4.13 Utilities and Energy

This section describes the existing utilities and energy conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential project and cumulative impacts, and identifies mitigation measures for any significant or potentially significant impacts related to implementation of the of the Santa Cruz Water Rights Project (Proposed Project).

A summary of the comments received during the scoping period for this environmental impact report (EIR) is provided in Table 2-1 in Chapter 2, Introduction, and a complete list of comments is provided in Appendix A. Comments related to utilities and energy were received from the Soquel Creek Water District and several individuals. Issues identified in public comments related to potentially significant effects on the environment under the California Environmental Quality Act (CEQA), and issues raised by responsible and trustee agencies, are identified and addressed in this EIR.

4.13.1 Existing Conditions

4.13.1.1 Study Area

The Proposed Project involves the water system and the areas served of the City of Santa Cruz (City)[1] and 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), as shown on Figure 3-4 in Chapter 3, Project Description. 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 (see Figure 3-1 in Chapter 3, Project Description). The study area for utilities and energy includes the above noted areas served by the City and water service areas of the neighboring water agencies, as well as the proposed project and programmatic infrastructure component sites where construction and ground disturbance could occur and where new or upgraded facilities would be located (see Figure 3-4 in Chapter 3, Project Description). These sites include the following: aquifer storage and recovery (ASR) sites where known, intertie improvement sites, Felton Diversion fish passage improvement site, and the Tait Diversion and Coast Pump Station improvement site. 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). As there are no definitive sites identified to date for ASR new facilities, site-specific conditions are not available.

4.13.1.2 Water Supply

City of Santa Cruz

The City provides drinking water from a variety of sources to residents of the City and surrounding areas. The areas served by the City include the City, a portion of the City of Capitola, and portions of unincorporated Santa Cruz County in Live Oak, Soquel, and along Graham Hill Road, as well as limited service along the coast north of the City,[2] primarily along State Highway 1. The City serves approximately 25,000 connections in an approximate 20-square mile area. The current population residing in the City's water service area is estimated as 95,251 people. Approximately two thirds of

[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.

[2] The City's service on the coast north of the City consists of limited numbers of connections that primarily derive from the City's agreements with landowners along its water pipelines. The City also provides approximately 12 mgy of raw water for agricultural irrigation along the coast north of the City.

the total population, almost 64,000, lives inside the City limits. Within the City, about 9,100 people including students, faculty, staff, and their families reside on the University of California Santa Cruz campus (City of Santa Cruz 2016).

The City's water supply is primarily from surface water sources with some groundwater production in the Santa Cruz Mid-County Groundwater Basin. The City's water system is comprised of four main sources of supply: San Lorenzo River diversions; North Coast spring and creeks; Newell Creek (Loch Lomond Reservoir); and the Beltz well system. Between 2005 and 2015, the North Coast sources represented approximately 26% of the total water supply, the San Lorenzo River represented approximately 55%, Newell Creek (Loch Lomond Reservoir) represented approximately 14%, and Beltz wells contributed the remaining approximately 5% (City of Santa Cruz 2016).

The San Lorenzo River sources include the Tait Diversion adjacent to the Coast Pump Station on State Highway 9 near the City limits and the Felton Diversion, which is an inflatable dam and intake structure built in 1974, located about 6 miles upstream from the Tait Diversion. When the Felton Diversion is being operated, water is pumped through the Felton Booster Station to Loch Lomond Reservoir. Loch Lomond Reservoir is located east of the town of Ben Lomond in the Santa Cruz Mountains and has a maximum capacity of 2,810 million gallons. The North Coast water sources consist of surface diversions from three coastal creeks and a natural spring located approximately 6 to 8 miles northwest of downtown Santa Cruz: Liddell Spring, Laguna Creek, Reggiardo Creek, and Majors Creek.

The Beltz well system consists of four production wells and two water treatment plants located in the eastern portion of the areas served by the City within the Santa Cruz Mid-County Groundwater Basin. Even though groundwater constitutes only about 5% of the City's water supply, it is a crucial component of the water system for meeting peak season demands, maintaining pressure in the eastern portion of the distribution system, and weathering dry periods (City of Santa Cruz 2016). The City and SqCWD, as well as CWD, are member agencies of the Santa Cruz Mid-County Groundwater Agency (MGA), which is responsible for implementing the mandates set forth in the 2014 Sustainable Groundwater Management Act in the Santa Cruz Mid-County Basin, as further described below.

The City stores water in Loch Lomond Reservoir to help meet dry-season water demand and provide back-up supply during winter storms when river diversions can be problematic due to turbidity issues. The City follows a variety of policies, procedures and legal restrictions in operating its water supply system, and the amount of water produced from each of the City surface water sources is controlled by different water rights and operational agreements. In general, the water supply system is managed to use available flowing sources to meet daily demands as much as possible. Groundwater and stored water from Loch Lomond Reservoir are used primarily in the summer and fall months when flows in the coast and river sources decline.

The City's adopted 2015 Urban Water Management Plan (UWMP) reported that annual water production had fluctuated from a high of nearly 3,800 million gallons per year (mgy) in 2006 to a low of approximately 2,500 mgy in 2015 (City of Santa Cruz 2016). The 2015 water production rate represents production volumes experienced under severe drought conditions during a second year of rationing with local emergency water shortage regulations and state-mandated restrictions in effect. In 2018, water demand in the areas served by the City totaled approximately 2,650 mgy (M.Cubed 2019). The 2015 UWMP estimates a 20-year water demand at approximately 3,200 mgy in the year 2035 based on deliveries for average years, projected water demands, and available surface water flows consistent with ecosystem protection goals regarding fish habitat. It is also noted that the current water demand projection for the University of California, Santa Cruz (UCSC) for the year 2040 is approximately 20 mgy less than the 308 mgy forecast for UCSC in the City's 2015 UWMP based on the water demand projection for the currently proposed 2021 Long Range Development Plan (LRDP) (UCSC 2021).

The City's primary water supply reliability issue relates to potential shortfalls during dry and critically dry years. The City's water supply is almost exclusively from local surface water sources whose yield varies from year to year depending on the amount of rainfall received. The UWMP predicts that projected water demand will be met for 90% of all normal water years and that existing and planned sources of water available to the City will meet the predicted service area total annual water demand of about 3,200 mgy. The UWMP's projections for the year 2035 show a shortfall of approximately 40 mgy during normal periods, 528 mgy during single dry year periods, and 1,250 to 1,639 mgy during multiple dry year periods. The City had not previously seen shortages in normal water years, but the UWMP identified potential reductions in water production for ecosystem protection (releases for fishery protection), which are similar to the Agreed Flows included in the Proposed Project. However, operationally the City predicts sufficient water supplies in normal years to meet demand even though a slight deficit seems to exist in the modeled projections (City of Santa Cruz 2016).

The City has been pursuing possible new or supplemental water sources for the past several decades to meet demand during dry and multiple-dry year periods. The most recent strategies were developed as a result of a two-year Water Supply Advisory Committee (WSAC) process as explained in Section 3.2.1, Water Supply Planning Background, of this EIR. Four primary Water Supply Augmentation Strategy portfolio elements were identified that were subsequently included in the UWMP that are summarized below; see Chapter 5, Growth Inducement, for further details:

- **Element 0: Additional water conservation** with a goal of achieving an additional 200 to 250 mgy of demand reduction by 2035 by expanding water conservation programs. An updated Water Conservation Master Plan was completed in 2016 that includes 35 implementation measures, many of which are already underway (City of Santa Cruz 2016).
- **Element 1: Passive recharge of regional aquifers** by working to develop agreements for delivering surface water to the SqCWD and/or the SVWD[3] so they can rest their groundwater wells, help the aquifers recover, and potentially store water for future use by the City in dry periods. To date, the City and SqCWD have operated a pilot water transfer program that expired at the end of 2020, which conveyed treated North Coast source water from the City's Graham Hill Water Treatment Plant (GHWTP) to the SqCWD for the purpose of passively recharging the groundwater basin. Pilot transfers were provided to a limited portion of the SqCWD service area during the 2018/2019 and 2019/2020 winter and spring wet season during which time water quality monitoring and operational data were collected. In February and March 2021, the City and SqCWD, respectively, approved extension of the program for another five-year term through the wet seasons of water years 2022 (October 1, 2021) through water year 2026 (May 1, 2026) and increased the price of the transferred water. No other modifications to the agreement were made.
- **Element 2: Active recharge of regional** by using existing infrastructure and potential new infrastructure in the Purisima aquifer in the Soquel-Aptos Basin (now referred to as the Santa Cruz Mid-County Groundwater Basin), in the Santa Margarita/Lompico/Butano aquifers (now referred to as the Santa Margarita Groundwater Basin) in the Scotts Valley area, or in both to store water that can be available for use by the City in dry periods. An aquifer storage and recovery (ASR) study is underway that is looking at regional options for groundwater injection, storage, and future extraction in order to actively recharge regional aquifers. A pilot ASR project is currently underway utilizing the City's existing Beltz wells.
- **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 City supplemental water supply goals. In the event advanced-treated recycled water does not

[3] 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.

meet the City's needs, desalination would become Element 3. A recycled water feasibility study was completed in June 2018, and a phase two recycled water study is being prepared to further develop alternatives for a comparative analysis with ASR and in-lieu projects. A desalination project feasibility update was completed in August 2018. In November of 2018, City Council accepted staff recommendations to prioritize recycled water over desalination, understanding that if the other alternative water supply augmentation strategies being considered are not able to meet the plan's goal, desalination would be reconsidered.

