1 Summary

1.1 Introduction

This environmental impact report (EIR) evaluates the potential for significant environmental impacts from the Santa Cruz Water Rights Project (Proposed Project). This summary highlights the major areas of importance in the environmental analysis for the Proposed Project, as required by Section 15123 of the California Environmental Quality Act (CEQA) Guidelines. It also provides a brief description of the Proposed Project, alternatives to the Proposed Project, and areas of controversy known to the City of Santa Cruz (City). In addition, this chapter provides a table summarizing: (1) the potential environmental impacts that would occur as the result of the Proposed Project; (2) the level of impact significance before mitigation; (3) the proposed mitigation measures that would avoid or reduce significant environmental impacts; and (4) the level of impact significance after mitigation measures are implemented.

1.2 Project Overview

1.2.1 Project Location and Setting

The Proposed Project involves the water system and areas served by the City of Santa Cruz (City);[1] the water service areas of San Lorenzo Valley Water District (SLVWD), Scotts Valley Water District (SVWD), Soquel Creek Water District (SqCWD), and Central Water District (CWD); and the remainder of the Santa Cruz Mid-County Groundwater Basin and the Santa Margarita Groundwater Basin. The Proposed Project is located within Santa Cruz County and is generally bounded by the unincorporated communities of Aptos and Le Selva Beach on the east, Bonny Doon Road on the west, Boulder Creek on the north, and the Pacific Ocean on the south.

The City's water supply system draws water from surface water sources, including two diversions on the San Lorenzo River (the Felton Diversion in Felton and the Tait Diversion in the City) and four diversions on local North Coast streams (Laguna Creek, Reggiardo Creek, Liddell Spring, and Majors Creek), which make up approximately 95% of the annual supply. That amount is supplemented, primarily during the dry season, by limited production from groundwater wells in the Santa Cruz Mid-County Groundwater Basin in unincorporated Santa Cruz County. The City stores water in Loch Lomond Reservoir in Ben Lomond, which is formed by Newell Creek Dam to help meet dry-season water demand and provide back-up supply during winter storms that make river diversions problematic due to turbidity issues. The City, like other water suppliers in Santa Cruz County, has no imported water supply from outside the region. Due to limited water supply and storage, the City faces inadequate water supply during dry years and critical shortages during drought years. See Chapter 3, Project Description, for additional information about the setting and water supply planning background for other neighboring water agencies.

1.2.2 City Water Supply Planning Background

Due to limited water supply and storage, the City faces inadequate water supply during dry years and critical shortages during drought years. The City has been pursuing possible new water supplies for the past several decades to address these shortages. Most recently, the Water Supply Advisory Committee (WSAC) Final Report on

[1] The City owns and operates a water system that diverts and serves water both within the City limits and outside of those limits. References to the City's water system, rights and supplies therefore refer to areas both inside and outside of the City limits.

Agreements and Recommendations (October 2015) provides the Water Supply Augmentation Strategy portfolio elements to address the agreed upon worst-year gap of 1.2 billion gallons per year during modeled worst-year conditions identified during the WSAC planning process, including the following:

- **Element 0: Additional water conservation** with a goal of achieving an additional 200 to 250 million gallons per year (mgy) of demand reduction by 2035 by expanding water conservation programs.
- **Element 1: Passive recharge of regional aquifers** by working to develop agreements for delivering surface water to the SqCWD and/or the SVWD[2] so they can rest their groundwater wells, help the aquifers recover, and potentially store water for use by the City in drought years.
- **Element 2: Active recharge of regional aquifers** by using existing infrastructure and potential new infrastructure in the Santa Cruz Mid-County Groundwater Basin, the Santa Margarita Groundwater Basin, or in both to store water that can be available for use by the City in drought years.
- **Element 3: A potable water supply using advanced-treated recycled water** as its source as a supplemental or replacement supply in the event the groundwater storage strategies described above prove insufficient to meet the goals of cost-effectiveness, timeliness, or yield. In the event advanced-treated recycled water does not meet the City's needs, desalination would become Element 3.

Implementation of the Proposed Project would support Elements 1 and 2 above.

1.2.3 Project Purpose and Objectives

The underlying purpose of the Proposed Project is to improve flexibility in operation of the City's water system while enhancing stream flows for local anadromous fisheries. During the development of the City's pending Anadromous Fisheries Habitat Conservation Plan (ASHCP), the City negotiated with the California Department of Fish and Wildlife (CDFW) and the National Marine Fisheries Service (NMFS) to develop levels of stream flows that would better protect federally listed Central California Coast coho salmon (coho) and Central California Coast steelhead (steelhead) in all watersheds from which the City diverts water (Agreed Flows). Incorporating these Agreed Flows into all City water rights is necessary to benefit local fisheries, specifically for coho and steelhead, but would further constrain the City's limited surface water supply. Consequently, the City needs to improve operational flexibility of the water system within existing rights, permits, and licenses to allow better use of limited water resources. To do this, the City is proposing water rights modifications to its existing rights, permits, and licenses to expand the authorized place of use (POU), to better utilize existing diversions, and to extend the City's time to put water to full beneficial use. The objectives for the Project are as follows:

1. Improve the flexibility with which the City operates the water system to facilitate the City's ability to meet drinking water demand while providing flow conditions protective of coho and steelhead.
2. Provide flow conditions that are protective of coho and steelhead within all streams from which the City diverts water, as negotiated with CDFW and NMFS during the preparation of the pending ASHCP, which is the habitat conservation plan being developed under the federal ESA and CESA.
3. To improve the City's limited storage and support the implementation of the City's Water Supply Augmentation Strategy Element 1 (passive recharge of regional aquifers via water transfers and exchanges) and Element 2 (active recharge of regional aquifers via ASR) in order to deliver a safe, adequate, reliable and environmentally sustainable water supply.

[2] While WSAC recommendations considered only delivering surface water to SqCWD and SVWD, current conceptual-level planning considers delivering surface water to SLVWD and CWD as well.

4. Facilitate opportunities within the City and regionally for conjunctive use[3] of the City's surface water rights in combination with groundwater, including by addressing significant barriers to implementing conjunctive use due to the place of use associated with the City's water-right permits and licenses to, among other things, assist in implementation of the "Water Transfers/In Lieu Groundwater Recharge" element of the Santa Cruz Mid-County Groundwater Basin Groundwater Sustainability Plan (GSP).
5. Provide more options for where and how the City can utilize its existing appropriative water rights.
6. Provide for the underground storage of surface water primarily to support more reliable and improved water supply by allowing the City to use such stored water during dry periods and also to contribute to the protection of groundwater quality from seawater intrusion per the Santa Cruz Mid-County Groundwater Basin GSP and to allow for the implementation of the "Aquifer Storage and Recovery" element of the Santa Cruz Mid-County Groundwater Basin GSP.
7. Remove potential operational constraints on City water rights that do not explicitly recognize direct diversion.
8. Allow additional time for the City to fully reach beneficial use under existing water-right permits at Felton.
9. Improve fish screening at the Felton Diversion and Tait Diversion and improve fish passage at the Felton Diversion. Consideration of fish passage improvements at Tait Diversion would be incorporated into future projects as required.
10. Address reliability and operational deficits at the Tait Diversion and Coast Pump Station to meet other project objectives.
11. Implement state policy favoring integrated regional water management by involving the City and other local agencies in "significantly improving" the "reliability of water supplies" by "diversifying water portfolios, taking advantage of local and regional opportunities, and considering a broad variety of water management strategies," specifically by making more extensive conjunctive use of the surface-water, groundwater and groundwater-storage resources available to the City and, when Agreed Flows and City demands are met, making excess surface water under the City's surface-water rights available to neighboring agencies who are dependent on overdrafted groundwater basins. (Water Code Section 10531(c).)
12. Consider other related actions or activities that would be foreseeable as a logical part in a chain of contemplated actions should the Proposed Project be approved, including facilities that would provide for ASR, water transfers, and water exchanges.

1.2.4 Project Characteristics

The Proposed Project includes proposed modifications to the City's existing water rights to improve flexibility in operation of the City's water system to better use limited water resources, while enhancing stream flows for local anadromous fisheries. The Proposed Project also includes water supply augmentation components and surface water diversion improvements that could be implemented after the water rights modifications are approved.

As shown in Table 1-1 and summarized below, the Proposed Project includes components that are considered in this EIR at a "project" level (project component) and components that are considered at a "programmatic" level (programmatic component), and therefore this EIR is both a project EIR and a programmatic EIR. The programmatic components of the Proposed Project would include potential future activities that may occur after the City water rights are modified. Because most of these activities are considered to be reasonably foreseeable as a logical part

[3] Conjunctive use refers to a range of actions and projects that provide for the coordinated management of surface water and groundwater supplies to increase total supplies and enhance water supply reliability. Conjunctive use actions and projects can also be used to sustainably manage groundwater supplies.

in a chain of contemplated actions, but the full physical extent and timing of these improvements are not known at this time, most of these activities are addressed in the EIR at a programmatic level. Some of these actions would be undertaken in conjunction with surrounding water districts and some would be undertaken solely by the City. If warranted, additional environmental analysis will be undertaken at the time these foreseeable future activities or actions are under active consideration. (See Chapter 2, Introduction, for a description of the process for determining the extent of any additional analysis that may be required.)

The project and programmatic components include the following:

- **Water rights modifications,** which are evaluated at a project level in this EIR, including modifications related to place of use, method of diversion, points of diversion and rediversion, underground storage and purpose of use, extension of time and stream bypass requirements for fish habitat (referred to in this EIR as Agreed Flows);
- **Water supply augmentation components**, which are evaluated at a project or programmatic level in this EIR, depending on what is known about the components, including:
    - Aquifer storage and recovery (ASR):
        - New ASR facilities at unidentified locations (referred to as "new ASR facilities" in this EIR), which are evaluated at a programmatic level.
        - Beltz ASR facilities at the existing Beltz well facilities (referred to as "Beltz ASR facilities" in this EIR), which are evaluated at a project level.
    - Water transfers and exchanges and associated intertie improvements, which are evaluated at a programmatic level in this EIR.
- **Surface water diversion improvements**, which are evaluated at a programmatic level in this EIR, including the Felton Diversion fish passage improvements and the Tait Diversion and Coast Pump Station improvements.

