casing, with a wall thickness of one-quarter inch, set to a depth of fifty feet.

Drilling Method. The well should be drilled using the reverse-rotary method with a polymeric or bentonite-based fluid system. The specifications would include stringent requirements for the maintenance of mud properties established to maintain a clean, sand free fluid, minimize aquifer/formation damage, facilitate effective wall cake removal and well development, and maximize well performance and well efficiency. A proposed site layout for the drilling equipment is provided in Figure 2.

Well Depth and Well Screen Placement. Smillie #1 is completed to a depth of 824 feet, with screen placement between the depths of 455 feet and 800 feet. Review of the geophysical log for Smillie #1, and review of water level data and well performance test data performed after the 2015 rehabilitation and subsequent well performance tests conducted since then, suggest that the screen zone for Smillie #2 be the generally the same as that for Smillie #1. A screen placement between the depths of 455 feet and 810 feet is recommended, and along with the recommendation for a 10-foot casing cellar, the total depth of the completed well would be 820 feet. We agree with the GTC recommendation to not complete materials deeper than 810 feet due to the likelihood of limited additional production coupled with the possibility of inferior water quality from the deeper materials.

Specific Capacity and Well Production Capacity. Baseline testing following well construction yielded a specific capacity of 1.3 gpm/ft. The specific capacity following the 2015 rehabilitation was determined to be in the range of approximately 4 gpm/ft to 5 gpm/ft. Testing of the well in 2018 and 2021 yielded specific capacities of 1.9 gpm/ft. Given the above, and considering the likelihood that Smillie #1 was drilled with limited oversight regarding mud properties and well development, we believe that a specific capacity for Smillie #2 would conservatively be 3 gpm/ft, and could realistically be as high as 5 gpm/ft.

To derive an estimate of a design pumping rate, it is required that historical water level conditions at the Smillie well be considered. **Figure 3** presents a hydrograph of the water level at the Smillie well between the period 1982 through 2019. As shown, since around 1999, the depth to water in the well has ranged between approximately 100 feet and 190 feet. Assuming a high water level of 100 feet, a low water level of 190 feet, a pumping level at a depth of 67 percent of the available drawdown (static level to top of well screen) for the high and low water levels, and assuming conservative and best-case specific capacities (3 gpm/ft and 5 gpm/ft, respectively), a range of predicted pumping rates can be established. The estimate pumping rate range for Smillie #2 is summarized in Table 2.

Table 2. Smillie #2 Well Performance Estimate Summary

Parameter	Specific Capacity = 3 gpm/ft		Specific Capacity = 5 gpm/ft	
High Water Level (ft)	100	--	100	--
Low Water Level (ft)	--	190	--	190
Top of Screen (ft)	390	390	390	390
Available Drawdown (ft)	330	200	330	200
2/3 Available Drawdown (ft)	221	134	221	134
Pumping Rate (gpm)	583	402	972	670

Casing Diameter. As shown in Table 2, the pumping capacity for Smillie #2 is estimated to be in the range of 402 gpm to 972 gpm. Conservatively, a long-term pumping capacity will likely be in the range of 450 to 800 gpm. Driscoll (Groundwater and Wells, 2nd Edition) recommends that for an anticipated well yield in the 500 gpm to 1,000 gpm range, an optimum casing diameter would be 14 inches, with a minimum casing diameter of 12 inches. A 14-inch diameter casing would be the minimum casing diameter recommended for well yields in the range of 800 gpm to 1,800 gpm. Well diameter recommendations are based on the nominal size of pump bowls required to achieve the design flow rates. We recommend a 14-inch diameter casing for Smillie #2. We believe that this is sufficiently sized to accommodate the design flow rate, and required backflushing flow rates should ASR operations be implemented at the Smillie site.

Borehole Diameter. For purposes of well construction, a minimum 5-inch annulus is required to run temporary construction tremie pipe for effective installation of gravel pack envelope and cement seal materials. A minimum borehole diameter of 24-inches is recommended.

Screen/Gravel Pack Design. The well screen and gravel pack of the well must be designed to minimize entrance and exit velocities at the well screen and gravel pack. The well screen must therefore be designed to maximize open area. The available type of well screen with the most open area is a continuous slot, wire-wrapped design. This type of well screen design has over 400 percent more open area than similar diameter slotted or louvered pipe. For purposes of preliminary design, we recommend a slot size of 0.050-inches with an 8 x 16 gradation gravel pack. The highest quality silica gravel pack available should be used for Smillie #2. The material manufactured by P.W. Gillebrand, or an approved equal, is recommended.

Casing Material Evaluation. We recommend that the entire casing (blank casing and well screen) of Smillie #2 be constructed with Type 304 stainless steel. The use of stainless steel casing and screen provides the best economically viable resistance to corrosion and, therefore, superior well service life. Recent investigations (Roscoe Moss Company, Technical Memorandum 004-02) indicate that the use of stainless steel casing and screen can more than double the service life of a well, thereby dramatically reducing the overall life-cycle costs of the well.

Seal Depth. State of California Water Well Standards (Bulletin 74-81 and supplements) require a minimum annular sanitary seal depth of 50 feet; however, in order to provide additional protection from surface derived sources of contamination and to prevent inter-aquifer leakage, we recommend that the well should be provided with a deep annular cement seal to a depth of 400 feet. This would place the bottom of the seal 55 feet above the top of the perforations.

Casing Wall Thickness. The well casing must be designed to protect against collapse during sealing operations. Unbalanced radial forces occur as a result of differential pressures between the outside and inside of the casing, and excessive force will lead to collapse. Assuming a seal depth of 360 feet, the maximum transient hydrostatic pressure differential will be approximately 156 psi (assuming a specific gravity of the sealing material of 2.0 and the casing maintained full of fluid during cementing). The theoretical collapse strengths (with consideration for ellipticity) of nominal 14-inch diameter stainless steel casing of various wall thicknesses is shown in Table 3 below.