San Lorenzo Valley Water District

SLVWD provides water service to a population of approximately 19,700 in several communities within the San Lorenzo Valley (LAFCO 2020). The District's legal boundaries encompass three service areas that cover approximately 61 square miles (WCS 2016a). Additionally, the District provides sewer service to the Bear Creek Estates area within the District. At present, SLVWD provides water service to approximately 8,000 connections in the communities of Boulder Creek, Brookdale, Ben Lomond, Felton, Lompico, Zayante, and southern Scotts Valley. Services are provided by four water systems and one sewer system: (1) North System (Boulder Creek, Brookdale, Ben Lomond, Lompico, and Zayante), (2) Felton, (3) South System (Pasatiempo Pines area in southern Scotts Valley), (4) Mañana Woods (southern Scotts Valley), and (5) Bear Creek Estates Wastewater System (LAFCO 2020).

The SLVWD's currently active water supplies consist of nine active stream diversions, eight active groundwater wells, and one active spring.[4] In addition to the City, SLVWD is entitled by contract to receive a 313 acre-feet per year (afy) of the water stored in Loch Lomond Reservoir (City of Santa Cruz 2016) that has not been used since 1977. Water supplies also include a potential water supply from the City in lieu of direct diversions from Loch Lomond Reservoir (WSC 2016a). SLVWD has purchased small amounts of water from SVWD during short-term, quasi-emergency situations, providing a maximum of 10% of South System monthly production and less than 0.1% of District total average annual use. This source is not considered significant with regard to the District's long-term water-supply planning (WSC 2016a). The SLVWD's groundwater wells draw from the overdrafted Santa Margarita Groundwater Basin.

Water deliveries ranged from 1,781 afy in 2010 to 1,469 afy in 2015; projected demand is estimated at 1,795 afy (WSC 2016a). The SLVWD's UWMP indicates that SLVWD's water supply is adequate to meet both current and projected water demands during average, single-dry-year, and multiple-dry-year conditions (WSC 2016a). However, this finding that supplies would be adequate during multiple-dry-year conditions is based on the assumption that continued local groundwater overdraft in the Santa Margarita Groundwater Basin is sustainable and that water can be supplied to the South System from the North System sources through the systems' existing interconnection (WSC 2016a).

SLVWD and the County of Santa Cruz are developing a Conjunctive Use Plan for the San Lorenzo River Watershed to increase stream baseflow for fish and increase reliability of surface and ground water supplies for the SLVWD. This project would interconnect SLVWD's three independent water systems to allow for increased reliability and allow the distribution systems to utilize surplus surface water from each other, providing in-lieu recharge to the groundwater aquifers through conjunctive use. Project components identified to date that would allow for conjunctive use within SLVWD's service areas and in conjunction with the SVWD include water rights changes, use of existing interties to move water between service areas, use of SLVWD's Loch Lomond Reservoir water rights, and injection of excess surface water during wet periods and extraction of groundwater during dry periods in the Olympia area.

[4] SLVWD's diversions under its water-right Permit No. 20123 are contingent on the existence of certain minimum streamflows existing below the City's Felton Diversion through the September-May period.

As a result of the CZU Lighting Complex Fire in August 2020, SLVWD facilities sustained significant facility and operational capacity losses. According to a preliminary damage assessment prepared for SLVWD, more than 50% of the structures assessed were destroyed or majorly damaged, while other facilities have heat damage, smoke, or possible contamination (SLVWD 2020). The water system's primary damage includes intakes and raw water pipelines (Peavine, Foreman, Clear Creek 1-3, Sweetwater); the Bennett Spring Overflow, tanks, piping and controls; and water storage (Lyon and Little Lyon tanks are contaminated with soot and other fire byproducts). The Big Steel Water Tanks and the Water Treatment Plant were spared from significant damage, but will require some minor repair before resuming full operation. SLVWD is currently working on emergency repairs to bring the water system back to functioning condition. At the time of the assessment in September 2020, service had been restored to all customers, although 419 customers were still affected by a Do Not Drink/Do Not Boil order (SLVWD 2020).

The San Lorenzo River watershed also sustained extensive damage during the fire, including destruction of trees and vegetation with indirect damage due to contamination of surface waters by ash and debris, increased erosion potential due to destruction of vegetation on slopes, and potential future damage caused by toppling of damaged trees. Surface waters within the fire zone have been contaminated directly by ash and debris (SLVWD 2020).

Scotts Valley Water District

SVWD provides potable and recycled water and serves most of the City of Scotts Valley and some unincorporated areas north of the City, serving a population of approximately 11,000. The only source of potable water for the SVWD is groundwater from the overdrafted Santa Margarita Groundwater Basin. SVWD shares the basin with neighboring SLVWD, the Mount Hermon Association, other small water systems and over 1,100 private well users. No raw water is supplied to or by SVWD. Recycled water, supplied to SVWD by the City of Scotts Valley Water Reclamation Facility, is used primarily for landscape irrigation (Kennedy Jenks Consultants 2016).

Water demand is projected to increase from approximately 1,333 afy in 2015 to 1,635 afy in 2035 and 1,661 afy in 2040. Groundwater production had declined from 2002 through 2015 due to drought conditions, use of recycled water, and implementation of conservation programs (Kennedy/Jenks Consultants 2016). SVWD has adequate supplies available to meet projected demands should a multiple-dry-year period occur; however, overdraft of the Santa Margarita Groundwater Basin, especially in a time of drought, presents a concern for reliability over extended periods of time (Kennedy/Jenks Consultants 2016). See Section 4.8, Hydrology and Water Quality, for additional information on the Santa Margarita Groundwater Basin. Emergency intertie pipelines between SVWD and SLVWD can be used to transfer water during emergencies. These interties improve regional supply reliability by allowing SVWD access to SLVWD surface water source in an emergency (Kennedy/Jenks Consultants 2016).

The decline of groundwater levels in many parts of the Santa Margarita Groundwater Basin occurred during 1985-2004 representing a loss in groundwater storage in the basin by an estimated 28,000 acre-feet. SVWD began actively managing groundwater in the area in the early 1980s, developed the Water Resources Management Plan in 1983 to monitor and manage water resources, and adopted a Groundwater Management Plan in 1994. Along with SLVWD and other agencies, SVWD also participated in the Santa Margarita Groundwater Basin Advisory Committee that was actively involved in the cooperative groundwater management of the basin until its dissolution and substitution with Santa Margarita Groundwater Agency (SMGWA) in 2017. With conservation and other management efforts by local water agencies, the total pumping from the basin has decreased by 45% since 1997 (SVWD 2021). See Section 3.2.1, Water Supply Planning Background, for additional information on the Santa Margarita Groundwater Basin.

Soquel Creek Water District

The SqCWD provides potable water service and groundwater resource management within its service area and serves a population of approximately 40,000 (ESA 2018). The SqCWD's service area includes portions of the City of Capitola and unincorporated Santa Cruz County, including the communities of Aptos, La Selva Beach, Opal Cliffs, Rio Del Mar, Seascape, Seacliff Beach, and Soquel. SqCWD relies entirely on the overdrafted groundwater aquifers in the Santa Cruz Mid-County Groundwater Basin. Total water use includes water delivered to customers, water sold to other agencies, and non-revenue water and is expected to decline from an estimated 3,900 afy in 2020 to 3,300 afy in 2045 (WSC 2016b).