The subsections below further describe these project components and programmatic components.

Table 1-1. Project and Programmatic Components

Proposed Project Components	Project Components	Programmatic Components
WATER RIGHTS MODIFICATIONS		
Place of Use	✓	
Points of Diversion	✓	
Underground Storage and Purpose of Use	✓	
Method of Diversion	✓	
Extension of Time	✓	
Bypass Requirement (Agreed Flows)	✓	
INFRASTRUCTURE COMPONENTS		
Water Supply Augmentation		
Aquifer Storage and Recovery (ASR)		✓
New ASR Facilities at Unidentified Locations		✓
Beltz ASR Facilities at Existing Beltz Well Facilities	✓	
Water Transfers and Exchanges and Intertie Improvements		✓
Surface Water Diversion Improvements		
Felton Diversion Fish Passage Improvements		✓
Tait Diversion and Coast Pump Station Improvements		✓

1.2.4.1 Water Rights Modifications

Project components of the Proposed Project include modifications to the City's existing pre-1914 and post-1914 appropriative water rights. The City will pursue changes to its pre-1914 water rights through action by the Santa Cruz City Council and changes to its post-1914 permits and licenses through the filing of change and extension petitions with the State Water Resources Control Board (SWRCB). No change to the authorized amounts of diversions under any of the City's appropriative water rights is proposed as part of the Proposed Project. Overall, implementation of these modifications would provide the City greater flexibility in the operation of the water system while enhancing stream flows for local anadromous fisheries. The water rights modifications include the following:

- **Expansion of POUs.** The Proposed Project would expand the authorized POUs of the City's pre-1914 and post-1914 appropriative water rights to include the areas served by the City, two local groundwater basins, and the service areas of neighboring water agencies. Expanded POUs are necessary for improving the potential for conjunctive use of the region's resources with adjoining water agencies and within the region's groundwater basins.
- **Method of Diversion.** The Proposed Project would result in explicit authorization of direct diversion as a method of diversion under the City's Newell Creek License and Felton Permits, which is not explicitly authorized under the current license and permits.
- **Points of Diversion.** To provide for the needed flexibility in the operation of the City's water system, the Proposed Project would add points of diversion and rediversion. Specifically, the Proposed Project would add the City's existing Beltz system as points of rediversion[4] into and out of groundwater storage to the City's Tait Licenses, Felton Permits and pre-1914 appropriative rights. This would provide flexibility for utilizing the City's San Lorenzo River surface water supplies for the Beltz ASR subcomponent of the Proposed Project (see below). The Proposed Project would also add the Tait Diversion as a new point of diversion on the Felton Permits, which would give the City the option of diverting water under the existing Felton Diversion water rights at either the Felton Diversion or downstream at the Tait Diversion. This would provide the ability to divert water under the Felton Permits with or without activation of the Felton Diversion inflatable dam and improve operational flexibility. Additionally, when water under the Felton Permits would be diverted at the Tait Diversion, water would remain in the San Lorenzo River longer, bypassing the Felton Diversion before being diverted at the Tait Diversion, thus providing fisheries benefits.
- **Underground Storage and Purpose of Use.** In addition to adding points of rediversion into and out of groundwater in the Beltz system, as described above, the Proposed Project would add underground storage supplements to the City's Tait Licenses and Felton Permits to allow for the proposed Beltz ASR facilities of the Proposed Project. An underground storage supplement is required to be filed with the SWRCB for post-1914 water right permits and licenses seeking to divert surface water to groundwater aquifers to artificially recharge these aquifers for further beneficial use. The underground storage supplements to allow for the Beltz ASR facilities are the only underground storage supplements being pursued now because these facilities are the only proposed ASR facilities whose locations and proposed capacities are currently known. The City would not be able to implement and operate other ASR facilities under its post-1914 permits and licenses without submitting additional underground storage supplements to those permits and licenses to the SWRCB and obtaining the SWRCB's approval. See Section 1.2.4.2, Water Supply Augmentation Components, for additional information about ASR. Protection of water quality would also be added as a new purpose of use to all City appropriative water rights to support the use of surface water for ASR as it contributes to the protection of groundwater quality from seawater intrusion per the Santa Cruz Mid-County GSP.

[4] A point of rediversion is a point, other than the point of initial diversion, where controlled water is diverted from a natural stream or another water source. In this case, water would be rediverted into and out of groundwater storage in the Beltz system.

- **Extension of Time.** The Proposed Project would extend the time under the Felton Permits to December 31, 2043 in which the City could make full beneficial use of the 3,000 afy of diversion authorized by the Felton Permits. Additional time is needed by the City as (1) total water use has declined due to an extensive and successful water conservation program among other factors; (2) full implementation of the Agreed Flows (see below) necessitates increased flexibility within the water system, requiring additional time to fully reach beneficial use; and (3) water supply options that may be necessary to meet City water supply needs, including projects such as ASR, require time to implement.
- **Bypass Requirements (Agreed Flows).** The Proposed Project would include modifying City water rights to incorporate the bypass requirements for each water right the City negotiated with CDFW and NMFS during development of the pending ASHCP to better protect federally listed coho and steelhead in all watersheds from which the City diverts water. The Agreed Flows would be incorporated into both pre-1914 rights on the North Coast streams and post-1914 permits and licenses on the San Lorenzo River and Newell Creek. While it is expected that Agreed Flows will become terms and conditions of permits and authorizations issued under the FESA, CESA, and Section 1600 et seq. of the Fish and Game Code, the Proposed Project would commit the City to these flows regardless of the outcomes of these processes.

1.2.4.2 Water Supply Augmentation Components

Aquifer Storage and Recovery

As indicated in Section 1.2.2, City Water Supply Planning Background, the City's Water Supply Augmentation Strategy includes active recharge of regional aquifers, referred to as aquifer storage and recovery or ASR. ASR involves using existing infrastructure and potential new infrastructure to inject surface water, treated to drinking water standards, and storage of this water during normal or wet periods in local groundwater basins, which would act as underground storage reservoirs. This stored water can then be available for use by the City in dry periods via extraction.

The Proposed Project includes the City installing and operating ASR facilities within the Santa Cruz Mid-County Groundwater Basin inside or outside the areas served by the City, and in the Santa Margarita Groundwater Basin outside the areas served by the City. ASR would include new ASR facilities at unidentified locations (referred to as "new ASR facilities" in this EIR) and Beltz ASR facilities at the existing Beltz well facilities (referred to as "Beltz ASR facilities" in this EIR). Overall, ASR is a programmatic component of the Proposed Project; however, as a subcomponent of ASR, Beltz ASR facilities are a project component of the Proposed Project.

To the extent ASR facilities and operations would occur outside of the City's existing water-right place of use, they would be enabled by the Proposed Project's expansion of the POU of the City's appropriative water rights. As described in Section 1.2.4.1, Water Rights Modifications, the Proposed Project includes the addition of underground storage supplements to the City's post-1914 appropriative permits and licenses only for the Beltz ASR facilities because those are the only proposed ASR facilities whose locations and proposed capacities are currently known.

The total ASR capacity is intended to provide sufficient capacity to address the City's agreed-upon worst-year water supply gap of 1.2 billion gallons per year, described in Section 1.2.2, City Water Supply Planning Background. As a subcomponent of ASR, Beltz ASR would provide only a portion of the total ASR capacity at Beltz 8, 9, 10 and 12 groundwater well facilities and would include the installation of upgrades to the existing Beltz system to allow for injection of treated water from the City's GHWTP and subsequent extraction. The remainder of the total capacity would be provided at new ASR facilities. Further planning and analysis are required to determine locations for any potential

new ASR facilities. Actual capacity and operational characteristics for new ASR facilities and Beltz ASR facilities would be based on completion of ASR pilot programs, design-level groundwater modeling, and the ASR design process.

Standard operational practices for all ASR facilities would be implemented during development and operation of ASR facilities. Operation of ASR facilities would be consistent with applicable adopted existing or future GSPs and could contribute to groundwater sustainability of the Santa Cruz Mid-County Groundwater Basin and the Santa Margarita Groundwater Basin, depending on the facilities' location. Contribution to groundwater sustainability of the Santa Cruz Mid-County Groundwater Basin would also contribute to the protection of groundwater quality from seawater intrusion per the Santa Cruz Mid-County GSP in support of the proposed water quality beneficial use, identified in Section 1.2.4.1, Water Rights Modifications.

Water Transfers and Exchanges and Intertie Improvements

As indicated in Section 1.2.2, City Water Supply Planning Background, the City's Water Supply Augmentation Strategy also includes passive recharge of regional aquifers by transferring treated drinking water to other water districts in the area so they can rest their groundwater wells, help the aquifers recover, and potentially store water for use by the City in dry periods.

Modification of the City's appropriative water rights would facilitate the opportunity for potential future water transfers and exchanges with neighboring water agencies, including SVWD, SLVWD, SqCWD and CWD. Water transfers and exchanges and associated interties are evaluated as a programmatic component of the Proposed Project. Such transfers and exchanges would likely be provided for via agreements with defined terms related to timing, volume of water, water year conditions, return of water, etc., that would be developed between the City and one or more of the neighboring agencies. New or improved interties between the water systems of the City and of neighboring water agencies may be needed to facilitate future water transfers and exchanges once City water rights are modified. The Proposed Project anticipates these potential water transfers and exchanges and new and improved interties, which include new or upgraded pipelines and new or upgraded pump stations needed to transfer water between and through the services areas of the referenced water agencies. Specifically, the Proposed Project anticipates a new pipeline and pump station to intertie the water systems of the City and SVWD (referred to in this EIR as the City/SVWD intertie). Additionally, two segments of replacement piping, an upgraded pump station and two new pump stations are needed to intertie the water systems of the City, SqCWD and CWD (referred to in this EIR as the City/SqCWD/CWD intertie).

1.2.4.3 Surface Water Diversion Improvement Components

Improvements at the Felton Diversion and Tait Diversion and Coast Pump Station are included as programmatic components of the Proposed Project.