Table 3. Summary of Casing Collapse Strengths
14-inch-diameter Grade 304 Stainless Steel

Wall Thickness (inches)	Collapse Strength (psi)
0.25 (1/4)	242
0.3125 (5/16)	419
0.375 (3/8)	636

In order to protect against collapse during sealing operations, the minimum casing wall thickness should be 5/16-inch, which will providing a safety factor of approximately 2.7.

Preliminary Design Summary

Based on the above discussion, preliminary design considerations for the new Smille #2 Well have been developed. The final design will be based on lithologic and geophysical data collected from the pilot hole and refined analysis performed as part of final well design. The preliminary design considerations are summarized below:

Table 4. Smillie Well No. 2 Preliminary Design Summary

Design Consideration	Value
Conductor Casing	28” Mild Steel, to a depth of 20 ft.
Total Well Depth	820 ft.
Screen Placement	455 ft. to 810ft.
Seal Depth	400 ft.
Casing Material	Stainless Steel, Type 304
Nominal Casing Diameter	14-inches
Casing Wall Thickness	5/16-inches
Seal Depth	360 ft.
Gravel Pack Placement	400 ft. to 820 ft.
Gravel Pack	8 x 16; P.W. Gillebrand, or equal
Assumed Specific Capacity Range (gpm/ft)	3 to 5
Design Discharge Rate (gpm)	450 to 800
Estimated Drawdown (feet)	150 to 160
Estimated Pumping Levels (ft bgs)	250 to 350

All depths in feet below ground surface.
Estimated ranges for drawdown and pumping levels based on high (100 ft.) and low (190 ft.) static water levels.

A depiction of the proposed Smillie Well No.2 is presented on **Figure 4**.

ASR Utilization

As water supplies become more limited and the prospect of climate change becomes more apparent, the utility and benefits of ASR technology are being embraced and promulgated by regulatory agencies throughout California. ASR technology involves the use of water wells (albeit specially designed and constructed water wells), to take seasonally available winter runoff flows and inject and store water (after treatment to potable standards) in existing groundwater aquifers. For the District, this technology would be realized by taking Cachuma Project ‘spill water’ , which is available at no cost or entitlement to Cachuma Partners (sans JPA treatment costs) or excess available surface water and recharging the Carpinteria Basin to maintain water levels and ensure adequate groundwater supplies are available in times of drought or regional emergency.

The essential infrastructure elements are already in place at the Smillie well facility to allow ASR implementation; only minor piping and instrumentation modifications are needed (along with a properly designed and constructed well) to be able to implement such a program. The above Basis-of-Design for Smillie #2 incorporates elements to accommodate ASR well operations (e.g., the use of all stainless-steel casing and screen to minimize corrosion and plugging and continuous-slot wire-wrapped screen maximize open area for injection). In addition to contributing to the sustainability of groundwater resources in the Carpinteria Basin, ASR at the Smillie site would likely translate to higher water levels (static and pumping), increased yield, and lower production costs.

Regulatory Requirements

The following regulatory requirements will be associated with the project.

Santa Barbara County Environmental Health Services (SBEHS) Agency. A permit will be required for the conversion of Smillie #1 into a monitoring well, and a permit for the construction of the replacement well will also be required. Although these are ministerial permits, we recommend that the District contact SBEHS prior to commencement of the preparation of the specifications for the project to ascertain whether or not this agency will have any questions or concerns related to the project, or whether or not any special conditions may be applied.

California Environmental Quality Act (CEQA). An Initial Study will need to be prepare to determine what level of review is required and which categorical filing will be appropriate for the replacement well project.

County of Santa Barbara Conditional Use Permit. A conditional use permit from the County of Santa Barbara Planning and Development Department will be required for the project.

State of California Water Resources Control Board Division of Drinking Water (DDW). An amendment to the District's existing water system permit from DDW will be required to remove Smillie #1 from the system permit and add Smillie #2. Because a 50-foot control zone cannot be established for the replacement well because of the limited size of the site and lack of options for adjusting the location of the replacement well, a variance on this requirement will be required. We have encountered this condition previously for other wells, and believe that it is likely that a variance can be obtained for Smillie #2 because: it is replacing an existing municipal supply well; the well design provides for a deep sanitary seal (360 feet) which will prevent contamination from surface sources; and there are no other options to locate the well on the existing property. DDW may require a written agreement with the neighboring property owner regarding the potential for future land use changes on the property adjacent to the replacement well.

State of California Regional Water Quality Control Board (Regional Board). The District is enrolled in the Regional Board's Statewide NPDES Permit for Drinking Water System Discharges (Order WQ 2014-0194-DWQ, General Order No. CAG140001). It is required that the District notify the Regional Board of planned discharges associated with the project before they occur, and that all requirements related to discharges during the project are satisfied.

Estimated Costs

We estimate a total construction cost and bid price for Smillie Well No. 2 of $1,047,000. This estimate does not include associated costs that will be required for the well pump, piping, and other site improvements. Depending on the market conditions (e.g., the cost of stainless steel and demand for competent bidders) at the time of bidding, the cost could vary by as much as 25 percent.

We also recommend that the existing Smillie #1 be converted into a monitoring well. The conversion can be simply accomplished by removing the piping and pedestal, and providing a water tight, flush mounted vault for the existing well. Some minor modifications to the existing well casing inside the vault may be required. We estimate the cost for the simple monitoring well

conversion to be $25,000, and we have incorporated that cost into our cost estimation spreadsheet, which is included as supporting documentation.

In addition to the above contractor-related costs, costs for professional services associated with the preparation of plans and specifications, bidding support, construction management, well testing and summary reporting are estimated to be approximately $85K.