As indicated above, the City and SqCWD are member agencies of the Santa Cruz Mid-County Groundwater Agency, which is responsible for implementing the mandates set forth in the 2014 Sustainable Groundwater Management Act in the Santa Cruz Mid-County Basin (Basin). The Basin is identified as one of 21 basins in California as critically overdrafted and it is required to bring the Basin into sustainability by 2040. The MGA adopted a Groundwater Sustainability Plan (GSP) on November 21, 2019 and submitted it to the State Department of Water Resources in January 2020. DWR approved the GSP on June 3, 2021 as being found to satisfy the requirements of Sustainable Groundwater Management Act (DWR 2021). The GSP includes projects and management actions that are being implemented to restore protective water levels and prevent further seawater intrusion from moving further inland and contaminating the groundwater basin.

As the Santa Cruz Mid-County Groundwater Basin is in a state of critical overdraft, SqCWD has been actively pursuing supplemental supply options that would allow for reductions in groundwater pumping to facilitate basin recovery (WSC 2016b). (See Section 4.8, Hydrology and Water Quality, for additional information on the Santa Cruz Mid-County Groundwater Basin.) Groundwater elevations in the basin are below protective levels, and SqCWD established pre- and post-recovery pumping goals at 2,300 and 3,300 afy, respectively, based on the SqCWD maintaining its proportion of the basin's consumptive use. To meet the targeted pumping, SqCWD has identified that approximately 1,500 afy of supplemental water source(s) would be required by the year 2025, decreasing to 1,100 afy by the year 2035, to meet the recovery pumping goals (WSC 2016b).

According to the UWMP, SqCWD actively manages water resources using a combination of management tools that were first established in the 1996 Soquel-Aptos Area Groundwater Management Plan, which was updated and expanded in 2007 (WSC 2016b). As a result of SqCWD's ongoing groundwater monitoring program, signs of coastal overdraft were detected early leading to development of SqCWD's first Integrated Resources Plan (IRP) in 2006. The IRP was updated in 2012 and ultimately replaced with the development of the Community Water Plan (CWP) in 2015 (WSC 2016b).

The CWP is based on the District's UWMP and community input and is the District's roadmap for meeting the goal of a sustainable groundwater basin by 2040 (SqCWD 2015). Components of the CWP include promoting water conservation and water neutral development to reduce groundwater extractions; being proactive with the groundwater management program to protect aquifers; and seeking supplemental water supplies to meet water needs. The groundwater management program includes a monitoring well network with over 80 monitoring wells to track water quality and water levels, implementation of the Well Master Plan to redistribute groundwater pumping away from the coast to slow down seawater intrusion, development of a computer model to better understand the basin and determine sustainable yield, and other activities. The pursuit of supplemental supplies includes the Pure Water Soquel: Groundwater Replenishment and Seawater Intrusion Prevention Project (Pure Water Soquel) and surface water transfers, as the primary supplemental supplies being pursued.

In terms of surface water transfers, as previously described, the City and SqCWD have been investigating the feasibility of transferring excess City surface water to SqCWD for the purpose of passively recharging the groundwater basin. Pursuant to a 2016 agreement that was extended in February and March 2021, a pilot program was established to sell excess winter water supply from the City's GHWTP to the SqCWD, and pilot transfers were provided to a limited portion of the SqCWD service area during the 2018/2019 and 2019/2020 winter and spring wet season (City of Santa Cruz and SqCWD 2015); the extension of the agreement allows for another five-year term through water year 2026 (May 1, 2026). In 2018, SqCWD approved the Pure Water Soquel Groundwater Replenishment and Seawater Intrusion Prevention Project (Pure Water Soquel), which is a groundwater replenishment and seawater intrusion prevention project that uses advanced water purification to purify recycled water for replenishing the groundwater basin. Pure Water Soquel is included in the GSP and is necessary for the basin to reach sustainability. The project is designed to produce 1.3 mgd or approximately 1,500 afy of purified water, which as indicated above is the estimated volume required to offset the portion of the Basin's groundwater overdraft attributable to SqCWD groundwater pumping (ESA 2018). The facility is also being designed to enable future expansion if needed. The project is under construction and is expected to be operational in 2022. Additionally, SqCWD is currently improving its existing groundwater well infrastructure and redistributing pumping inland through implementation of the Well Master Plan (WSC 2016b).

The SqCWD UWMP assumes that pumping will be limited to 2,300 afy when adequate supplemental supply is in use and that the District will pump at or below this level for at least 20 years to fully restore the basin. The volume of groundwater pumped in 2045 assumes the groundwater basin has been fully restored and that pumping at the post-recovery pumping goal can occur. Once an adequate supplemental supply is available, SqCWD may utilize more of the supplemental supply sources in order to reduce the cumulative deficit recovery period, or to enhance basin conditions when faced with changing factors such as basin outflows, climate change, or other unforeseen factors even if the basin has been fully restored (WSC 2016b).

While SqCWD is generally 100% reliant on its groundwater supply, its distribution system includes interties with CWD and the City, as well as other local entities. The three interties with the City include one bi-directional intertie allowing for limited water exchanges, and two uni-directional (to SqCWD) interties that provide SqCWD with greater reliability in the event of an emergency. Over the five-year period of 2011-2015, SqCWD received approximately 0.3 acre-feet of water from CWD and the City, and provided 6.09 acre-feet (approximately 2 mgy) of water to the City (WSC 2016b).

Central Water District

CWD covers a service area of approximately 5 square miles east of the unincorporated area of Aptos, between the SqCWD and City of Watsonville. With an estimated population of 2,700 to 3000, CWD produced 126.7 million gallons of water and customers consumed 123.3 million gallons in fiscal year 2017/2018. Total production and associated groundwater pumping have declined since 2008 (CWD 2020).

CWD's water supply source is also drawn exclusively from the same two groundwater aquifers in the overdrafted Santa Cruz Mid-County Groundwater Basin, the Purisima and the Aromas. CWD shares these two aquifers with other groundwater users and is a member of the Santa Cruz Mid-County Groundwater Sustainability Agency. The CWD has monitored groundwater resources and is currently designated to manage the groundwater resources within its boundaries. There are three wells that provide CWD's water supply and an additional three wells that are currently inactive (CWD 2020). The District has an adequate water supply and is addressing infrastructure repairs and upgrades through its capital improvement program (LAFCO 2017).

4.13.1.3 Wastewater

Service Area

The City wastewater treatment facility (WWTF) serves the cities of Santa Cruz and Capitola and parts of unincorporated Santa Cruz County. In addition to the City of Santa Cruz, the WWTF serves the Santa Cruz County Sanitation District (SCCSD) and Community Service Areas (CSA) 10 and 57. For further description, see the City's General Plan 2030 EIR (Draft EIR volume), which is incorporated by reference (City of Santa Cruz 2012). The City also provides capacity for the City of Scotts Valley to discharge its treated wastewater into the Pacific Ocean via the City's discharge.

Treatment Plant Overview

The City owns and operates the WWTF, located on California Street adjacent to Neary Lagoon that provides secondary level of treatment. The City treats sewage from domestic and industrial sources and discharges the treated effluent into the Pacific Ocean under the provisions of a waste discharge permit (NPDES No. CA0048194) issued by the California RWQCB, Central Coast Region (Order No. R3-2005-0003). Monterey Bay, into which the region's treated wastewater is disposed, was designated in 1992 as a National Marine Sanctuary. Wastewater influent and effluent characteristics are carefully monitored for compliance with state water quality requirements. The City also participates in a regional receiving water monitoring program with other dischargers in the Monterey Bay area (City of Santa Cruz 2012).

The City's WWTF was upgraded in 1998 to provide secondary treatment in order to meet state and federal waste discharge requirements, and currently produces wastewater of a quality that would be classified as Disinfected Secondary-23. The treatment process consists of a series of steps, including screening, aerated grit removal, primary sedimentation, trickling filter treatment, solids contact, secondary clarification, and ultraviolet disinfection (City of Santa Cruz 2012).

The WWTF is not currently permitted for and does not now produce recycled water for offsite reuse. The current level of treatment is not sufficient for general irrigation without additional treatment and facility upgrades. In addition to the treatment upgrades, a distribution system, including pumps, meters, storage facilities, and separate piping would be required to convey the recycled water to customers (City of Santa Cruz 2012). The City is actively investigating the feasibility of development and use of recycled water, as discussed in Section 4.3.1.2, Water Supply.