Felton Diversion Fish Passage Improvements

The Felton Diversion is a surface water diversion/intake on the San Lorenzo River that pumps raw water from the river to the City's Loch Lomond Reservoir. Proposed fish passage improvements at the Felton Diversion would provide for compliance with current fish passage and screening requirements. The modifications would be designed to support use of City water rights while improving passage for coho and steelhead. These improvements may include fish screen replacement, installation of a traveling brush system to keep the fish screens operating at optimum efficiency, and construction of a continuous downstream outmigration bypass route within the existing bypass channel with downstream opening slide gate.

Tait Diversion and Coast Pump Station Improvements

The Tait Diversion is located on a fairly straight, low-gradient section of the San Lorenzo River approximately 2.4 miles upstream of the mouth of the river and adjacent to the Coast Pump Station facility. Improvements at the Tait Diversion could include, but would not be limited to, (1) a new or modified intake design with increased capacity to allow the City the option of diverting water under the existing Felton Diversion water rights at either the Felton Diversion or at the Tait Diversion, (2) upstream and/or downstream hydraulic modifications, (3) improvements to the check dam, and (4) any required fish passage upgrades to meet current state and federal fisheries protection criteria. The River Pumps at the Coast Pump Station facility would also require improvements, which could include, but would not be limited to, (1) new pumps and motors, (2) primary and backup power upgrades, which could include upgrades to the Pacific Gas & Electric substation, (3) a new or modified concrete wet well, and (4) a solids handling system.

1.2.4.4 Standard Operational and Construction Practices

The Proposed Project includes standard operational practices to provide for the implementation of ramping rates at all City diversion facilities. Ramping rates are diversion rates that gradually alter diversions from a stream channel to limit the downstream rate of change to stream stage, which is the water level in a stream or river. The operation of all ASR injections and extractions will be consistent with the sustainable management criteria and will avoid any undesirable results as identified in the adopted Santa Cruz Mid-County Groundwater Basin GSP and in any future revisions to the GSP. ASR facilities and associated injections and extractions in the Santa Margarita Groundwater Basin will be planned to be installed and operated after the Santa Margarita Groundwater Basin GSP is prepared, adopted, and submitted to the Department of Water Resources in January 2022. The proposed timing will provide for ASR injections and extractions consistent with the sustainable management criteria, and will avoid any undesirable results identified in the pending Santa Margarita Groundwater Basin GSP and in any future revisions to the GSP. ASR facilities will also be permitted, constructed, and operated in accordance with the SWRCB Water Quality Order 2012-0010, General Waste Discharge Requirements for Aquifer Storage and Recovery Projects that Inject Drinking Water into Groundwater, which provides for compliance with applicable regulations and policies, including the RWQCB Basin Plans and State Water Board Resolution 68-18 (the Antidegradation Policy). Additionally, stream diversions for ASR injections and to support City water transfers and/or exchanges will be avoided during certain dry conditions.

The Proposed Project also includes standard construction practices to provide for erosion control, air quality control, water quality protection, in-channel work measures including those related to dewatering, general habitat protection, and other construction practices.

1.3 Impact Summary

Table 1-3 on page 1-12 below provides a complete list of the Proposed Project's environmental impacts, including the level of significance before and after mitigation, based on the analysis and conclusions presented in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. Significant and unavoidable impacts have been identified in this EIR related to temporary construction noise associated with well drilling at new ASR facilities and at Beltz 9 ASR facility, as listed in Table 1-3 (see Impact NOI-2 and Impact UTL-1). For information regarding how the alternatives to the Proposed Project, as identified in Section 1.4, Alternatives to the Proposed Project, would address these same environmental impacts, see Table 8-6 in Chapter 8, Alternatives.

1.4 Alternatives to the Proposed Project

CEQA Guidelines Section 15126.6 requires that an EIR describe and evaluate alternatives to the Proposed Project that feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant effects of the project. As most identified impacts of the Proposed Project relate to the actual construction of various project and programmatic infrastructure components, the alternatives selected consider no or reduced infrastructure components. The following alternatives are evaluated in Chapter 8, Alternatives, and summarized in Table 1-2:

- **No Project Alternative** – The No Project Alternative are the circumstances under which the Proposed Project does not proceed.
- **Alternative 1** – Agreed Flows only without other Proposed Project components.
- **Alternative 2** – Agreed Flows with all Proposed Project components except there is no place of use expansion, which means that there are no water transfers to neighboring water agencies, and that ASR is possible only within the areas served by the City.
- **Alternative 3** – Agreed Flows with all Proposed Project components except ASR.

Table 1-2. Summary of Alternatives

Proposed Project Components	Inclusion of Proposed Project Components in Alternatives			
	No Project Alternative	*Alternative 1*	*Alternative 2*	*Alternative 3*
Agreed Flows	No	Yes	Yes	Yes
Place of Use Expansion	No	No	No	Yes
Other Water Rights Modifications	No	No	Yes	Yes
Aquifer Storage and Recovery	No	No	Yes, but only in areas within City's existing place of use	No
Water Transfers and Intertie Improvements	No	No	No	Yes
Surface Water Diversion Improvements	No	No	Yes	Yes
Relevant Standard Operational and Construction Practices	No	Yes	Yes	Yes

Table 8-6 in Chapter 8, Alternatives, presents a comparison of project impacts between the Proposed Project and the alternatives. The No Project Alternative would reduce or avoid impacts to some environmental resources, as would Alternatives 1, 2, and 3. Additionally, the significant unavoidable construction noise impact due to well drilling activities for the new ASR facilities and the Beltz 9 ASR facility (Impacts NOI-1 and UTL-1) would be avoided under the No Project Alternative, and Alternatives 1 and 3 as no well drilling for these facilities would be required under these alternatives. However, none of the alternatives would realize the same benefits of the Proposed Project to recreational uses due to increased lake levels at Loch Lomond Reservoir (see Impact REC-2). Specifically, the beneficial impacts of the Proposed Project related to recreational uses due to increased lake levels at Loch Lomond Reservoir (see Impact REC-2) would be potentially significant and unavoidable for the No Project Alternative and Alternative 1, and while this impact under Alternatives 2 and 3 would also be beneficial, the improvement of

conditions for boating under these alternatives would be less than for the Proposed Project. Additionally, the alternatives would not provide sufficient additional water supply to meet projected demand in the areas served by the City during currently constrained dry periods (see Impact UTL-2), and this impact would be potentially significant and unavoidable for all of the alternatives until an alternative source of water supply is developed. Given this, the No Project Alternative is not the environmentally superior alternative and therefore an environmentally superior alternative among the other alternatives does not need to be identified under CEQA Guidelines Section 15126.6(e)(2).

Regardless, the City has concluded that the Proposed Project is the environmentally superior alternative. Most importantly, because none of the alternatives includes the full panoply of the components of the Proposed Project (such as water transfers and ASR) intended to facilitate regional groundwater stabilization and conjunctive use, the Proposed Project has the greatest environmental benefit to regional groundwater conditions. In addition, the Proposed Project would avoid the potentially significant and unavoidable water supply impact of all of the alternatives and the potentially significant and unavoidable recreation impact of the No Project Alternative and Alternative 1 and would reduce all impacts to less-than-significant levels with identified mitigation measures, with the exception of temporary construction noise impacts from ASR well-drilling activities. In the City's judgment, the groundwater benefits of the Proposed Project outweigh in importance the limited significant and unavoidable noise impacts associated with temporary ASR well-drilling activities. Given the enormous importance of stabilizing groundwater basins in California, as the Legislature found in enacting the Sustainable Groundwater Management Act, the City is unable to conclude that the short-term noise impacts of the Proposed Project compel the conclusion that alternatives with fewer or no ASR facilities are environmentally superior to the Proposed Project. See Chapter 8 for a full discussion of project alternatives.

1.5 Known Areas of Controversy

1.5.1 Scoping Comments

A Notice of Preparation (NOP) and Initial Study (IS) for the Proposed Project was circulated for a 30-day comment period from October 15 to November 14, 2018 to determine the scope and extent of environmental issues to be addressed in this EIR. Two agency and public scoping meetings were held on November 7, 2018 and November 8, 2018 on the scope of the EIR's analyses. In response to the NOP, written comments were received from thirteen public agencies, organizations, and individuals. The City of Santa Cruz, as the Lead Agency, has identified areas of concern based on the response to the NOP/IS. The NOP/IS and public comments received in response to the NOP/IS are included in Appendix A.

The comments received during the NOP comment period indicate that the areas of controversy associated with the Proposed Project include: (1) whether the City's pending ASHCP should be completed before the Proposed Project moves forward; (2) whether the proposed Agreed Flows are sufficiently protective of fisheries; (3) whether the various water rights modifications would impact salmonids; (4) whether the water rights modifications would overdraft the Santa Margarita Groundwater Basin and affect SLVWD customers; and (5) whether the Proposed Project would somehow facilitate population growth.

All substantive environmental issues raised in the comment letters received in response to the NOP/IS have been addressed or otherwise considered during preparation of this Draft EIR.

1.5.2 Water Rights Petition Protests

In response to the City's pending water-right petitions submitted to the SWRCB in January 2021, two letters were received as a protest to these petitions including from the SLVWD and San Andreas Land Conservancy. SLVWD's protest expresses concerns about: (1) SLVWD's access to water from the City's Loch Lomond Reservoir water under the two agencies' contract; and (2) the effect of the City's proposed changes to minimum flows at the Big Trees gage below Felton. The San Andreas Land Conservancy protest expresses concern about: (1) the CEQA process; (2) the units of water volume and flow used in the petitions; (3) the City's request for extension of time for water-right Permits 16123 and 16601; (4) environmental issues, including fish, wildlife, and instream flows; (5) underground storage of surface water; (6) proposed bypass flows and involvement of CDFW and NMFS; (7) direct diversion from Newell Creek; (8) expansion of place of use; and (9) mitigation measures.

The City's pending water-rights petitions, the protest letters from the SLVWD and San Andreas Land Conservancy, and the City's responses to these letters that include a letter from CDFW to the SWRCB are included in Appendix B of this Draft EIR. All substantive environmental issues raised in the protest letters received in response to the City's water-right petitions have been addressed or otherwise considered during preparation of this Draft EIR.