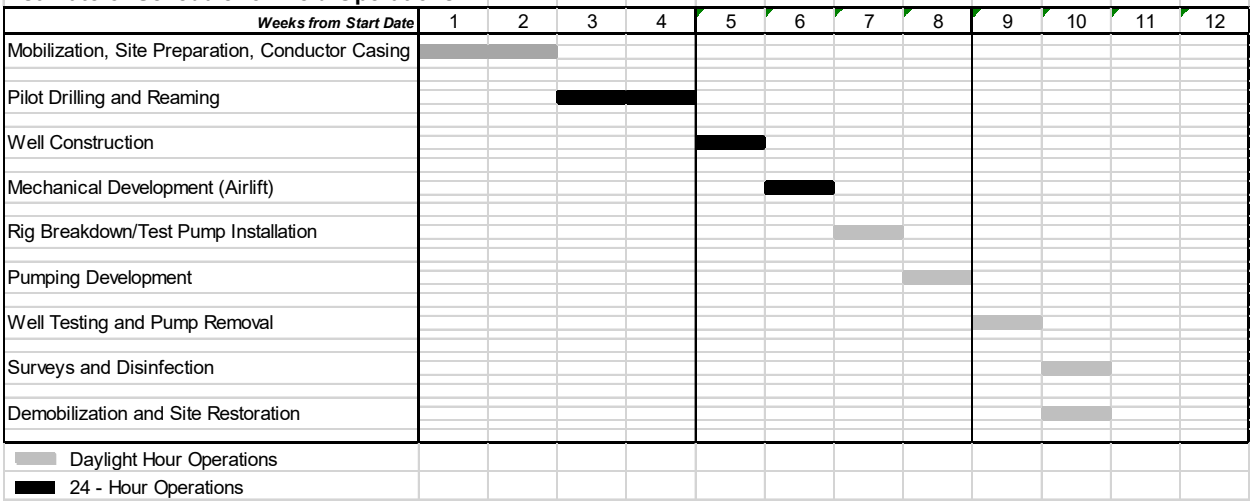
The estimated costs do not include site preparation and development, electrical equipment including the pump, switch gear, control panel and treatment equipment. The estimated cost do not include engineering for electrical, piping, controls and treatment. This cost will be provided by the District.

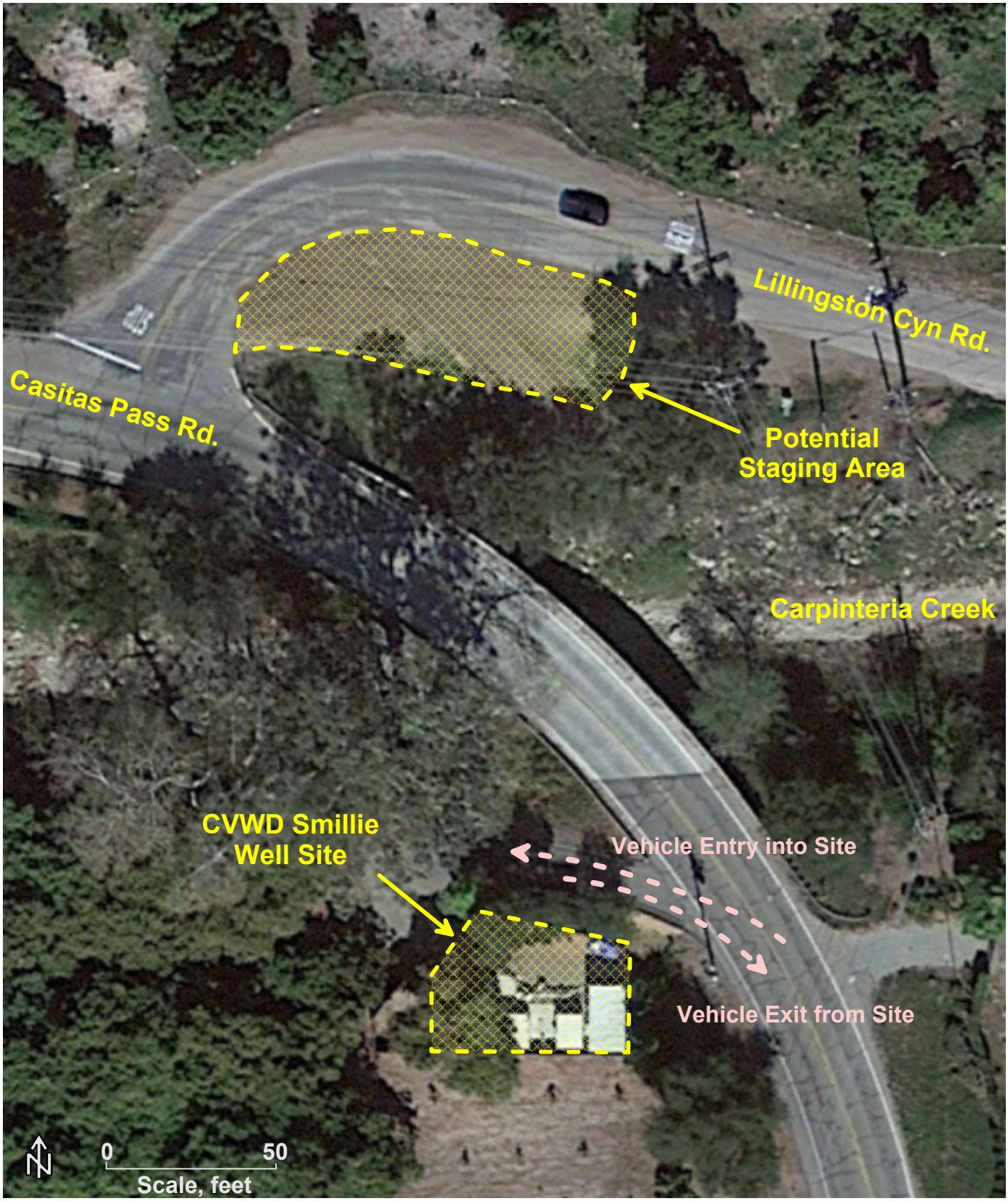
Schedule

We estimate that six weeks will be required to prepare plans, specifications and bid documents for the project, followed by a two-month bidding period, and another four to six weeks for contract award and establishment of a contract for the selected Contractor.