In 2019, the City approved an agreement with SqCWD to allow SqCWD to utilize a portion of the treated effluent produced by the City's WWTF for groundwater replenishment as part of Pure Water Soquel approved by the SqCWD. Pure Water Soquel will treat a portion of secondary effluent water from the City's WWTF with a new tertiary treatment facility, located at the City's WWTF. That tertiary-treated water will then be pumped to a new Advance Water Purification Facility located in Live Oak for further purification using advanced water purification methods for injection into the ground to replenish the groundwater basin. The agreement also included additional benefits of providing a facility to produce Title 22 recycled water for the City's use at the WWTF. In the future, a portion of that water could be used for a recycled water and irrigation water for La Barranca Park, which runs along Bay Street near the WWTF. Pure Water Soquel will also reduce the City's discharge of treated secondary wastewater to the Monterey Bay National Marine Sanctuary (City of Santa Cruz 2020c).

Treatment Plant Capacity

The WWTF has a permitted wastewater treatment capacity of 17.0 million gallons per day (mgd). In 2019, the WWTF treated 3.3 billion gallons of wastewater effluent at an average daily rate of 9.04 mgd. The SCCSD has treatment capacity rights of 8 mgd at the City's WWTF. The City contributes approximately 5.0 mgd and has a remaining capacity of 4.0 mgd. The SCCSD contributes approximately 5.5 mgd with a remaining capacity of 2.5 mgd. The total remaining treatment plant capacity, therefore, is 6.5 mgd.

Treated Effluent Disposal

The treated effluent is disposed into the Monterey Bay via a deep ocean outfall constructed in 1987. The outfall extends 12,250 feet on the ocean bottom and terminates one mile offshore at a depth of approximately 110 feet below sea level. A 1,200-foot diffuser at the end of the pipe provides an initial dilution of greater than 139 parts seawater to 1 part wastewater (City of Santa Cruz 2012). The City of Scotts Valley discharges its treated effluent via the City's ocean outfall. The Scotts Valley Wastewater Treatment Plant has a permitted capacity of 1.5 million gpd and treats water to secondary and tertiary levels. Secondarily treated effluent that is not used for recycled water is transmitted via a main to Santa Cruz and discharged to the ocean through the outfall shared with the City.

Wastewater Collection

The City wastewater collection system serves approximately 15,000 connections. The collection system includes 23 pump stations and over 160 miles of sewer pipeline ranging in size from 6 to 54 inches in diameter. The City has a hydraulic model for the sewer system and continues to focus on collections system projects that reduce infiltration and inflow into the system (City of Santa Cruz 2012). The SCCSD provides sanitary sewer collection within its service area boundaries in unincorporated urban areas that generally extend from the eastern limits of the City to the unincorporated Aptos community to the south.

4.13.1.4 Solid Waste

Solid waste generally refers to garbage, refuse, sludge, and other discarded solid materials that come from residential, industrial, and commercial activities. Construction, demolition, and inert wastes are also classified as solid waste. Agricultural waste can be generated by agricultural areas, but typically is disposed on site (composted, mulched, chipped, or burned) rather than entering the municipal waste stream. The general waste classifications used for California waste management units, facilities, and disposal sites are Nonhazardous Solid Waste, Special Waste, Designated Waste, Hazardous Waste, and Industrial Waste. As stated in Chapter 3, Project Description, disposal of solid waste generated by the Proposed Project would likely occur at the City of Santa Cruz Resource Recovery Facility (RRF) or the County of Santa Cruz Buena Vista Landfill. The remaining solid waste disposal capacity of these landfills is summarized in Table 4.13-1 and further described in the following sections.

Table 4.13-1. Project Area Landfill Capacity

Solid Waste Facility	Total Capacity			Daily Capacity		
	Total Permitted Capacity (cubic yards)	*Remaining Capacity (cubic yards)*	*Percent Remaining*	*Permitted Daily Capacity (tons)*	*Average Daily Disposal in 2019 (tons)*	*Percent Remaining*
City of Santa Cruz Resource Recovery Facility	10,484,325	4,806,477	46%	535	141	74%
Buena Vista Landfill	7,537,700	2,206,541	29%	838	277	67%

Sources: CalRecycle 2019, 2020b, 2020c.

City of Santa Cruz

Solid waste in the City is taken to the City's RRF, which includes a sanitary landfill, recycling center, yard waste drop-off, construction and demolition drop-off, and household hazardous waste drop-off. The RRF is located approximately 3 miles west of the City off State Highway 1 at 605 Dimeo Lane. The RRF is a 100-acre solid waste landfill facility with permitted composting or green waste operation with 67 acres available for disposal use. The RRF is permitted to receive a total of 10,484,325 cubic yards (cy) of solid waste, including construction/demolition, dead animals, green materials, industrial, inert, metals, mixed municipal, sludge (biosolids), tires, and wood waste. The facility has a maximum permitted daily solid waste throughput capacity of 535 tons, and a maximum permitted green waste throughput capacity of 12,500 cy. Based on the most recent facility capacity evaluation in May 2017, the landfill had a remaining capacity of 4,806,477 cy and an estimated closure date of January 2058 (CalRecycle 2020c). In 2019, 51,350 tons of solid waste were disposed of at the RRF (CalRecycle 2019), which is an average of approximately 141 tons per day.

County of Santa Cruz

Santa Cruz County Recycling and Trash Services (Recycling & Trash) is responsible for the operation and administration of solid waste diversion and disposal in the unincorporated areas of the County. Recycling & Trash operates the County's two solid waste facilities, the Buena Vista Landfill located west of the City of Watsonville at 1231 Buena Vista Drive and the Ben Lomond Transfer Station located east of Ben Lomond in the San Lorenzo Valley at 9835 Newell Creek Road. The cites of Scotts Valley and Capitola have franchise agreements with Green Waste Recovery for collection of refuse, recycling and yardwaste. Green Waste Recovery also uses the County's facilities.

The Buena Vista Landfill is a 126-acre solid waste landfill facility with permitted composting or green waste operation with 61 acres available for disposal use. The Buena Vista Landfill is permitted to receive a total of 7,537,700 cy of solid waste, including agricultural, construction/demolition, contaminated soil, dead animals, green materials, industrial, inert, metals, mixed municipal, sludge (biosolids), tires, and wood waste. The facility has a maximum permitted daily solid waste throughput capacity of 838 tons, and a maximum permitted green waste throughput capacity of 12,500 cy. Based on the most recent facility capacity evaluation in 2018, the Buena Vista Landfill has a remaining capacity 2,206,541 cy and an estimated closure date of July 2031 (CalRecycle 2020b). In 2019, 101,190 tons of solid waste were disposed of at the Buena Vista Drive Sanitary Landfill (CalRecycle 2019), which is an average of approximately 277 tons per day.

The Ben Lomond Transfer Station is a 3.5-acre large-volume solid waste transfer/processing facility located east of Ben Lomond in the San Lorenzo Valley at 9835 Newell Creek Road. The Ben Lomond Transfer Facility is permitted to receive and process a total of 300 tons per day of mixed municipal, green materials, tires, construction/demolition, and industrial waste. Processed waste from this facility is either diverted for reuse, recycling, or composting off site or is transferred to the Buena Vista Landfill (CalRecycle 2020a).

4.13.1.5 Energy

Electricity and Natural Gas

Pacific Gas and Electric Company (PG&E) provides electrical and natural gas service to the region. Incorporated in California in 1905, PG&E is one of the largest combination natural gas and electric utilities in the United States. It currently provides service to approximately 16 million people throughout a 70,000-square-mile service area in northern and central California from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada in the east. The service area includes 106,681 circuit miles of electric distribution lines, 18,466 circuit miles of interconnected transmission lines. 42,141 miles of natural gas distribution pipelines and 6,438 miles of transportation pipelines. PG&E and other utilities in the state are regulated by the California Public Utilities Commission (PG&E 2020).