1.6 Issues to be Resolved

CEQA Guidelines Section 15123 requires the EIR summary to identify "issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects." This EIR has presented mitigation measures and project alternatives, and the City Council will consider the Final EIR when considering the Proposed Project. In considering whether to approve the Proposed Project, the City Council will take into consideration the environmental consequences of the Proposed Project with mitigation measures and project alternatives, as well as other factors related to feasibility. The City Council will also consider the extent to which the project alternatives, would meet the underlying purposes of the Proposed Project and whether the alternatives would meet the City's specific project objectives.

Table 1-3. Summary of Project Impacts

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Air Quality			
Impact AIR-1: Conflict with an Applicable Air Quality Plan. Construction and operation of the Proposed Project would result in emissions of criteria pollutants, but would not exceed adopted thresholds of significance and therefore would not conflict with the MBARD's AQMP.	Less than Significant	None	Less than Significant
Impact AIR-2: Criteria Pollutant Emissions. Construction and operation of the Proposed Project would result in emissions of criteria pollutants, but would not exceed adopted thresholds of significance, violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	Less than Significant	None	Less than Significant
Impact AIR-3: Exposure of Sensitive Receptors. Construction and operation of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	None	Less than Significant
Impact AIR-4: Result in Other Emissions Adversely Affecting a Substantial Number of People. Construction and operation of the Proposed Project would not result in other emissions that would adversely affect a substantial number of people.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact AIR-5: Cumulative Air Quality Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to air quality, with the exception of substantial pollutant concentrations (Significance Standard C), but the Proposed Project's contribution to this impact would not cumulatively considerable.	Less than Significant	None	Less than Significant
Biological Resources			
Impact BIO-1A: Special-Status Species – Fish. Construction of the Proposed Project could have a substantial adverse effect on special-status fish, but would not interfere with the movement of special-status fish, reduce the habitat, cause a population to drop below self-sustaining levels, or substantially reduce the number or restrict the range of any special-status fish species.	Potentially Significant	**MM BIO-1: Project Siting (Applies to New Aquifer Storage and Recovery Facilities, Intertie Improvements, and Tait Diversion and Coast Pump Station Improvements).** The City shall locate construction activities, including staging, on and adjacent to current development to the maximum extent feasible. All worker parking, equipment storage, and laydown areas should occur within developed areas and maintained rights-of-way, to the extent possible. Dirt or gravel pull-offs to the side of existing roads shall not be used except for temporary staging areas. To minimize temporary disturbances, the City shall restrict all vehicle traffic to established roads, construction areas, and other designated area. If ground disturbing activities associated with staging and work areas will occur outside existing developed areas and maintained rights-of-way, avoidance and minimization of impacts to special-status species and their habitats, sensitive vegetation communities, and jurisdictional aquatic resources shall be prioritized during the site selection process. Other Proposed Project mitigation measures will provide for compensatory mitigation to address potentially significant impacts to special-status species and their habitats (MM BIO-4 through MM-BIO-10), sensitive vegetation communities (MM BIO-11), and jurisdictional aquatic resources (MM BIO-12 through MM BIO-14).	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		MM BIO-2: Instream Construction (Applies to Tait Diversion and Coast Pump Station Improvements). All instream construction activities shall be limited to the low-flow period between June 15 through November 1, except by extension approved by the California Department of Fish and Wildlife (CDFW) and National Marine Fisheries Service (NMFS). If an extension of instream construction activities is determined necessary beyond the low-flow period, then the City shall provide the CDFW and NMFS with a rationale and method that ensures protection of fish species. **MM BIO-3: Aquatic Vertebrate Rescue and Relocation Plan (Applies to Tait Diversion and Coast Pump Station Improvements).** If native fish or native aquatic vertebrates are present during construction of a new or modified intake design, check dam modifications/notching, Coanda intake screen, and other required fish passage upgrades at the Tait Diversion facility, a native fish and aquatic vertebrate rescue and relocation plan shall be prepared. The plan shall be implemented by a qualified biologist during dewatering to ensure that significant numbers of native fish and aquatic vertebrates are not stranded.	
Operation of the Proposed Project would not have such substantial adverse effects.	Less than Significant	None	Less than Significant
Impact BIO-1B: Special-Status Species – Other Wildlife. Construction of the Proposed Project could have a substantial adverse effect on other special-status wildlife, but would not interfere substantially with the movement of special-status wildlife, and would not reduce habitat, cause a population to drop below self-sustaining levels, or substantially reduce the number or restrict the range of any special-status wildlife species.	Potentially Significant	**MM BIO-1**, **MM BIO-2**, and **MM BIO-3** described above for Impact BIO-1A **MM BIO-4: Preconstruction Nesting Bird Survey (Applies to New Aquifer Storage and Recovery [ASR] Facilities and Beltz ASR Facilities, Intertie Improvements, Felton Diversion Improvements, and Tait Diversion and Coast Pump Station Improvements).** During the nesting season (February 1 – August 31), no more than two weeks prior to any ground disturbing activities, including removal of vegetation and clearing and grubbing activities, a nesting bird survey shall be completed by a qualified biologist to determine if any native birds are nesting in or adjacent to the study area (including within a 50-foot buffer for passerine species and a 250-foot buffer for raptors). If any active nests of native	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		birds are observed during surveys, an avoidance buffer around the nests shall be established in the field to ensure compliance with California Fish and Game Code Section 3503. The avoidance buffer shall be determined by a qualified biologist in coordination with City staff, based on species, location, and extent and type of planned construction activity. Impacts to active nests shall be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. **MM BIO-5: Preconstruction Wildlife Surveys (Applies to New Aquifer Storage and Recovery Facilities, Intertie Improvements, and Tait Diversion and Coast Pump Station Improvements).** A qualified biologist shall conduct preconstruction surveys of all ground disturbance areas within off-pavement project footprint areas to determine if special-status wildlife species are present prior to the start of construction. The biologist will conduct these surveys no more than two weeks prior to the beginning of construction. **MM BIO-6: Exclusionary Fencing (Applies to New Aquifer Storage and Recovery Facilities, Intertie Improvements, and Tait Diversion and Coast Pump Station Improvements).** High-visibility fencing for Environmentally Sensitive Areas shall be installed around all adjacent special-status species identified during the preconstruction surveys, which shall be retained and not disturbed by the Project, to preclude encroachment within the root-zone of these plants by construction crews or vehicles. A biological monitor shall also accompany the work crew during excavation and installation of exclusion fencing to prevent harm to species that may be active present and moving along the fence route. Buffers that are established around active bird nests and special-status species (including potentially active woodrat nests) to be avoided shall be delineated with flagging. Buffers and fencing for nesting birds shall be maintained until the biological monitor verifies that the birds have fledged. All other fencing shall be maintained in good repair throughout the entire construction period.	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		MM BIO-7: Biological Construction Monitoring (Applies to New Aquifer Storage and Recovery Facilities, Intertie Improvements, and Tait Diversion and Coast Pump Station Improvements). A qualified biologist shall monitor vegetation removal and ground disturbing activities during all work hours for off-pavement work or once a week for all other construction activities. The monitor shall check the exclusion fencing and buffers for active nesting birds once a week, and shall verify when birds have fledged if found present before construction. The biologist shall have stop-work authority in the event that a protected species is found within the active construction footprint. During construction, the biological monitor shall keep a daily observation log and a photo log to describe monitoring activities, remedial actions, non-compliance, and other issues and actions taken. These logs shall be kept on-site and made available for inspection by agency personnel. **MM BIO-8: Species Relocation (Applies to New Aquifer Storage and Recovery Facilities, Intertie Improvements, and Tait Diversion and Coast Pump Station Improvements).** If special-status wildlife species are observed within the construction area prior to or during construction activities, the biologist shall capture and relocate such individuals out of the area affected by construction activities to nearby habitat that has equivalent value to support the species. The biologist shall identify suitable habitats as potential release sites prior to start of construction activities. If the special-status species is a federally- or state-listed as threatened or endangered, the biologist shall notify the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and/or National Marine Fisheries Service, as appropriate, prior to capture and relocation to obtain approval. **MM BIO-9: Entrapment Avoidance (Applies to New Aquifer Storage and Recovery Facilities, Intertie Improvements, and Tait Diversion and Coast Pump Station Improvements).** The construction contractor shall cover all construction-related holes in the ground overnight to prevent entrapment of any native wildlife species. The monitoring biologist shall inspect all construction pipes, culverts, or similar structures that are stored at the work	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		area for one or more nights before the pipe is used or moved. If wildlife species are present, they shall be allowed to exit on their own or a qualified biologist shall move them out of the construction area to nearby habitat that has equivalent value to support the species. If special-status species are present and are federally or state-listed as threatened or endangered, the biologist shall notify the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and/or National Marine Fisheries Service, as appropriate, prior to capture and relocation to obtain approval.	
Operation of the Proposed Project would not have such substantial adverse effects.	Less than Significant	None	Less than Significant
Impact BIO-1C: Special-Status Species – Plants. Construction of the Proposed Project could have a substantial adverse effect on special-status plants, but would not threaten to eliminate a plant community or restrict the range of any special-status plant species.	Potentially Significant	**MM BIO-1** described above for Impact BIO-1A **MM BIO-10: Preconstruction Special-Status Plant Surveys and Compensation (Applies to New Aquifer Storage and Recovery Facilities and Intertie Improvements).** If ground-disturbing activities associated with staging and work areas occur outside existing developed areas and maintained rights-of-way, a qualified biologist shall conduct a focused botanical survey for special-status plants during the appropriate bloom period for each species. If special-status species are not detected, no further surveys or mitigation would be necessary. If any individuals or populations are detected, the location(s) shall be mapped, and a plan focused on compensating for impacts to special-status plants shall be developed and include the following elements and criteria. This plan shall be a component of the project's Habitat Mitigation and Monitoring Plan described in MM BIO-11: a. A description of any areas of habitat occupied by special-status plants to be preserved and/or removed by the project; b. Identification and evaluation of the suitability of on-site or off-site areas for preservation, restoration, enhancement or translocation;	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		c. Analysis of species-specific requirements and considerations and specific criteria for success relative to the project's impact on this species and restoration, enhancement or translocation; d. A description of proposed methods of preservation, restoration, enhancement, and/or translocation; e. A description of specific performance standards, including a required replacement ratio and minimum success standard of 1:1 for impacted individuals or populations; f. A monitoring and reporting program to ensure mitigation success; and g. A description of adaptive management and associated remedial measures to be implemented in the event that performance standards are not achieved.	
Operation of the Proposed Project would not have such substantial adverse effects.	Less than Significant	None	Less than Significant
Impact BIO-2: Riparian and Sensitive Vegetation Communities. Construction of the Proposed Project could have a substantial adverse effect on riparian and sensitive vegetation communities, but would not threaten to eliminate a plant community.	Potentially Significant	**MM BIO-1** described above for Impact BIO-1A **MM BIO-11: Sensitive Vegetation Communities Compensation (Applies to New Aquifer Storage and Recovery Facilities, Intertie Improvements, and Tait Diversion and Coast Pump Station Improvements).** Direct impacts to sensitive vegetation communities shall be mitigated via a combination of on-site and off-site measures. On-site measures shall include rehabilitation for areas temporarily impacted at a 1:1 mitigation ratio, and enhancement for areas permanently impacted at a 2:1 mitigation ratio. Areas temporarily impacted shall be returned to conditions similar to those that existed prior to grading and/or ground-disturbing activities. It is anticipated that a one-time restoration effort at the completion of the project followed by monitoring and invasive weed removal for a minimum of 3 years would adequately compensate for the direct temporary impacts to these vegetation communities. Areas permanently impacted shall be mitigated	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		through on-site enhancement activities including removal of non-native and invasive species for a minimum of 3 years. If additional area is needed to compensate for permanent impacts at a 2:1 ratio, then an off-site location will be identified and evaluated. A Habitat Mitigation and Monitoring Plan shall be prepared and implemented to compensate for the loss of all sensitive vegetation communities (see below). Rehabilitation and enhancement activities with Zayante soils, such as along the City/Scotts Valley Water District intertie, will be revegetated with plants native to the Zayante Sandhills, such as sticky monkeyflower (*Mimulus aurantiacus*), deer weed (*Lotus scoparius*), and silver bush lupine (*Lupinus albifrons* var. *albifrons*). These native plants will provide suitable habitat conditions for special-status species that might eventually colonize the temporarily impacted portion of the impact area. These revegetated areas will not include any landscape elements that degrade habitat for the special-status species, including mulch, bark, weed matting, rock, aggregate, or turf grass. The Habitat Mitigation and Monitoring Plan shall detail the habitat restoration activities and shall specify the criteria and standards by which the revegetation and restoration actions will compensate for impacts of the Proposed Project on sensitive vegetation communities and shall at a minimum include discussion of the following: a. The rehabilitation and enhancement objectives, type, and amount of revegetation to be implemented taking into account enhanced areas where non-native invasive vegetation is removed and replanting specifications that take into natural regeneration of native species when applicable. b. The specific methods to be employed for revegetation. c. Success criteria and monitoring requirements to ensure vegetation community restoration success. d. Remedial measures to be implemented in the event that performance standards are not achieved.	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Operation of the Proposed Project would not have such substantial adverse effects.	Less than Significant	None	Less than Significant
Impact BIO-3: Jurisdictional Aquatic Resources. Construction of the Proposed Project could have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, or hydrological interruption.	Potentially Significant	**MM BIO-2** described above for Impact BIO-1A **MM BIO-12: Preconstruction Jurisdictional Delineation (Applies to New Aquifer Storage and Recovery Facilities and Tait Diversion and Coast Pump Station Improvements).** If ground disturbing activities associated with staging and work areas will occur outside existing developed areas and maintained rights-of-way, a qualified biologist shall conduct a formal jurisdictional delineation to determine the extent of jurisdictional aquatic resources regulated by the U.S. Army Corps of Engineers, Regional Water Control Board, and/or California Department of Fish and Wildlife within the impact area. **MM BIO-13: Jurisdictional Aquatic Resources Avoidance (Applies to New Aquifer Storage and Recovery Facilities and Tait Diversion and Coast Pump Station Improvements).** Future refinements to the Proposed Project shall endeavor to avoid jurisdictional aquatic resources regulated by the U.S. Army Corps of Engineers, Regional Water Control Board, and California Department of Fish and Wildlife, to the extent practicable, through design changes or implementation of alternative construction methodologies. Where feasible and appropriate, all jurisdictional aquatic resources not directly affected by construction activities will be avoided and protected by establishing staking, flagging or fencing between the identified construction areas and aquatic resources to be avoided/preserved.	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		MM BIO-14: Jurisdictional Aquatic Resources Compensation (Applies to New Aquifer Storage and Recovery Facilities and Tait Diversion and Coast Pump Station Improvements). For unavoidable impacts to jurisdictional aquatic resources, a project-specific mitigation plan shall be developed, approved by the U.S. Army Corps of Engineers, Regional Water Control Board, and/or California Department of Fish and Wildlife, as appropriate, through their respective regulatory permitting processes, and implemented. The mitigation plan shall specify the criteria and standards by which the mitigation will compensate for impacts of the Proposed Project and include discussion of the following: a. The mitigation objectives and type and amount of mitigation to be implemented (in-kind mitigation at a minimum mitigation ratio of 1:1); b. The location of the proposed mitigation site(s) (within the San Lorenzo River watershed, if possible); c. The methods to be employed for mitigation implementation (jurisdictional aquatic resource establishment, re-establishment, enhancement, and/or preservation); d. Success criteria and a monitoring program to ensure mitigation success; and e. Adaptive management and remedial measures in the event that performance stands are not achieved.	