Based on our experience with well drilling and construction projects of a similar magnitude, we estimate that field operations can be completed in approximately ten weeks. During drilling, pilot hole drilling, reaming, and well construction, 24-hour operations will be necessary. All other aspects of work will be completed on an approximately daylight hours basis. A breakdown of the various components of field operations is provided in the following schedule.

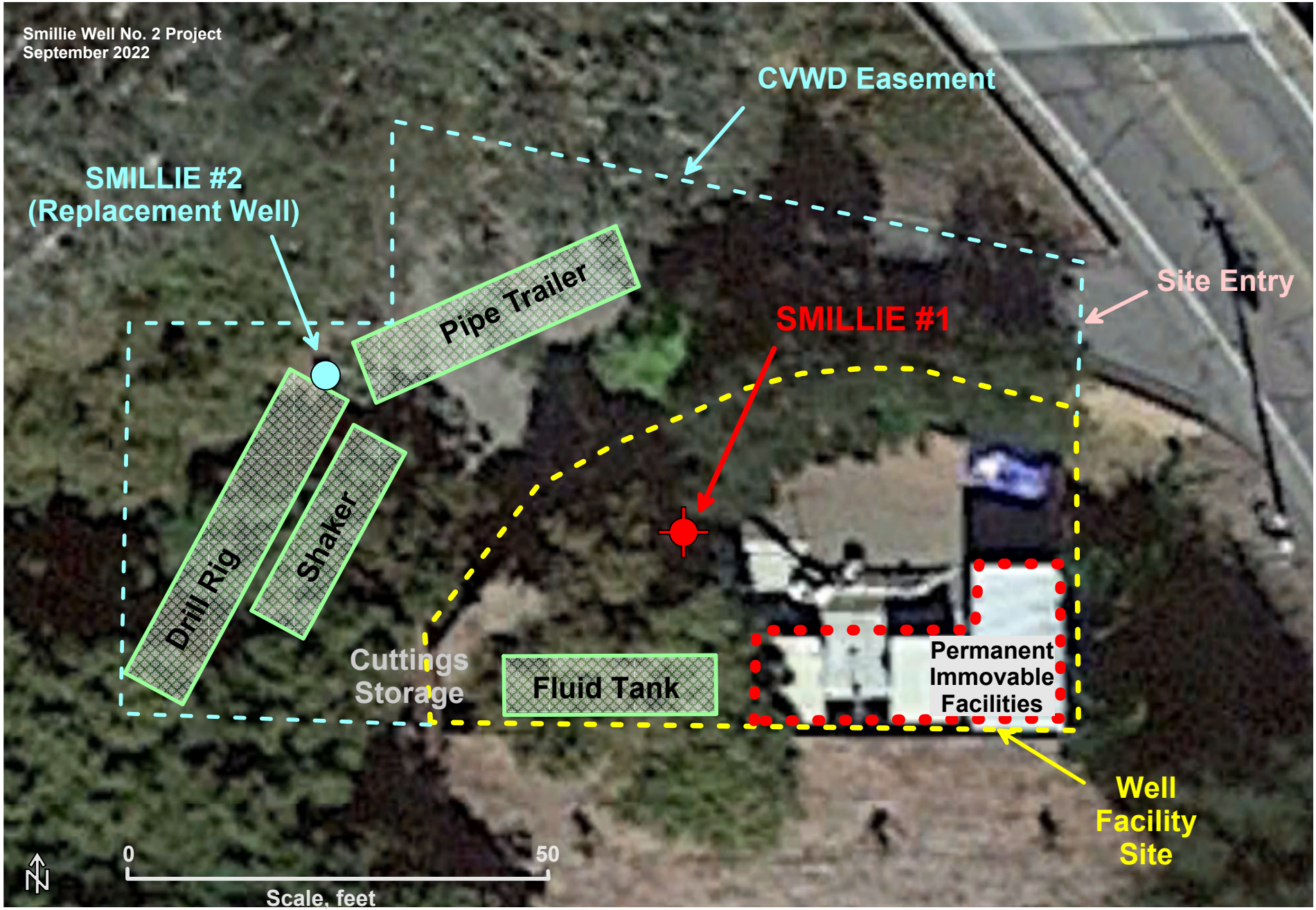
Estimate of Schedule for Field Operations