Monterey Bay Community Power (MBCP) was formed in March 2017 as a joint powers authority to provide locally controlled, clean and renewable electricity to residents and businesses in Monterey, San Benito, and Santa Cruz Counties, as well as parts of Santa Barbara and San Luis Obispo Counties. MBCP recently underwent a name change to Central Coast Community Energy (3CE). 3CE operates through the Community Choice Energy (CCE) model established by the State of California. The CCE model enables communities to choose clean-source power at a cost equivalent to PG&E while retaining PG&E's role in maintaining power lines and providing customer service. The CCE model helps ensure local economic vitality because surplus revenues that would normally flow to PG&E will stay in the community. 3CE started serving electricity to customers beginning spring 2018, with current PG&E customers automatically switched over (MBCP [3CE] 2020). Notably, the City purchases electricity from 3CE for its municipal facility operations.

According to the U.S. Energy Information Administration (EIA), California used approximately 255,224 gigawatt hours of electricity in 2018 (EIA 2020a). Electricity usage in California for different land uses varies substantially by the types of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA 2020b).

In Santa Cruz County, PG&E reported an annual electrical consumption of approximately 1,212 million kWh in 2018, with 667 million kWh for non-residential use and 546 million kWh for residential use (CEC 2020a).

According to the EIA, California used approximately 2,136,907 million cubic feet of natural gas in 2018 (EIA 2020c). The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers account for approximately 35% of the natural gas delivered by California utilities (CPUC 2020). Large consumers, such as electric generators and industrial customers (noncore customers), account for approximately 65% of the natural gas delivered by California utilities (CPUC 2020). CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. Biogas (e.g. from wastewater treatment facilities or dairy farms) is just beginning to be delivered into the gas utility pipeline systems, and the State has been encouraging its development (CPUC 2020).

In 2018, PG&E had delivered approximately 52 million therms to Santa Cruz County, with 21 million therms for non-residential use and 31 million therms for residential use (CEC 2020b).

Transportation-Related Energy Consumption

According to the EIA, California used approximately 681 million barrels of petroleum in 2018, with the majority (584 million barrels) used for the transportation sector (EIA 2020d). This total annual consumption equates to a daily use of approximately 1.9 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 78.4 million gallons of petroleum per day, adding up to an annual consumption of 28.6 billion gallons of petroleum. In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described in Section 4.13.2, Regulatory Framework, below.

4.13.1.6 Telecommunications Systems

Numerous telecommunications providers serve the project area and provide access to infrastructure for broadband, fiber optic, wireless, and emerging technologies. Telecommunications providers in the area include AT&T, Xfinity from Comcast, Cruzio Internet, and Charter Spectrum, among others.

4.13.1.7 Existing Infrastructure Conditions

Existing Water Infrastructure

The City's major water infrastructure facilities include three water treatment plants, including the Graham Hill Water Treatment Plants and two groundwater treatment plants related to the Beltz well system; 4 raw water pump stations, 10 distribution tanks with a total maximum capacity of 21.2 million gallons of treated water storage; 7 surface water diversions; 7 groundwater production wells; and approximately 300 miles of treated and raw water pipelines interconnecting the City's system. Key components of the City water system, including the North Coast system, the Newell Creek Dam inlet/outlet pipe, and water treatment facilities have reached the end of their useful life and are overdue for renewal and replacement. The City's Capital Improvement Program (CIP) for water infrastructure includes plans and funding for numerous capital improvements projects, including rehabilitation or replacement projects, upgrades and improvement projects, water supply augmentation components, and water main replacements (City of Santa Cruz 2020a, 2020b). Section 4.0, Introduction to Analyses, identifies the CIP projects that are currently planned or under construction.

The SqCWD water supply system consists of 18 production wells (15 of which are currently active), approximately 166 miles of pipeline, and 18 water storage tanks (ESA 2018). The CWD distribution system consists of approximately 23.2 miles of 2- to 10-inch-diameter pipe. The distribution system is separated into five pressure zones, each supplied by pressure-reducing valves or by a combination of booster pumps and storage tanks. There are three wells that provide CWD's water supply and an additional three wells that are currently inactive (CWD 2020).

The SLVWD maintains approximately 190 miles of pipeline and pump stations, storage tanks and water treatment facilities within its three water systems. SLVWD has identified and prioritized its infrastructure needs in the 2017 Capital Improvement Plan. The principal needs are well replacements, storage tanks, distribution system upgrades, and interties (LAFCO 2020).

Existing Wastewater Infrastructure

See Section 4.13.1.3, Wastewater, regarding the City's WWTF. Within the City, municipal wastewater is delivered to the treatment plant through a collection system consisting of 160 miles of gravity mains, 3.5 miles of force main, and 21 pumping stations (City of Santa Cruz 2016). As previously indicated, the SCCSD provides sanitary sewer collection within its service area boundaries that generally extend from the eastern limits of the City to the unincorporated Aptos community to the south. The SCCSD serves the following areas in the County with sewer service: Aptos, Capitola, Soquel, and Live Oak.

Proposed Infrastructure Component Sites

This section provides information on existing infrastructure conditions at each of the project and programmatic infrastructure component sites for which improvements and new facilities are proposed. All existing sites are supplied with electrical service.

Aquifer Storage and Recovery Sites

As there are no definitive sites identified to date for new ASR facilities, no site-specific conditions are provided.

Beltz No. 8 (Beltz 8) and associated treatment facilities are located on City-owned property at 3701 Roland Drive in the unincorporated County of Santa Cruz. Components of the existing facility include the following: (1) a pump control and chemical storage buildings; (2) an iron and manganese treatment system consisting of two pressurized dual media filter tanks; (3) one 75,000-gallon backwash tank used in the iron and manganese treatment; and (4) a 210-foot-deep well that has a casing diameter of 14 inches, submersible pump and concrete pedestal, station piping including treated water pipeline, and a sewer connection that connects to other facilities in Roland Drive.

Beltz No. 9 (Beltz 9) is located on City-owned property at 740 30th Avenue, in the unincorporated County area. Components of the existing facility include the following: (1) a pump control cabinet and (2) a 240-foot-deep well that has a casing diameter of 14 inches, submersible pump and concrete pedestal, and well head station piping.

Beltz No. 10 (Beltz 10) is located on City-owned property at 977 34th Avenue, in the unincorporated County area. Components of the existing facility include the following: (1) a pump control cabinet and (2) a 240-foot-deep well that has a casing diameter of 14 inches, submersible pump and concrete pedestal, and well head station piping.

Beltz No. 12 (Beltz 12) and associated treatment facilities are located on City-owned property at 2750 Research Park Drive, in the unincorporated Soquel area of the County, Components of the existing facility include the following: (1) a pump control and chemical storage building; (2) an iron and manganese treatment system consisting of a pressurized filter tank with various media inside; (3) two backwash tanks used in the iron and manganese treatment that each have a capacity of 35,000 gallons; and (4) a 640-foot-deep well that has a casing diameter of 16 inches, submersible pump and concrete pedestal, station piping including treated water pipeline, sewer connections, and stormwater drainage facilities that connect to other facilities in Research Park Drive.

Intertie Improvement Sites

The City's water supply system could be interconnected to the SVWD's system through installation of approximately 8,000 linear feet of new 12-inch-diameter intertie piping from Sims Road in the south, along La Madrona Drive to the north to the City of Scotts Valley where a new pump station would be constructed as described in Section 3.4.3.3. Interconnection of the SVWD and the SLVWD systems has already been constructed and permitted for

emergency use as part of the Scotts Valley Multi-Agency Regional Intertie Project. Additional permitting would be required to use the existing intertie for non-emergency use as part of a potential future water supply transfer and exchange project. It is possible that other alignments to connect the City's system to SVWD and/or SLVWD could be considered in the future. A range of alternative pipeline alignments and pump station locations would likely be considered if and when an intertie project is pursued, planned, and designed.

The three interties between the City and SqCWD include one bi-directional intertie allowing for limited water exchanges, and two uni-directional (to SqCWD) interties that provide SqCWD with greater reliability in the event of an emergency. The existing interties between the City's and the SqCWD's water systems have capacity for 1.5 mgd during normal operations, but some existing pipeline segments and the existing McGregor Drive pump station are not adequate to efficiently move water through the SqCWD if water transfers become part of normal operations.

SqCWD also has two interties with the CWD on Huntington Drive and on Soquel Drive near Freedom Boulevard. Booster pump stations on these two interties would be required to allow SqCWD to move water to CWD. Currently, CWD can move water to SqCWD, but SqCWD cannot move water to CWD.

Surface Water Diversion Sites

The Felton Diversion was constructed in 1976 and, in general, consists of an inflatable rubber dam, a fish-screened intake structure, a conventional sump and high-lift pump station, a slide-gated bypass channel, a Denil-style fish ladder, an operations building, and miscellaneous site improvements.