Operation of the Proposed Project would not have such substantial adverse effects.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact BIO-4: Wildlife Movement. Construction of the Proposed Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	Less than Significant	None	Less than Significant
Operation of the Proposed Project would have no adverse effects.	No Impact	None	No Impact
Impact BIO-5: Cumulative Biological Resources Impacts. Construction of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, could result in a significant cumulative impact related to biological resources, but the Proposed Project's contribution to this impact would not be cumulatively considerable.	Less than Significant	None	Less than Significant
Operation of the Proposed Project would not result in a significant cumulative impact.	Less than Significant	None	Less than Significant
Cultural Resources and Tribal Cultural Resources			
Impact CUL-1: Historic Built Environment Resources. Construction of some of the Proposed Project infrastructure components could cause a substantial adverse change in the significance of historical built environment resource.	Potentially Significant	**MM CUL-1: Historic-Era Built Environment Resources.** Potentially significant impacts to historic built environmental resources on the infrastructure component sites shall be addressed through the following measures:	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		a. **Identify Potential Historic Built Environment Resources (Applies to New Aquifer Storage and Recovery Facilities and the Felton Diversion).** When new or upgraded facilities move into project-level design and those developments are being pursued by the City of Santa Cruz (City), a qualified cultural resource specialist shall review the project site and conduct a California Historical Resources Information System (CHRIS) records search. If there are no previously recorded resources or historic era buildings or structures located on the site, no further action is warranted. If these project site review efforts indicate a potential for California Environmental Quality Act (CEQA) historical resources, all buildings and structures within the component site that are 45 years or older, shall be identified and measure b shall be implemented. b. **Evaluate Potential Built Environment Resources (Applies to New ASR Facilities, City/Soquel Creek Water District/Central Water District Intertie – Soquel Village and Park Avenue Pipelines, and the Felton Diversion).** Should potential CEQA historical resources be identified within the above programmatic infrastructure component sites, prior to project implementation, the City or other lead agency overseeing the Proposed Project shall retain a qualified architectural historian, meeting the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations Part 61), to record such potential resources based on professional standards, to formally assess their significance under CEQA Guidelines Section 15064.5. A Historic Resources Evaluation Report (HRER) shall be prepared by the architectural historian to evaluate properties over 45 years of age under all applicable significance criteria. In consideration of the historic context for the existing water management systems in the region there is a low-likelihood that water management structures that postdate the late 1800s or early 1900s (pioneering water system era) will be found historically significant. Therefore, for existing	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		infrastructure component sites it is likely that the HRER will find that no properties meet the significance criteria and therefore, no CEQA historical resources are likely to be present. No further work shall be required for historic era-built environment properties, buildings, or structures 45 years old or older at these sites that are not found to meet the CEQA historical significance criteria as historical resources. If a property is found to be eligible for listing under the applicable significance criteria and therefore considered a CEQA historical resource, the resource shall be avoided or preserved in place. If avoidance or preservation in place is not feasible, and the historical resource will be modified through design such that it may not be able to convey its historic significance, the City will retain a qualified architectural historian to prepare a subsequent technical report. This required report will assess the proposed project design plans and/or schematics in conjunction with the subject CEQA historical resource and determine whether the Proposed Project conforms with the Secretary of the Interior's Standards for the Treatment of Historic Properties, specifically, the Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Structures). The City shall modify the Proposed Project, as needed, to ensure that the Secretary of the Interior's Standards are met such that the historical resource continues to convey its historical significance.	
Impact CUL-2: Archaeological Resources and Human Remains. Construction of Proposed Project infrastructure components could cause a substantial adverse change in the significance of unique archaeological resources or historical resources of an archaeological nature, and/or disturb human remains.	Potentially Significant	**MM CUL-2: Historic or Unique Archaeological Resources.** Unique Archaeological Resources, Historical Resources of Archaeological Nature, and Subsurface Tribal Cultural Resources. Potentially significant impacts to unique archaeological resources, historical resources of an archaeological nature, or subsurface tribal cultural resources on the infrastructure component sites shall be addressed through the following measures:	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		a. **Identify Potential Unique Archaeological Resources, Historical Resources of Archaeological Nature, and Subsurface Tribal Cultural Resources (Applies to New Aquifer Storage and Recovery [ASR] Facilities and Other Components where Five Years Have Elapsed).** When new ASR facilities sites are identified and those components are being pursued by the City of Santa Cruz (City), a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, shall conduct a California Historical Resources Information System (CHRIS) records search, a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search and perform an intensive surface reconnaissance within a specifically defined Area of Direct Impact (ADI). Based on the above, all archaeological sites within or near the component site or area of potential effect shall be identified. The sensitivity of the site for discovering unknown resources, shall also be identified. The qualified archaeologist will prepare a technical report with the results of the above. The qualified archaeologist shall attempt to ascertain whether the archaeological sites qualify as unique archaeological resources, historical resources of an archaeological nature, or subsurface tribal cultural resources. If known or identified resources of these kinds are present on the site, measure c shall be implemented. This measure shall also be implemented for any other project or programmatic components that are implemented more than five years after the CHRIS records search and NAHC SLF search were conducted. b. **Standard Sensitivity Training and Inadvertent Discovery Clauses (Applies to all Components).** The City or other lead agency shall include a standard clause in every construction contract for the Proposed Project, which requires cultural resource sensitivity training for workers prior to conducting earth disturbance in the	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		vicinity of a documented cultural-resource-sensitive area, should one be identified in the future. Prior to site mobilization or construction activities on the project site, a qualified archaeologist with training and experience in California prehistory and historical period archaeology shall conduct the cultural resources awareness training for all project construction personnel. The training shall address the identification of buried cultural deposits, including Native American and historical period archaeological deposits and potential tribal cultural resources, and cover identification of typical prehistoric archaeological site components including midden soil, lithic debris, and dietary remains as well as typical historical period remains such as glass and ceramics. The training must also explain procedures for stopping work if suspected resources are encountered. Any personnel joining the work crew subsequent to the training shall also receive the same training before beginning work. Consistent with Standard Construction Practice #24, standard inadvertent discovery clauses shall also be included in every construction contract for the Proposed Project by the City or other lead agency, which requires that in the event that an archaeological resource is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease until a qualified archaeologist can evaluate the find and make a recommendation for how to proceed, as specified in measure c. c. **Evaluate Potential Unique Archaeological Resources, Historical Resources of Archaeological Nature, and Subsurface Tribal Cultural Resources (Applies to all Components).** For an archaeological resource that is discovered during initial site review (measure a) or during construction (measure b), the City or other lead agency shall:	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• Retain a qualified archaeologist to determine whether the resource has potential to qualify as either a unique archaeological resource, a historical resource of an archaeological nature, or a subsurface tribal cultural resource under Public Resources Code section 21074, California Environmental Quality Act (CEQA) Guidelines Section 15064.5, or Section 106 of the National Historic Preservation Act. • If the resource has potential to be a unique archaeological resource, a historical resource of an archaeological nature, or a subsurface tribal cultural resource, the qualified archaeologist, in consultation with the lead agency, shall prepare a research design and archaeological evaluation plan to assess whether the resource should be considered significant under CEQA criteria. • If the resource is determined significant, the lead agency shall provide for preservation in place, if feasible. If preservation in place is not feasible, the qualified archaeologist, in consultation with the lead agency, will prepare a data recovery plan for retrieving data relevant to the site's significance. The data recovery plan shall be implemented prior to, or during site development (with a 100-foot buffer around the resource). The archaeologist shall also perform appropriate technical analyses, prepare a full written report and file it with the Northwest Information Center, and provide for the permanent curation of recovered materials. The written report will provide new recommendations, which could include, but would not be limited to, archaeological and Native American monitoring for the remaining duration of project construction.	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact CUL-3: Tribal Cultural Resources. Construction of Proposed Project infrastructure components could cause a substantial adverse change in the significance of a tribal cultural resource.	Potentially Significant	**MM CUL-2** described above for Impact CUL-2	Less than Significant
Impact CUL-4: Cumulative Cultural Resource and Tribal Cultural Resource Impacts. Construction of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, could result in a significant cumulative impact related to cultural resources and tribal cultural resources, but the Proposed Project's contribution would not be cumulatively considerable.	Less than Significant	None	Less than Significant
Geology and Soils			
Impact GEO-1: Seismic Hazards. Construction and operation of the Proposed Project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death resulting from seismic ground shaking, landslides, or seismic related ground failure, including liquefaction and associated lateral spreading.	Potentially Significant	**MM GEO-1: Operation of New Aquifer Storage and Recovery (ASR) Facilities in Liquefaction-Prone Areas (Applies to New ASR Facilities).** To avoid increasing the potential for liquefaction, ASR injections in new wells located in potential liquefaction zones, as depicted on Figure 4.5-3, shall be maintained and operated such that existing shallow groundwater (i.e., depth generally less than 100 feet) does not rise to within 40 feet of the ground surface. Similarly, ASR injections in potential liquefaction zones shall be maintained and operated such that existing groundwater within a depth of 40 feet or less does not rise closer to the ground surface.	Less than Significant
Impact GEO-2: Unstable Geologic Unit or Soils. Construction and operation of the Proposed Project would not cause adverse effects involving landslides or be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Proposed Project, and potentially result in on- or off-site landslide, slope failure/instability, subsidence, or collapse.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact GEO-3: Expansive Soil. Construction of Proposed Project infrastructure components may be located on expansive soil, as defined by the 2019 California Building Code, but would not create substantial direct or indirect risks to life or property caused in whole or in part by the Proposed Project's exacerbation of the existing environmental conditions.	Less than Significant	None	Less than Significant
Impact GEO-4: Paleontological Resources. Construction of the Proposed Project could potentially directly or indirectly destroy a unique paleontological resource or site during construction. However, the Proposed Project would not directly or indirectly destroy a unique geological feature.	Potentially Significant	**MM GEO-2: Paleontological Resources Impact Mitigation Program and Paleontological Monitoring.** Potentially significant impacts to paleontological resources on the project and programmatic infrastructure component sites shall be addressed through the following measures: a. **Identify Potential Paleontological Resources (Applies to New Aquifer Storage and Recovery [ASR] Facilities).** When new ASR facilities sites are identified and those components are being pursued by the City or other lead agency, a qualified a qualified paleontologist pursuant to the Society of Vertebrate Paleontology (SVP) 2010 guidelines, shall conduct a paleontological records search from the Natural History Museum of Los Angeles County (LACM) and conduct a desktop geological and paleontological research. Based on the above, all paleontological sites within or near the programmatic component site shall be identified. The sensitivity of the site for discovering unknown paleontological resources, shall also be identified. The qualified paleontologist will prepare a brief technical report with the results of the above. If known or identified resources are present on the site, or if the site has moderate to high sensitivity for paleontological resources, measures b and c shall be implemented. b. **Develop Paleontological Resources Impact Mitigation Program (Applies to all Known Infrastructure Components and May Apply to New ASR Facilities).** Prior to commencement of any grading activity on infrastructure component sites with moderate to high	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		paleontological sensitivity or that may have such sensitivity at depth, the City or other lead agency shall retain a qualified paleontologist pursuant to the SVP (2010) guidelines. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the Proposed Project. The PRIMP can be written to include all infrastructure components located in sites with moderate to high paleontological sensitivity. The PRIMP shall be consistent with the SVP (2010) guidelines and shall, at a minimum, contain the following elements: • Introduction to the project, including project location, description of grading activities with the potential to impact paleontological resources, and underlying geologic units. • Description of the relevant laws, ordinances, regulations, and standards pertinent to the project and potential paleontological resources. • Requirements for preconstruction meeting attendance by the qualified paleontologist and/or their designee and worker environmental awareness training for grading contractors that outlines laws protecting paleontological resources and the types of resources that may be encountered on site. • Identification of locations where full-time paleontological monitoring within geological units with high paleontological sensitivity is required within the project or programmatic sites based on construction plans and/or geotechnical reports.	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• Requirements and frequency of paleontological monitoring spot-checks below a depth of five feet below the ground surface in areas underlain by Holocene sedimentary deposits. • The types of paleontological field equipment the paleontological monitor shall have on-hand during monitoring. • Discoveries treatment protocols and paleontological methods (including sediment sampling for microinvertebrate and microvertebrate fossils). • Requirements for adequate reporting and collections management, including daily logs, monthly reports, and a final paleontological monitoring report that details the monitoring program and includes analyses of recovered fossils and their significance and the stratigraphy exposed during construction. • Requirements for collection and complete documentation of fossils identified within the project site prior to construction and during construction, including procedures for temporarily halting construction within a 50-foot radius of the find while documentation and salvage occurs and allowing construction to resume once collection and documentation of the find is completed. Prepared fossils along with copies of all pertinent field notes, photos, maps, and the final paleontological monitoring report shall be deposited in a scientific institution with paleontological collections. Any curation costs shall be paid for by the City.	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		c. **Standard Paleontological Clauses in Construction Contracts (Applies to all Infrastructure Components).** The City or other lead agency shall include standard clauses in construction contracts for infrastructure components located in areas with moderate to high paleontological sensitivity. A standard clause shall be included that requires paleontological resource sensitivity training for workers prior to conducting earth disturbance activities. A standard inadvertent discovery clause shall also be included that indicates that in the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot-radius buffer. Once documentation and collection of the find is completed, the monitor will allow grading to recommence in the area of the find.	
Impact GEO-5: Cumulative Geologic Hazards. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, could result in a significant cumulative impact related to geology and soils, but the Proposed Project's contribution to this impact would not be cumulatively considerable.	Less than Significant	None	Less than Significant