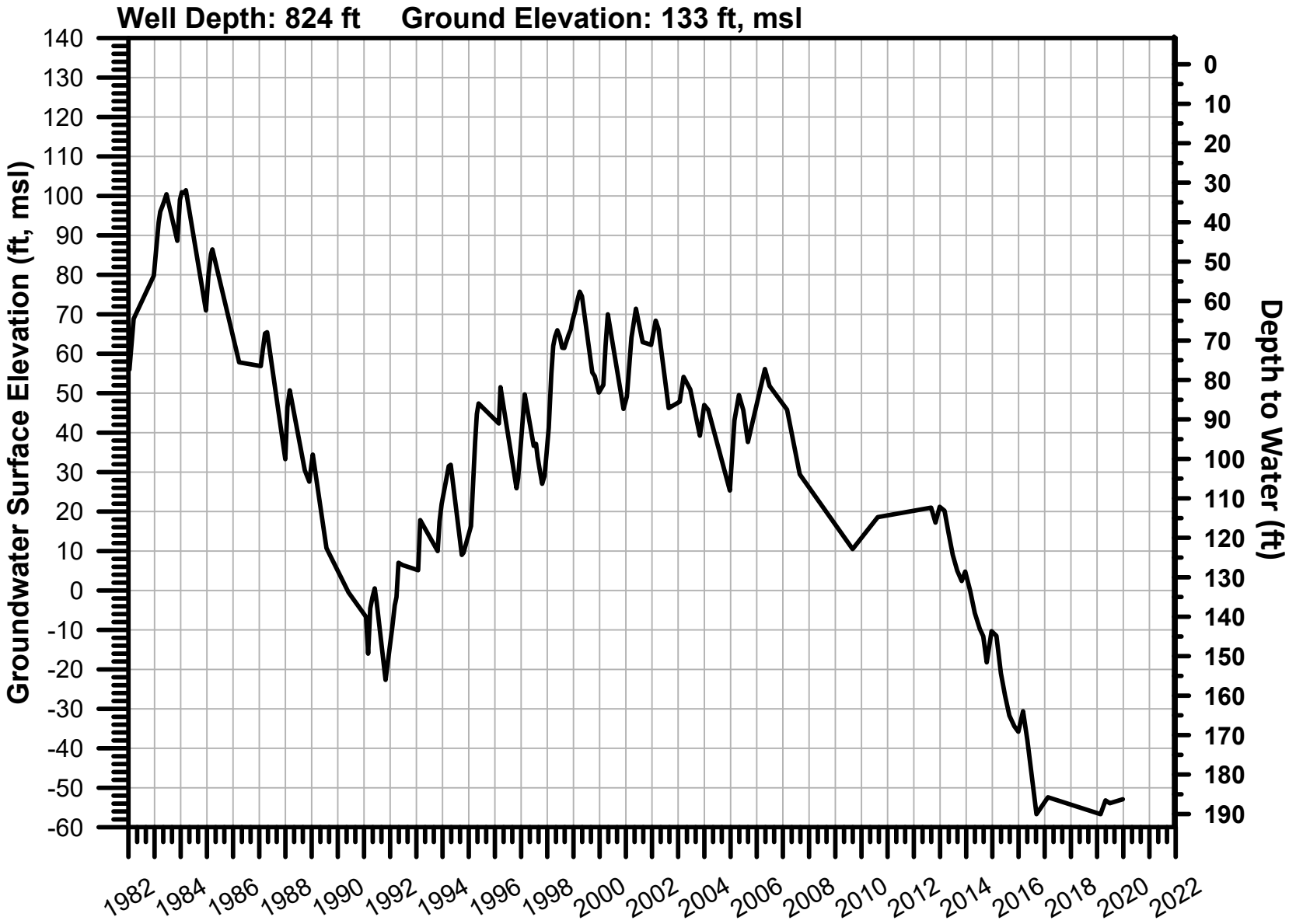
PUEBLO water resources

FIGURE 1. SITE LOCATION MAP
Smillie Well Replacement Project
Carpinteria Valley Water District