The original Tait Diversion was constructed in 1961; it was modified in 1983 with a fish screen that met California Department of Fish and Wildlife[5] and National Marine Fisheries Service regulatory design criteria at that time. The City's Coast Pump Station facility that is adjacent to the Tait Diversion has evolved over time and currently includes two pump stations, the Coast Pumps and the River Pumps, which pump raw water from City's North Coast sources and the San Lorenzo River, respectively, to City's GHWTP, approximately 1 mile to the north.

4.13.2 Regulatory Framework

4.13.2.1 Federal

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects our nation's waters, including lakes, rivers, aquifers, and coastal areas. As defined by the U.S. Environmental Protection Agency (EPA), the CWA is the primary law regulating pollution of the nation's waterways and is intended to govern the restoration and maintenance of the chemical, physical, and biological integrity of the nation's water (EPA 2018).

Section 303 of the CWA requires states to identify where existing pollution control technologies alone cannot meet water quality standards. Every 2 years, states are required to submit a list of impaired water bodies to the EPA, where they are prioritized based on (1) the severity of the pollution and (2) the designated use of the water (EPA 2018).

Section 401 of the CWA requires that an applicant seeking a federal permit to conduct any activity, including the construction or operation of a facility that may result in the discharge of any pollutants, obtain certification from the

[5] The former Department of Fish and Game was renamed the Department of Fish and Wildlife in 2013.

state. The Section 401 certification requirement verifies compliance with existing water quality requirements or waives the certification requirement (EPA 2020a).

Section 402 of the CWA implements the National Pollution Discharge Elimination System (NPDES).

Section 404 of the CWA established a permit program to regulate the discharge of dredged materials or fill into waters of the United States, including wetlands. Common activities regulated by Section 404 include water resource projects (e.g., dams/levees), infrastructure development (e.g., road and airports), and mining activities (EPA 2020b).

National Pollutant Discharge Elimination System

The NPDES is legislated by Section 402 of the CWA and regulated by the EPA. The permitting program prohibits the unauthorized discharge of pollutants from a point source (e.g., pipe, ditch, well) to United States waters. The permitting program addresses municipal, commercial, and industrial wastewater discharges and discharges from large animal feeding operations. Under Section 402 of the CWA, permittees must verify compliance with permit requirements by monitoring their effluent, maintaining records, and filing periodic reports. The program is administered at the local level by the Regional Water Quality Control Boards (RWQCBs). Under the NPDES program, the State Water Resources Control Board (SWRCB) implements Waste Discharge Requirements for some discharges in addition to those subject to NPDES permits. Permits contain specific requirements that limit the pollutants in discharges. They also require dischargers to monitor their wastewater to ensure that it meets all requirements. Wastewater dischargers must maintain their treatment facilities, and treatment plant operators must be certified. The SWRCB routinely inspects treatment facilities and strictly enforce permit requirements.

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Intermodal Surface Transportation Efficiency Act

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 promoted the development of intermodal transportation systems to maximize mobility and address national and local interests in air quality and energy. ISTEA contained factors for metropolitan planning organizations to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, metropolitan planning organizations adopted policies defining the social, economic, energy, and environmental values guiding transportation decisions.

Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century was signed into law in 1998 and builds on the initiatives established in the ISTEA legislation (previously discussed). The act authorizes highway, highway safety, transit, and other efficient surface transportation programs. The act continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of transportation decisions. The act also provides for

investment in research and its application to maximize the performance of the transportation system through, for example, deployment of intelligent transportation systems to help improve operations and management of transportation systems and vehicle safety.

Energy Independence and Security Act

On December 19, 2007, the Energy Independence and Security Act (EISA) of 2007 was signed into law. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation requires ever-increasing levels of renewable fuels to replace petroleum (EPA 2017). The EPA is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in greenhouse gas (GHG) emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS program to include diesel in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel and set separate volume requirements for each one.
- EISA required the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

4.13.2.2 State

Urban Water Management Planning Act

In 1983, the California State Legislature (Legislature) enacted the Urban Water Management Planning Act (California Water Code, Sections 10610–10656), which requires specified urban water suppliers within the state to prepare a UWMP and update it every 5 years. State and local agencies and the public frequently use UWMPs to determine if water supply planning has been efficiently implemented. As such, UWMPs serve as an important element in documenting water supply availability and reliability for purposes of compliance with Senate Bill (SB) 610 and SB 221, which link water

supply sufficiency to large land use development project approvals. Urban water suppliers also must prepare UWMPs, pursuant to the Urban Water Management Planning Act, in order to be eligible for state funding and drought assistance.

A UWMP provides information on water usage, water supply sources, and water reliability planning within a specified water agency service area. It also may provide implementation schedules to meet projected demands over the planning horizon a description of opportunities for new development of desalinated water, groundwater information (where groundwater is identified as an existing or planned water source), a description of water quality over the planning horizon, and identification of water management tools that maximize local resources and minimize imported water supplies. Additionally, a UWMP evaluates the reliability of water supplies within the specified service area. This includes a water supply reliability assessment, a drought risk assessment, and a water shortage contingency plan.

Senate Bill 7

SB 7 (SB X7-7) was enacted in November 2009 and requires all water suppliers to increase water use efficiency. The legislation set an overall goal of reducing per capita urban water use by 20% by December 31, 2020 (California Water Code Section 10608.20). In order to reach this goal, SB X7-7 required each urban retail water supplier to report progress in meeting water use targets (California Water Code Section 10608.40). The law also required wholesale water suppliers to support their retail member agencies' efforts to comply with SB X7-7 through a combination of regionally and locally administered active and passive water conservation measures, programs, and policies, as well as the use of recycled water.

California Water Code

California's Porter-Cologne Water Quality Control Act (1969), which became Division 7 (Water Quality) of the California Water Code, establishes the responsibilities and authorities of the nine RWQCBs and the SWRCB. Among other things, it directs each regional board to formulate and adopt a water quality control plan—known as a basin plan—for all areas within the region. The basin plan defines existing and potential beneficial uses and water quality objectives for coastal waters, groundwater, surface waters, imported surface waters, and reclaimed waters in the basin. The RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges can affect water quality.

Water Supply Assessments

In 2001, Senate Bill (SB) 610 amended California law regarding review of water availability for large projects (Section 10910 et seq. of the Water Code; Section 21151.9 of the Public Resources Code [CEQA]; see also Section 15155 of the CEQA Guidelines). Pursuant to SB 610, preparation of a water supply assessment (WSA) is required for projects subject to CEQA that meet specified criteria regarding project size: projects of 500 or more residential units, 500,000 square feet or more of retail commercial space, 250,000 square feet or more of office commercial space, 500 or more hotel rooms, specified industrial uses, or a project that would result in a water demand equal to or greater than the amount needed to serve a 500-unit residential project. These assessments, prepared by "public water systems" responsible for service, address whether there are adequate existing or projected water supplies available to serve proposed projects over a 20-year period, in addition to existing demand and other anticipated development in the service area. The Proposed Project does not propose new residential, commercial, hotel or other development, and therefore, it does not meet the requirements that would trigger the preparation of a WSA.

California Integrated Waste Management Act

AB 939, known as the California Integrated Waste Management Act of 1989, required all California cities and counties to divert 50% of the waste generated within their boundaries by the year 2000. The act requires each California city and county to prepare, adopt, and submit to CalRecycle a Source Reduction and Recycling Element (SRRE) that demonstrates how the jurisdiction will meet the California Integrated Waste Management Act's mandated diversion goals. Each jurisdiction's SRRE must include specific components, as defined in California Public Resources Code Sections 41003 and 41303. In addition, the SRRE must include a program for the management of solid waste generated in the jurisdiction consistent with the following hierarchy: (1) source reduction, (2) recycling and composting, and (3) environmentally safe transformation, and (4) land disposal.

Assembly Bill 341

AB 341, adopted in October 2011, amended the California Integrated Waste Management Act and established a statewide policy goal to divert 75% of solid waste from landfills by 2020. AB 341 focused on mandatory commercial recycling and requires California commercial enterprises and public entities that generate 4 or more cubic yards per week of waste to arrange for recycling services.

Assembly Bill 1826

AB 1826 (2014) requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate on a weekly basis. Additionally, AB 1826 requires that, after January 1, 2016, all local jurisdictions implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings with five or more units. Organic waste includes food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. This law phases in the mandatory recycling of commercial organics over time.