Impact GEO-6: Cumulative Paleontological Resources Impacts. Construction of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, could result in a significant cumulative impact related to paleontological resources, but the Proposed Project's contribution to this impact would not be cumulatively considerable.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Greenhouse Gas Emissions			
Impact GHG-1: Greenhouse Gas Emissions. Construction and operation of the Proposed Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than Significant	None	Less than Significant
Impact GHG-2: Conflict with an Applicable Greenhouse Gas Reduction Plan. Construction and operation of the Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Less than Significant	None	Less than Significant
Impact GHG-3: Cumulative Greenhouse Gas Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would result in a significant cumulative impact related to greenhouse gas emissions, but the Proposed Project's contribution to this impact would not be cumulatively considerable.	Less than Significant	None	Less than Significant
Hazards, Hazardous Materials, and Wildfire			
Impact HAZ-1: Routine Transport, Use, Production, or Disposal of Hazardous Materials. Construction and operation of the Proposed Project would require use and transportation of petroleum products and small quantities of hazardous materials but would not result in a significant hazard to the public or environment.	Less than Significant	None	Less than Significant
Impact HAZ-2: Upset and Release of Hazardous Materials. Construction of the Proposed Project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Potentially Significant	**MM HAZ-1: Review of Hazardous Materials Site Databases (Applies to New Aquifer Storage and Recovery Facilities).** Prior to construction where ground disturbance is required, a review of hazardous materials site databases will be conducted within 0.5 miles of the project site where the construction is proposed (project site). A search shall be conducted no	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		more than six months prior to construction. In addition to sites identified in this environmental impact report, each new site identified within 0.5 miles of the project site will be reviewed for environmental contamination that could impact the project site, including soil, soil vapor, and groundwater contamination. If soil, soil vapor, and/or groundwater contamination is identified in the review, MM HAZ-2 will be implemented. **MM HAZ-2: Hazardous Materials Contingency Plan (Applies to New Aquifer Storage and Recovery Facilities and City of Santa Cruz/Soquel Creek Water District/Central Water District Intertie – Soquel Village Pipeline).** Prior to commencement of any construction activities, a Hazardous Materials Contingency Plan (HMCP) shall be developed that addresses known and suspected impacts in soil, soil vapor, and groundwater from releases on or near the project sites. The HMCP shall include training procedures for identification of contamination. The HMCP shall describe procedures for assessment, characterization, management, and disposal of hazardous constituents, materials, and wastes, in accordance with all applicable state and local regulations. Contaminated soils and/or groundwater shall be managed and disposed of in accordance with local and state regulations. These regulations, as further described in Section 4.7.2, Regulatory Framework (Section 4.7, Hazards, Hazardous Materials, and Wildfire), include hazardous material transportation (California Department of Transportation and Department of Toxic Substances Control [DTSC]), hazardous waste regulations (U.S. Environmental Protection Agency and DTSC), worker health and safety during excavation of contaminated materials (California Division of Occupational Safety and Health Administration), and local disposal requirements (DTSC and landfill-specific). The HMCP shall include health and safety measures, which may include but are not limited to periodic work breathing zone monitoring and monitoring for volatile organic compounds using a handheld organic vapor analyzer in the event impacted soils are encountered during excavation activities.	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact HAZ-3: Hazardous Materials Near Schools. Construction and operation of the Proposed Project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	Potentially Significant	**MM HAZ-1** and **MM HAZ-2** described above for Impact HAZ-2.	Less than Significant
Impact HAZ-4: Impair Emergency Response. Construction of the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than Significant	None	Less than Significant
Impact HAZ-5: Wildfire Hazards. Construction and operation of the Proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires; however, some programmatic components may be located in or near state responsibility areas.	Less than Significant	None	Less than Significant
Impact HAZ-6: Cumulative Hazardous Materials and Emergency Response Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to routine transport, use, disposal, or accidental release of hazardous materials, or related to interference with an adopted emergency response plan or emergency evacuation plan.	Less than Significant	None	Less than Significant
Impact HAZ-7: Cumulative Wildfire Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, could result in a significant cumulative impact related to exposing people or structures to a significant risk of loss, injury, or death involving wildland fires, but the Proposed Project's contribution would be less than cumulatively considerable.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Hydrology and Water Quality			
Impact HYD-1: Surface Water Quality Standards and Waste Discharge Requirements. Construction and operation of the Proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality. In addition, the Proposed Project would not conflict with or obstruct implementation of a water quality control plan related to surface water.	Less than Significant	None	Less than Significant
Impact HYD-2: Decrease Groundwater Supplies, Interfere with Groundwater Recharge, or Conflict with Groundwater Plan. Construction and operation of the Proposed Project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that sustainable groundwater management of the basin would be impeded. However, the Proposed Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan by potentially affecting local groundwater quality or causing restrictive effects in nearby wells.	Potentially Significant	**MM HYD-1: Ammonia Monitoring (Applies to Beltz 12 Aquifer Storage and Recovery [ASR] Facility).** Consistent with groundwater monitoring completed for the Beltz 12 ASR Pilot Test Project (Pueblo Water Resources 2020), monitoring for ammonia shall be completed in the Beltz 12 well and the Soquel Creek Water District (SqCWD) O'Neill Ranch well during future Beltz 12 ASR pilot tests and ASR operations. The City shall establish ammonia concentrations beginning at least 12 months prior to commencement of Beltz 12 ASR operations, by conducting quarterly sampling, and obtaining similar sampling data for the SqCWD's O'Neill Ranch well, as provided by SqCWD. During the first year of Beltz 12 ASR injection and extraction operations, the City shall conduct monthly monitoring of ammonia concentrations in groundwater. Following the first year of operations, monitoring of ammonia shall be quarterly. In the event that over a two-year sampling period after initiation of Beltz 12 ASR operations, City ammonia monitoring data, in combination with ammonia monitoring data from the SqCWD O'Neill Ranch well, indicates Beltz 12 ASR operations are not resulting in changes to ammonia concentrations that could adversely affect operations at the SqCWD's O'Neill Ranch well, ammonia sampling shall be discontinued in the Beltz 12 ASR well. The City ammonia monitoring data, in combination with ammonia monitoring data from the SqCWD O'Neill Ranch well, shall be evaluated to determine if Beltz 12 ASR operations are resulting in changes to ammonia	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		concentrations that could adversely affect operations at the SqCWD's O'Neill Ranch well. If ammonia levels increase above baseline, the City and SqCWD shall cooperatively develop, fund, and implement a hydrogeologic investigation to evaluate the source(s) and distribution of ammonia in the aquifer system and potential causes of the observed ammonia increases. The investigation shall include, if applicable, installation of a monitoring well cluster between the Beltz 12 ASR well and the O'Neill Ranch well to evaluate the gap in data between these two wells. To the extent that the results of the hydrogeologic investigation indicate that Beltz 12 ASR operations are resulting in ammonia concentrations above baseline concentrations, ASR injection and/or extraction operations shall be modified until ammonia concentrations decrease to baseline (or lower) levels, as demonstrated with monthly (during the first year of operations) or quarterly monitoring data from the Beltz 12 ASR well, and the SqCWD's O'Neill Ranch well, as provided by SqCWD. The Beltz 12 ASR modifications shall be proportional to the degree of impact being caused by Beltz 12 ASR operations (versus O'Neill Ranch well operations). Quarterly monitoring reports shall be prepared to document monitoring results. Additionally, during the next Mid-County Groundwater Sustainability Plan update process, the City shall work with other member agencies of the Mid-County Groundwater Sustainability Agency to address ammonia as a groundwater quality issue in the basin if warranted based on the outcome of monitoring and any hydrogeologic investigation performed, and incorporate the City's Beltz 12 ASR well and the SqCWD's O'Neill Ranch well into the plan update to allow for the ongoing assessment and monitoring of ammonia concentrations.	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		MM HYD-2: Groundwater Level Monitoring (Applies to Beltz 12 Aquifer Storage and Recovery [ASR] Facility). Consistent with restrictive effects criteria established in private well baseline assessment reports (Hydro Metrics 2015a, 2015b, 2015c, 2015d, 2015e), the private well monitoring program currently in place under the April 2015 cooperative monitoring/adaptive groundwater management agreement (cooperative groundwater management agreement) and the April 2015 stream flow and well monitoring agreement, between the City of Santa Cruz (City) and Soquel Creek Water District (SqCWD), shall be continued with respect to groundwater levels, and the City will contact and enroll any additional residents with private domestic wells within a 3,300-foot radius of the City's Beltz 12 ASR facility who want to join the program. Consistent with the existing cooperative groundwater management agreement, the City and SqCWD shall share monitoring and mitigating for impacts to third parties, such as private wells found in the area of overlap of 3,300-foot radius around SqCWD's O'Neill Ranch Well and 3,300-foot radius around the City's Beltz 12 well. Monitoring expenses shall be shared equally while mitigation expenses shall be shared proportionately. If private well monitoring reveals impacts to private wells due to the presence of restrictive effects, pump tests shall be conducted to determine proportionality. Monitoring and mitigation of impacts to private wells within a 3,300-foot radius of either the O'Neill Ranch well or Beltz 12 well, but not located in the overlap area, shall be the sole responsibility of the agency whose 3,300-foot radius encompasses the private well. If demonstrated restrictive effects to nearby private domestic wells occur during ASR pilot testing or operations, the City and SqCWD shall cooperatively develop, fund, and implement a hydrogeologic investigation to evaluate the potential causes of the observed restricted effects in private wells. To the extent that the results of the hydrogeologic investigation indicates that Beltz 12 ASR operations are resulting in restrictive effects, ASR injection and/or extraction operations shall be modified until the corresponding undesirable effects are eliminated, as	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		demonstrated with quarterly monitoring data from the private wells. The Beltz 12 ASR modifications shall be proportional to the degree of impact being caused by Beltz 12 ASR operations (versus O'Neill Ranch well operations). Annual monitoring reports shall be prepared to document monitoring results. In the event that restrictive effects to nearby private domestic wells does not occur during ASR pilot testing or operations, for a period of five years after initiation of Beltz 12 ASR operations, the City's participation in the private well monitoring program will be discontinued. Additionally, during the next Mid-County Groundwater Sustainability Plan (GSP) update process, the City shall work with other member agencies of the Mid-County Groundwater Sustainability Agency to update information in the GSP related to private wells and the ongoing assessment and monitoring of groundwater levels at these wells, if warranted based on the outcome of monitoring and any hydrogeologic investigation performed.	
Impact HYD-3: Alteration to the Existing Drainage Pattern of the Site Area. Construction and operation of the Proposed Project could not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (a) result in substantial erosion or siltation on or off site; (b) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; (c) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (d) impede or redirect flood flows.	Potentially Significant	**MM HYD-3: Drainage Improvements (Applies to City of Santa Cruz/Scotts Valley Water District Intertie Pump Station and City of Santa Cruz/Soquel Creek Water District/Center Water District New Intertie Pump Stations).** Final pump station designs shall include Low Impact Development features, which would: (1) reduce post-construction stormwater runoff rates to be less than or equal to existing conditions, for a 24-hour, 25-year storm event; and (2) minimize off-site runoff of stormwater pollutants through filtration features, such oil-water separators, vegetated swales, and bioretention basins. These features shall be inspected monthly to ensure functionality.	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact HYD-4: Flood, Tsunamis, and Seiche Zones. Construction and operation of the Proposed Project in flood hazard, tsunami, or seiche zones would not risk release of pollutants due to project inundation.	Less than Significant	None	Less than Significant
Impact HYD-5: Cumulative Hydrology and Water Quality Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to hydrology and water quality.	Less than Significant	None	Less than Significant
Land Use, Agriculture and Forestry, and Mineral Resources			
Impact LU-1: Conflicts with Land Use Plans, Policies, or Regulations. Construction and operation of the Proposed Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None	Less than Significant
Impact LU-2: Conversion or Loss of Farmland or Forest Land and Conflicts with Zoning for Agricultural Land, Forest Land, or Timberland. Construction of the Proposed Project could convert prime, unique, or important agricultural land to non-agricultural use, convert forest land to non-forest land, conflict with existing zoning for agricultural or timber production uses or conflict with a Williamson Act contract.	Potentially Significant	**MM LU-1: Avoidance of Agricultural and Forest Lands (Applies to New Aquifer Storage and Recovery [ASR] Facilities).** The following measures shall be implemented to avoid conversion of Farmland or forest/timberland, and/or conflicts with agricultural zoning in the coastal zone: • Locate new ASR facilities on sites that do not contain Farmland (i.e., prime, unique, or important farmland under the State Farmland Mapping and Monitoring Program) unless site-specific application of the Land Evaluation and Site Assessment model determines that the site would not result in a significant impact to agricultural lands. • Locate new ASR facilities on sites that do not contain forest/timber land. • Locate new ASR facilities on sites that are not zoned for agricultural uses in the coastal zone.	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact LU-3: Loss of Mineral Resources. Construction of the Proposed Project could potentially result in the location of infrastructure components on lands containing mineral resources in existing quarries; however, the Proposed Project would not result in the loss of availability of a mineral resource.	Less than Significant	None	Less than Significant
Impact LU-4: Cumulative Land Use Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to conflicts with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None	Less than Significant
Impact LU-5: Cumulative Agriculture and Forestry Impacts. Construction of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would result in a significant cumulative impact related to loss of Farmland and forest land, but the Proposed Project's contribution would not be cumulatively considerable.	Less than Significant	None	Less than Significant
Impact LU-6: Cumulative Mineral Resource Impacts. Construction of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to loss of availability of mineral resources.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Noise			
Impact NOI-1: Substantial Permanent Increase in Ambient Noise Levels. Operation of the Proposed Project would result in generation of a substantial permanent increase in ambient noise levels during long-term operation in the vicinity of one of the programmatic infrastructure components.	Potentially Significant	**MM NOI-1: Operational Noise Levels (Applies to Coast Pump Station Improvements).** The Proposed Project shall implement the following measures to reduce the potential for exposure of nearby noise-sensitive receptors to excessive noise levels: • Where feasible, a primary element for the selection of proposed noise-generating equipment (e.g., pumps, motors, transformers, etc.) shall be equipment that inherently does not generate an increase of +3 dB in the ambient noise levels where the existing ambient is below 60 dBA L_{dn}, or a +5 dB increase in the ambient noise levels where the existing ambient is above 65 dBA L_{dn}, as measured at the nearest sensitive receptor. • Where this is not feasible, noise-generating equipment shall be located within a full or partial noise reduction enclosure. The effectiveness of the equipment enclosure to reduce noise level exposure to within the applicable noise level threshold shall be demonstrated through submittal of a focused acoustical assessment.	Less than Significant
Impact NOI-2: Substantial Increase in Ambient Noise Levels in Excess of Standards. Construction of the Proposed Project would result in generation of a substantial temporary increase in ambient noise levels in the vicinity of some project and programmatic infrastructure components in excess of applicable standards established in local general plans or noise ordinances.	Significant	**MM NOI-2: Construction Noise (Applies to all Infrastructure Components).** The Proposed Project shall implement the following measures related to construction noise: • Restrict construction activities and use of equipment that have the potential to generate significant noise levels (e.g., use of concrete saw, mounted impact hammer, jackhammer, rock drill, etc.) to between the hours of 8:00 a.m. and 5:00 p.m., unless specifically identified work outside these hours is authorized by the City's Water Director as necessary to allow for safe access to a construction site, safe construction operations, efficient	Significant and Unavoidable