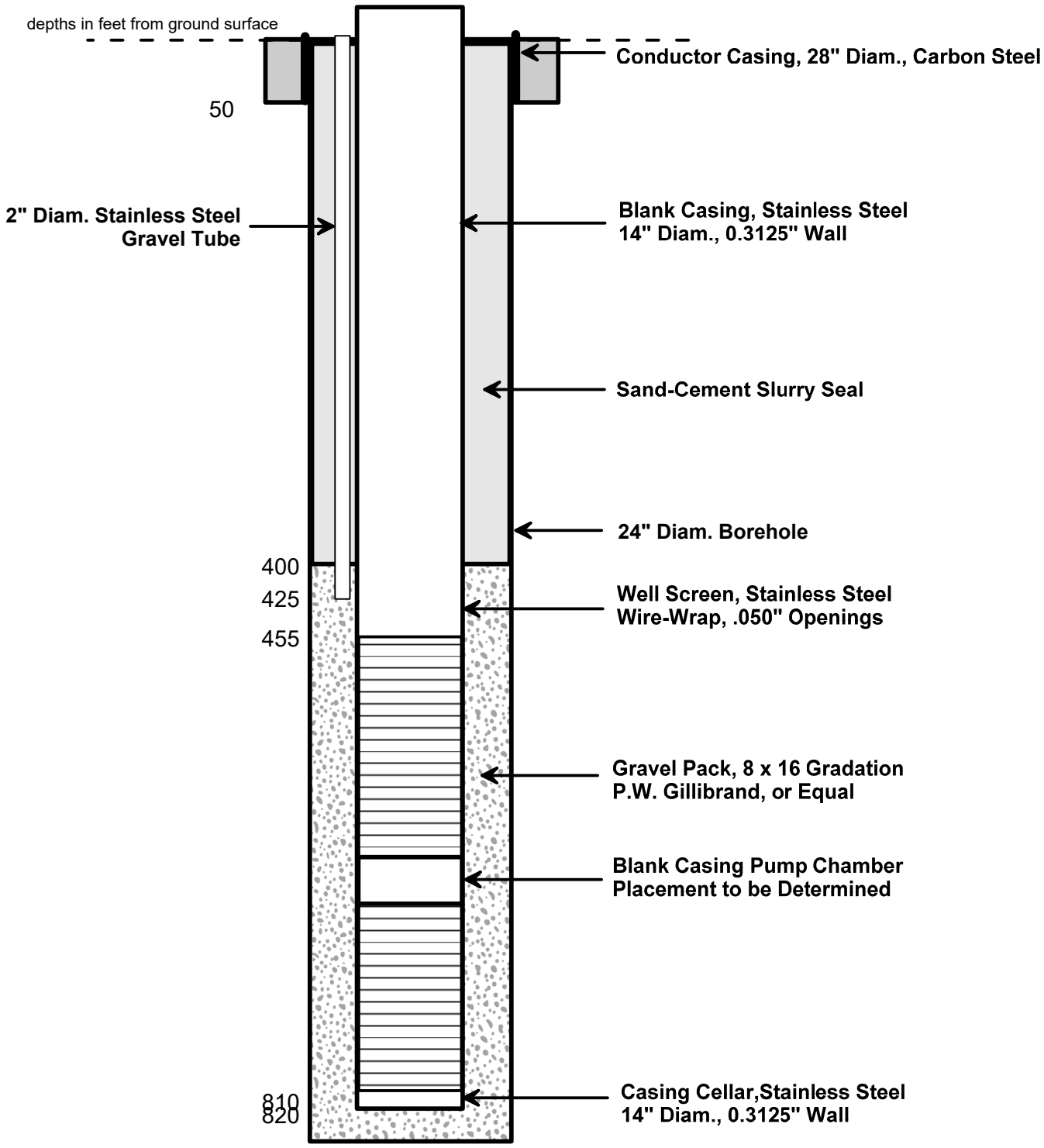
PUEBLO water resources

FIGURE 2. SITE LAYOUT MAP
Smillie Well Replacement Project
Carpinteria Valley Water District



PUEBLO water resources

FIGURE 3. SMILLIE WELL HYDROGRAPH
Smillie Well Replacement Project
Carpinteria Valley Water District

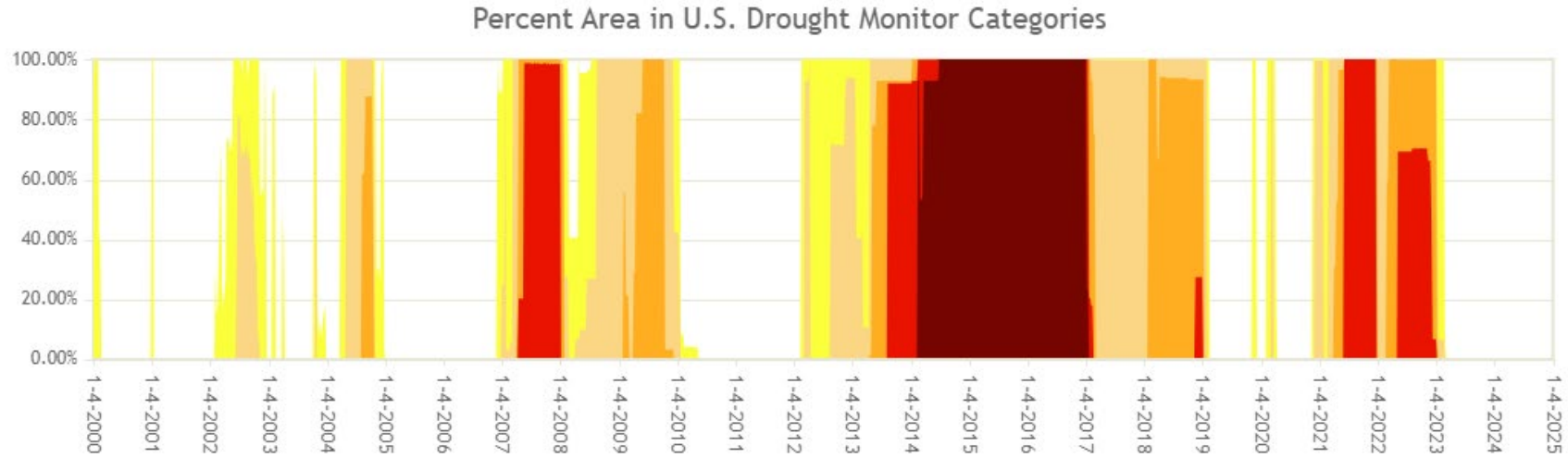


PUEBLO water resources

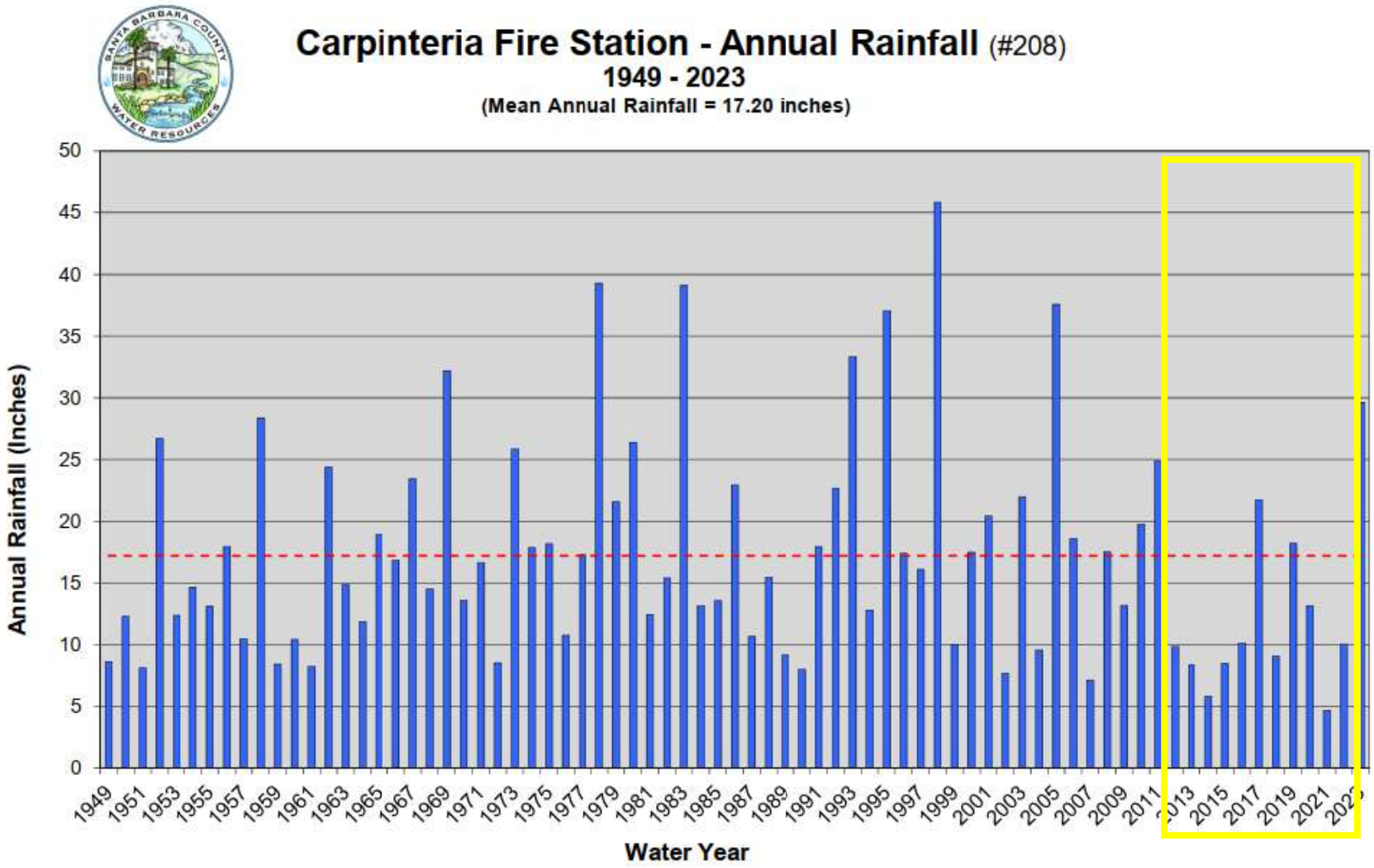
FIGURE 4. SMILLIE #2 WELL DRAWING
Smillie Well Replacement Project
Carpinteria Valley Water District