Warren-Alquist Act

The California legislature passed the Warren-Alquist Act in 1974. The Warren-Alquist Act created the California Energy Commission (CEC). The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high-demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan

The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure that adequate, reliable, and reasonably priced electrical power and natural gas supplies are provided, and identified policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. In 2005, a second Energy Action Plan was adopted by the CEC and CPUC to reflect various policy changes and actions of the prior 2 years.

At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an update that examines the state's ongoing actions in the context of global climate change.

Senate Bills 1078 (2002), 107 (2006), X1-2 (2011), 350 (2015) and 100 (2018)

Senate Bill (SB) 1078 established the California RPS Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill relatedly required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) required all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% of electricity had to come from renewables; by December 31, 2016, 25% of electricity had to come from renewables; and by December 31, 2020, 33% will be required to come from renewables.

SB 350 (2015) expanded the RPS by requiring retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity does not increase carbon emissions elsewhere in the western grid. Additionally, 100% zero-carbon electricity cannot be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the RPS requirements described above. The Proposed Project's reliance on non-renewable energy sources would be reduced accordingly.

Assembly Bill 1007 (2005)

AB 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with other state agencies, plus federal and local agencies. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the state legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 required California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted SB 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focused on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The current Title 24 standards are the 2019 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2020. Title 24 also includes Part 11, California's Green Building Standards (CALGreen). CALGreen establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, electric vehicle (EV) charging stations, shade trees, water conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, excavated soil and land clearing debris, and commissioning (24 CCR Part 11).

Integrated Energy Policy Report

The CEC is responsible for preparing integrated energy policy reports that identify emerging trends related to energy supply, demand, and conservation; public health and safety; and maintenance of a healthy economy. The CEC's 2018 Integrated Energy Policy Report discusses the state's policy goals of decarbonizing buildings, doubling energy efficiency savings, and increasing flexibility in the electricity grid system to integrate more renewable energy (CEC 2018). Specifically, for the decarbonizing of building energy, the goal would be achieved by designing future commercial and residential buildings to have their energy sourced almost entirely from electricity in place of natural gas. Regarding the increase in renewable energy flexibility, the goal would be achieved through increases in energy storage capacity within the state, increases in energy efficiency, and adjusting energy use to the time of day when the most amount of renewable energy is being generated. Over time these policies and trends would serve to reduce the Proposed Project's GHG emissions profile and energy consumption as they are implemented.

State Vehicle Standards

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emissions standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emissions standards for

motor vehicles manufactured in 2009 and all subsequent model years. The 2009–2012 standards resulted in a reduction in approximately 22% of GHG emissions compared to emissions from the 2002 fleet, and the 2013–2016 standards resulted in a reduction of approximately 30% compared to the 2002 fleet.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global-warming gases with requirements for greater numbers of zero-emissions vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 40% fewer global-warming gases and 75% fewer smog-forming emissions (CARB 2020a). However, the EPA and National Highway Traffic Safety Administration (NHTSA) published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which revokes California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. Since California and 22 other states, as well as the District of Columbia and four cities, filed suit against the EPA and a petition for reconsideration of the rule, the effect of the SAFE Rule on the Advanced Clean Cars program is still to be determined pending the ruling of ongoing litigation.

Although the focus of the state's vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates established in AB 32. As codified in California Government Code Section 65080, SB 375 requires Metropolitan Planning Organizations to include a sustainable communities strategy in their regional transportation plans. The main focus of the sustainable communities strategy is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also part of a bigger effort to address other development issues, including transit and vehicle miles traveled (VMT), which influence the consumption of petroleum-based fuels.

4.13.2.3 Local

City of Santa Cruz Municipal Code

Title 16 of the City's Municipal Code addresses water, sewers, and other public services. Title 16 chapters relevant to water service include:

- Chapter 16.01, Water Shortage Regulations and Restrictions
- Chapter 16.02, Water Conservation
- Chapter 16.03, Plumbing Fixture Retrofit Regulations
- Chapter 16.04, Water Services
- Chapter 16.05, Loch Lomond Recreation Area, Watershed Lands and Riparian Conservation Areas
- Chapter 16.06, Regulation of Water Wells
- Chapter 16.09, Water System Improvements
- Chapter 16.10, Desalination Plant – Voter Approval
- Chapter 16.11, Water Service Accounts
- Chapter 16.13, Unified Utilities Billing System

- Chapter 16.14, System Development Charges
- Chapter 16.15, Water Use
- Chapter 16.16, Water-Efficient Landscaping
- Chapter 16.24, Utility Service Area Expansion

The City has enacted several ordinances regarding water conservation. Chapter 16.01 identifies regulations and restrictions during declared times of water shortages. Chapter 16.02 sets forth water conservation provisions to prevent the waste or unreasonable use or method of use of water. Chapter 16.16 sets forth requirements for water-efficient landscaping and also is intended to comply with the California Government Code Section 65591 et seq., the Water Conservation in Landscaping Act. The regulations are applicable to applicants for new, increased, or modified water service within the areas served by the City. On June 28, 2011, the City Council adopted Ordinance 2011-04, which amends the Municipal Code and adds a new section (16.08.065) to allow graywater use for irrigation. Graywater is wastewater that originates from showers, bathtubs, bathroom sinks, and clothes washing machines.

Chapter 16.08 ("Sewer System Ordinance") of the City's Municipal Code regulates discharge to sanitary sewer and requires that all wastewater be discharged to public sewers, with the exception of graywater as allowed by Municipal Code Chapter 16.08. Septic tanks and cesspools are not allowed within city boundaries except as specified for limited conditions in Chapter 6.20 of the Municipal Code.

General Plans and Local Coastal Programs

The study area for the Proposed Project includes the jurisdictions of the City of Santa Cruz, City of Capitola, City of Scotts Valley, and County of Santa Cruz. The general plans and, where relevant, the local coastal programs of these jurisdictions include policies and programs related to utilities and energy. Section 4.9, Land Use and Planning, discusses applicable general plan and local coastal program policies related to utilities and energy, as relevant to the Proposed Project.

Santa Cruz County Landfill Ban

On June 21, 2005, the Santa Cruz County Board of Supervisors voted to ban the disposal of recyclable materials in the Buena Vista Landfill and created new requirements for County residents and businesses to recycle. The ban prohibits placement of recyclable materials in refuse containers in the unincorporated County area. The landfill ban and list of recyclable materials prohibited are provided in the Santa Cruz County Code, Title 7, Health and Safety, Chapter 7.20, Solid Waste. The list covers a variety of household and commercial wastes, ranging from yard waste and newspapers, to concrete and electronic waste, among many others. The ban further provides that if the director of Santa Cruz County Department of Public Works determines that a particular recyclable material cannot be recycled for a specific time period, then the director may permit the disposal of said recyclable material at any county disposal facility for that time period.

Santa Cruz County Zero Waste Plan

In 2015, the County of Santa Cruz Department of Public Works published the Zero Waste Plan. The Plan is intended to guide County officials in the planning and decision-making process to achieve zero waste goals. The Plan outlines several strategies and initiatives aimed at moving the County towards a zero-waste future. These include:

- Supporting legislation and adopting policies that require minimized environmental impacts and reduce the waste stream;
- Ensuring that facilities and infrastructure are in place to properly manage all recovered materials;

- Continuing to implement activities and programs that support the County's Zero Waste Policy;
- Fostering sustainable green practices and business;
- Educating and engaging businesses, organizations, public agencies, and residents to encourage zero-waste behavior change (SCCDPW 2015).

Energy Watch Program

The Association of Monterey Bay Area Governments (AMBAG) Energy Watch Program is a partnership between AMBAG and PG&E, which seeks to reduce energy use in the Monterey Bay region by providing the following resources to eligible PG&E customers:

- Energy assessments and audits
- Direct installation of energy efficient equipment
- Technical assistance and financial incentives for energy efficient retrofits in municipal buildings
- Energy efficiency seminars and training courses in the region.
- Information on other PG&E energy efficiency programs and services

AMBAG is the MPO for the region, which includes Monterey, San Benito, and Santa Cruz counties. In 2008, AMBAG adopted the Monterey Bay Regional Energy Plan, which provides a framework that local cities and counties can adopt or use as guidelines to reduce energy use (AMBAG 2008). Also, AMBAG adopted the Monterey Bay 2040 Moving Forward – 2040 Metropolitan Transportation Plan/Sustainable Communities Strategy (2040 MTP/SCS), the implementation of which is anticipated to achieve a 4%-per-capita reduction and nearly 7%-per-capita reduction in GHG emissions from passenger vehicles by 2020 and 2035, respectively (AMBAG 2018). The 2040 MTP/SCS outlines the region's proposed transportation network, emphasizing multimodal system enhancements, system preservation, and improved access to high quality transit, as well as land use development that complements this transportation network (AMBAG 2018). These transportation strategies would reduce VMT and associated petroleum fuels.