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		construction progress, and/or to account for prior construction delays outside of a contractor's control (e.g., weather delays). • Construction activities requiring operations continuing outside of the standard work hours of 8:00 a.m. and 5:00 p.m. (e.g., borehole drilling operations) shall locate noise generating equipment as far as possible from noise-sensitive receptors, and/or within an acoustically rated enclosure (meeting or exceeding Sound Transmission Class [STC] 27), shroud or temporary barrier as needed to prevent the propagation of sound into the surrounding areas in excess of the 60 dBA nighttime (10:00 p.m. to 8:00 a.m.) and 75 dBA daytime (8:00 a.m. to 10:00 p.m.) criteria at the nearest sensitive receptor. Noisy construction equipment, such as temporary pumps that are not submerged, aboveground conveyor systems, and impact tools will likely require location within such an acoustically rated enclosure, shroud or barrier to meet these above criteria. Impact tools, in particular, shall have the working area/impact area shrouded or shielded whenever possible, with intake and exhaust ports on power equipment muffled or suppressed. Impact tools may necessitate the use of temporary or portable, application-specific noise shields or barriers to achieve compliance. • Portable and stationary site support equipment (e.g., generators, compressors, and cement mixers) shall be located as far as possible from nearby noise-sensitive receptors. • Construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal-combustion-powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed the	