Historical Drought Conditions for Santa Barbara County, CA

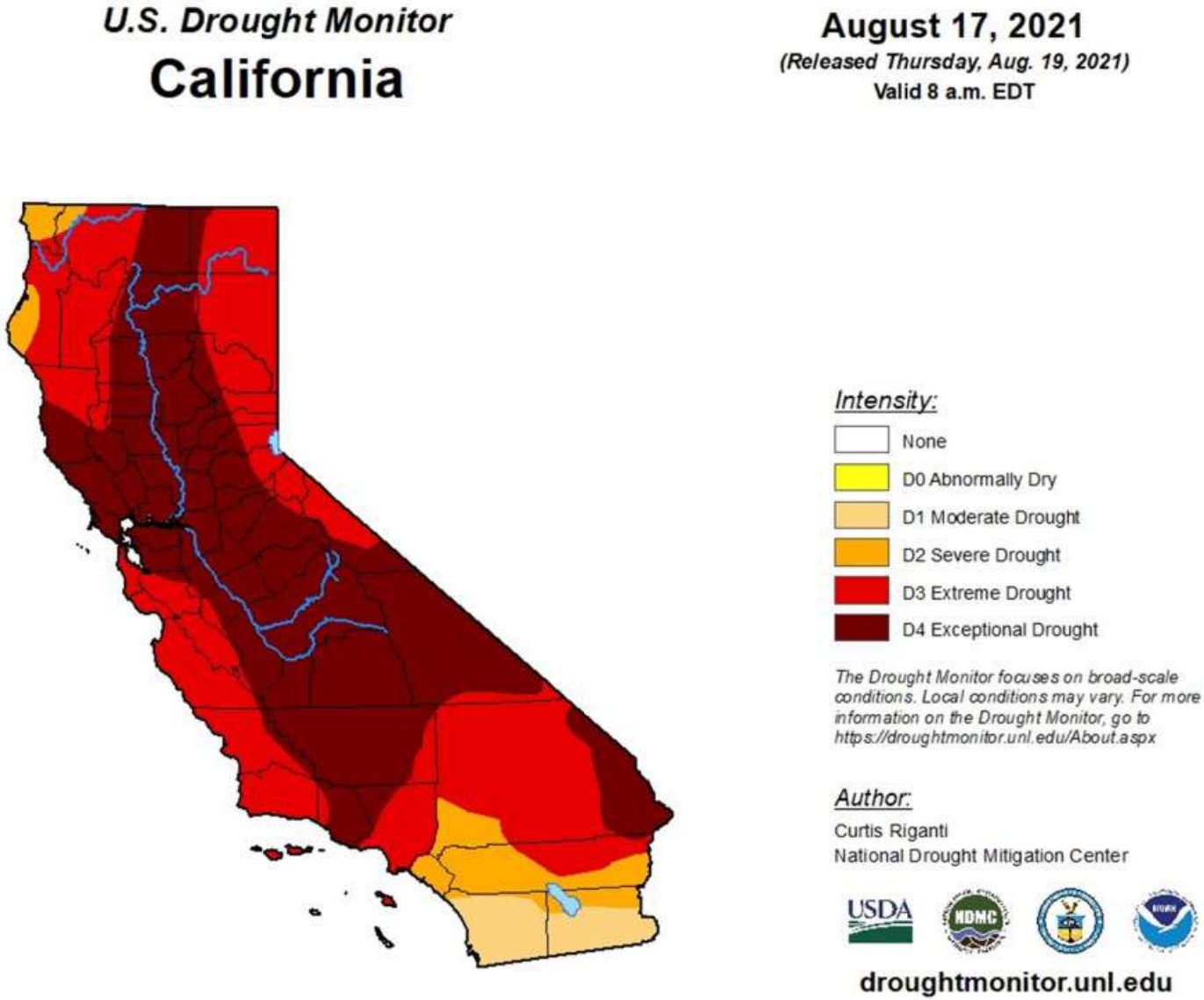
Intensity	By December of 2016, 100% of Santa Barbara County was in a D4 Exceptional Drought.	By August of 2021, 99.96% of Santa Barbara County was in a D4 Exceptional Drought.	By January of 2022, 99.96% of Santa Barbara County was in a D3 Extreme Drought.
None D0 (Abnormally Dry) D1 (Moderate Drought) D2 (Severe Drought) D3 (Extreme Drought) D4 (Exceptional Drought) No Data	D0-D4 12-6-2016 100.00% D1-D4 12-6-2016 100.00% D2-D4 12-6-2016 100.00% D3-D4 12-6-2016 100.00% D4 12-6-2016 100.00%	D0-D4 8-10-2021 100.00% D1-D4 8-10-2021 100.00% D2-D4 8-10-2021 99.96% D3-D4 8-10-2021 99.96% D4 8-10-2021 0.39%	