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Operation of the Proposed Project would result in generation of a substantial permanent increase in ambient noise levels in the vicinity of one of the programmatic infrastructure components in excess of applicable standards.	Potentially Significant	manufacturer's specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function, and minimization of noise. • Construction equipment shall not be idled for extended periods of time (i.e., 5 minutes or longer) in the immediate vicinity of noise-sensitive receptors. **MM NOI-1** described above	Less than Significant
Impact NOI-3: Groundborne Vibration. Construction of the Proposed Project would result in the potential generation of excessive groundborne vibration or groundborne noise levels.	Potentially Significant	**MM NOI-3: Construction Vibration (Applies to New Aquifer Storage and Recovery Facilities and all Intertie Improvements).** The Proposed Project shall implement the following measures to reduce the potential for structural damage from groundborne noise and vibration: • Vibratory rollers or compactors shall not be used within 15 feet of sensitive receptors. • Heavy equipment required to operate within 9 feet of sensitive receptors shall be limited to rubber-tired equipment.	Less than Significant
Impact NOI-4: Cumulative Noise Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to noise and vibration.	Less than Significant	None	Less than Significant
Recreation			
Impact REC-1: Conflicts with Existing Recreational Uses. Operation of the Proposed Project would not change or conflict with existing recreational uses.	Beneficial	None	Beneficial

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact REC-2: Increased Use of Existing Parks or Recreational Facilities. Operation of the Proposed Project would not increase the use of parks or recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.	Less than Significant	None	Less than Significant
Impact REC-3: Cumulative Recreation Impacts. Operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not change or conflict with existing recreational uses, but could increase the use of parks or recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. However, the Proposed Project's contribution would not be cumulative considerable.	Less than Significant	None	Less than Significant
Transportation			
Impact TRA-1: Conflict with Program, Plan, Ordinance, or Policy Addressing the Circulation System. Construction and operation of the Proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	Less than Significant	None	Less than Significant
Impact TRA-2: Vehicle Miles Traveled. Construction and operation of the Proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) or cause an increase in VMT which is greater than 15% below the regional average VMT.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact TRA-3: Geometric Design Hazards. Construction and operation of the Proposed Project would not substantially increase hazards due to a geometric design feature or incompatible use.	Less than Significant	None	Less than Significant
Impact TRA-4: Emergency Access. Construction of the Proposed Project would not result in inadequate emergency access.	Less than Significant	None	Less than Significant
Impact TRA-5: Cumulative Transportation Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to transportation.	Less than Significant	None	Less than Significant
Utilities and Energy			
Impact UTL-1: New or Expanded Facilities. Construction and operation of the Proposed Project would result in new or expanded water facilities that would result in significant impacts, but would not require or result in new or expanded wastewater treatment, storm drainage, electric power, natural gas, or telecommunications facilities or a new sewer trunk line.	Significant	All mitigation measures described above	Significant and Unavoidable
Impact UTL-2: Water Supplies. Operation of the Proposed Project would provide sufficient water supplies to serve the Proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years.	Beneficial	None	Beneficial
Impact UTL-3: Wastewater Treatment Capacity. Operation of the Proposed Project would have adequate wastewater treatment capacity to serve project demand.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact UTL-4: Solid Waste Generation. Construction and operation of the Proposed Project would not generate solid waste in excess or state or local standards, or of the capacity of local infrastructure, or impair attainment of solid waste reduction goals.	Less than Significant	None	Less than Significant
Impact UTL-5: Compliance with Solid Waste Regulation. Construction and operation of the Proposed Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	Less than Significant	None	Less than Significant
Impact UTL-6: Result in Wasteful, Inefficient or Unnecessary Consumption of Energy Resources. Construction and operation of the Proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources.	Less than Significant	None	Less than Significant
Impact UTL-7: Conflict with an Applicable Renewable Energy or Energy Efficiency Plan. Construction and operation of the Proposed Project would not result in conflicts with or otherwise obstruct a state or local plan for renewable energy or energy efficiency.	Less than Significant	None	Less than Significant
Impact UTL-8: Cumulative Water and Wastewater Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to water and wastewater.	Less than Significant	None	Less than Significant

Table 1-3. Summary of Project Impacts (continued)

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact UTL-9: Cumulative Landfill Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to landfill capacity.	Less than Significant	None	Less than Significant
Impact UTL-10: Cumulative Energy Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to energy.	Less than Significant	None	Less than Significant