Source: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?fips_06083


Carpinteria Fire Station - Annual Rainfall (#208)
1949 - 2023
(Mean Annual Rainfall = 17.20 inches)
Annual Rainfall (Inches)
Water Year
0
5
10
15
20
25
30
35
40
45
50
1949
1951
1953
1955
1957
1959
1961
1963
1965
1967
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
2021

State-wide drought conditions August 2021



Water Supply Outlook August 11, 2021

Assumptions

- Cacuma allocation is 50% of normal year allocation for Water Year 2023
- Cacuma allocation is 0% of normal year allocation for Water Year 2023
- State Water Project allocation is 0% in Water Years 2023 and 2024
- Baseline demand is 4000 AFY

NO CONSERVATION			
	WY		
Water Supply	22	23	24
Cachuma	2658	2531	31
State	1142	0	200
Groundwater	1600	1500	1500
CAPP	0	0	0
Supplemental	1131	0	0
Conservation	0%	0%	0%
Demand	-4000	-4000	-4000
Carryover Balance	2531	31	-2269
Shortage	**0%**	**0%**	**57%**

Water Supply Outlook August 11, 2021

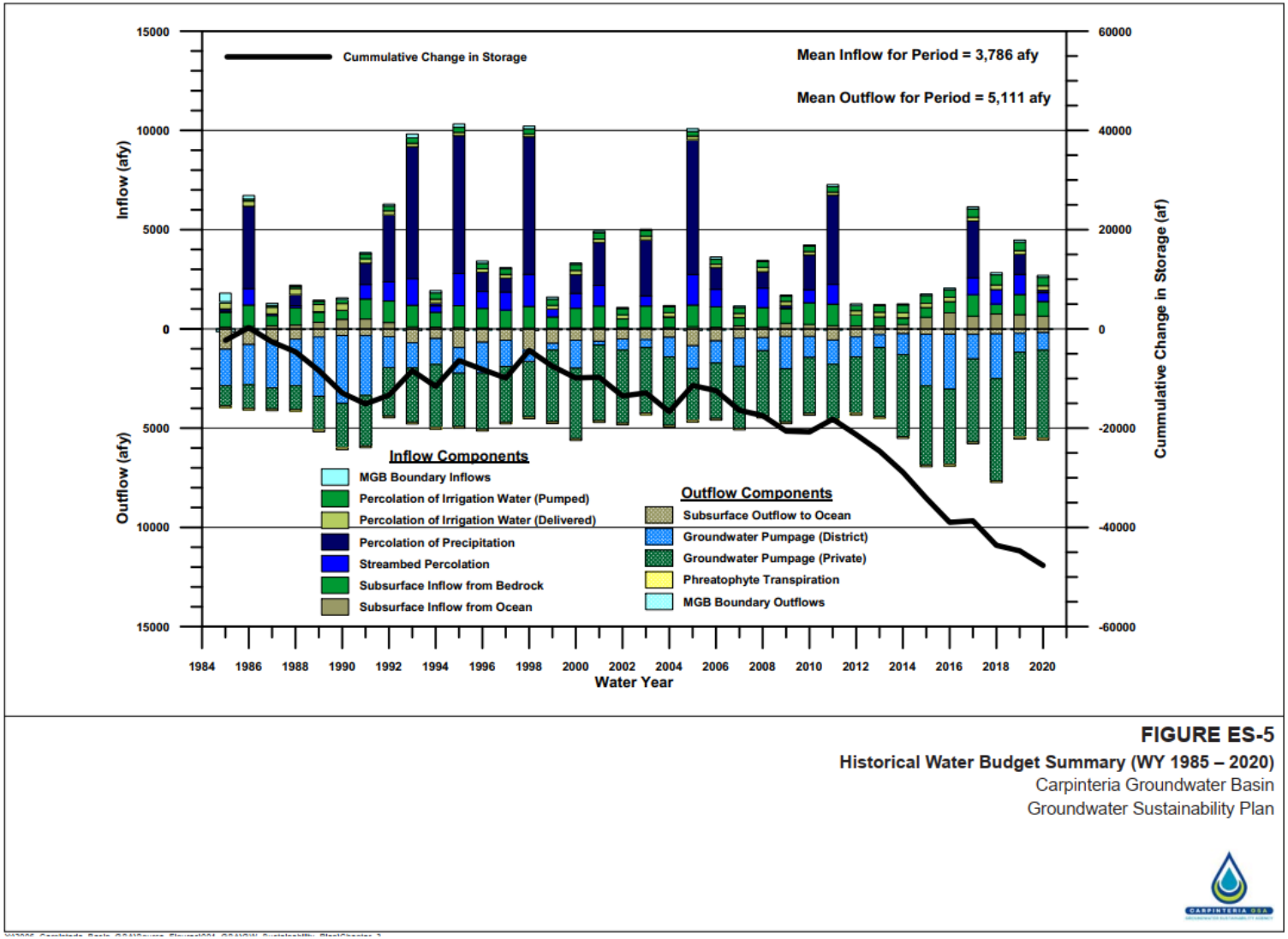


FIGURE ES-5
Historical Water Budget Summary (WY 1985 – 2020)
Carpinteria Groundwater Basin
Groundwater Sustainability Plan