In addition, local climate action plans and strategies, which include energy-consumption-reduction measures, are described in Section 4.6, Greenhouse Gas Emissions.

4.13.3 Impacts and Mitigation Measures

This section contains the evaluation of potential environmental impacts associated with the Proposed Project related to water supply, wastewater and solid waste, and energy. The section identifies the standards of significance used in evaluating the impacts, describes the methods used in conducting the analysis, and evaluates the Proposed Project's impacts and contribution to significant cumulative impacts, if any are identified.

4.13.3.1 Standards of Significance

The standards of significance used to evaluate the impacts of the Proposed Project related to utilities and energy are based on Appendix G of the CEQA Guidelines and the City of Santa Cruz CEQA Guidelines, as listed below. A significant impact would occur if the Proposed Project would:

A. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects, or extend a sewer trunk line with capacity to serve new development.
B. Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, or use water in a wasteful manner.
C. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
D. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
E. Not comply with federal, state, and local management and reduction statutes and regulations related to solid waste or litter control.
F. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation, or
G. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.13.3.2 Analytical Methods

This section evaluates the potential utilities and energy impacts associated with construction and operation of the Proposed Project. The analysis of potential impacts addresses the various project and programmatic components listed in Table 4.13-2, which are described in detail in Chapter 3, Project Description.

Table 4.13-2. 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		✓

Water Supply and Wastewater

The analyses are based on review of the project and programmatic components of the Proposed Project in light of existing adopted plans. Operation of the Proposed Project would result in a limited increase of permanent employees, estimated at a total of three new staff.

Solid Waste

The analysis of potential solid waste impacts associated with the project and programmatic infrastructure components is based on a qualitative discussion in comparison to the existing capacities of landfills expected to serve the Proposed Project.

Energy

Construction

Electricity. The amount of electricity used during construction of the project and programmatic infrastructure components would be minimal because typical demand would stem from electrically powered hand tools. As such, construction electricity demand is qualitatively addressed.

Natural Gas. Natural gas is not anticipated to be required during construction of the project and programmatic infrastructure components; therefore, construction natural gas demand is qualitatively addressed.

Petroleum. Potential impacts were assessed for off-road equipment and on-road vehicle trips during construction, as provided by the California Emissions Estimator Model (CalEEMod) outputs (see Appendix E). Fuel consumption from construction equipment and vehicle trips was estimated by converting the total CO_2 emissions anticipated to be generated by the construction of each project and programmatic infrastructure component to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton (MT) CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per MT CO_2 per gallon (The Climate Registry 2019). Heavy-duty construction equipment associated with construction activities, vendor trucks, and haul trucks are assumed to use diesel fuel. Worker vehicles are assumed to be gasoline fueled. All details for construction criteria air pollutant emissions modeling discussed in Section 4.2, Air Quality, as well as Appendix E, are also applicable for the estimation of construction-related energy consumption. See Section 4.2.3.2, Analytical Methods, and Appendix E for a discussion of construction emissions calculation methodology and assumptions used in the energy analysis.

Operation

Once project and programmatic infrastructure component construction is complete, operations would entail a minimal increase in on-road vehicle trips associated with routine inspection and maintenance of the new facilities by City staff. It is anticipated that up to three new staff would be needed, one for the Agreed Flows implementation and two for the new ASR facility maintenance. An additional daily vehicle trip was included for Beltz ASR facility maintenance. As a conservative estimate, these new daily vehicle trips were assumed to occur seven days a week, 365 days per year. Fuel consumption from vehicle trips was estimated by converting the total CO_2 emissions anticipated to be generated to gallons using conversion the factor for CO_2 to gallons of gasoline. The Proposed Project would also result in increased electricity demand for water conveyance.

Application of Relevant Standard Practices

The Proposed Project does not include any standard operational or construction practices that are relevant to utilities and energy.

4.13.3.3 Project Impact Analysis

This section provides a detailed evaluation of utilities and energy impacts associated with the Proposed Project. Impacts associated with stormwater drainage (Significance Standard A) are addressed in Section 4.8, Hydrology and Water Quality.

Impact UTL-1: **New or Expanded Facilities (Significance Standard A).** 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 and Unavoidable)***

Water Rights Modifications

The water right modifications of the Proposed Project would not directly result in construction or operation of new facilities and associated significant environmental effects. Therefore, this project component would have no direct impacts.

The following analysis evaluates the potential indirect impacts related to new or expanded utilities as a result of the proposed water rights modifications, that once approved could result in the implementation of the project and programmatic infrastructure components of the Proposed Project.

Infrastructure Components

The project and programmatic infrastructure components of the Proposed Project would not require or result in the construction of wastewater treatment, electric power, natural gas, or telecommunications facilities that could result in potential significant environmental effects. Similarly, the Proposed Project would not require or result in construction or extension of a sewer trunk line with capacity to serve new development. However, the Proposed Project does include new and/or expanded infrastructure components to existing water system facilities, which primarily are minor infrastructure improvements that are described below. However, some of these infrastructure improvements would result in potentially significant impacts, primarily related to biological resources (nesting birds, special status species, sensitive habitat), cultural resources (archaeological, historical and tribal cultural resources), drainage, paleontological resources, hazardous materials, and construction and operational noise, as described throughout Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. These impacts can be reduced to a less-than-significant level, except for temporary construction noise at new ASR facilities and Beltz 9 ASR facility, which would remain significant and unavoidable. The impacts of new infrastructure components that are analyzed in this EIR are summarized below.

<u>Aquifer Storage and Recovery Facilities</u>

New ASR Facilities. New ASR facilities could be located in the Santa Cruz Mid-County and/or the Santa Margarita Groundwater Basins at unidentified locations and would likely consist of the following components: (1) a pump control and chemical storage building; (2) a treatment system; (3) backwash tank(s) used in the treatment system; (4) a water

well and monitoring wells, submersible pump and concrete pedestal, station piping including treated water pipelines, sewer connections, and stormwater drainage facilities that would connect to nearby facilities in adjacent roadways. Additionally, new ASR facilities would include security fencing and security lighting. A typical facility would require a site approximately 0.25 acres in size. Up to four new ASR facilities and associated sites are anticipated.

This EIR evaluates the impacts of construction and operation of new ASR facilities throughout Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, and identifies potentially significant impacts that can be reduced to a less-than-significant level with mitigation related to: special-status wildlife and nesting birds (Impact BIO-1B), special-status plants (Impact BIO-1C), sensitive habitat (Impact BIO-2), jurisdictional aquatic resources (Impact BIO-3), historic resources (Impact CUL-1), archaeological resources (Impact CUL-2), tribal cultural resources (Impact CUL-3), seismic hazards related to induced liquefaction (Impact GEO-1), paleontological resources (Impact GEO-4), release of hazardous materials from existing contaminated soil or groundwater (Impact HAZ-2), construction noise related to non-drilling activities (Impact NOI-2), and construction vibration (Impact NOI-3). Additionally, a significant and unavoidable temporary construction noise impact would result from drilling operations at these new ASR facilities (Impact NOI-2).

Beltz ASR Facilities. The Proposed Project would result in addition of minor appurtenant facilities at each of the Beltz wells to allow for ASR. These improvements generally consist of installation of new pipeline segments and upgrading and/or replacement of existing well pumps. Additional water treatment facilities may also be added at Beltz 8 and 12 ASR facilities and new monitoring wells would be installed at the Beltz 9 ASR facility. Proposed improvements are summarized below and shown on Figures 3-4a through 3-4d in Chapter 3, Project Description.

- Beltz 8 ASR Facility. For injection purposes, a new permanent 120-foot-long supply pipeline would be installed between the well and the existing distribution system piping. Improvements at this site would also include a new pipeline between the existing tank and the existing storm drain inlet, replacement of the existing submersible pump and modifications to the well head, including control panel. The existing pump and motors might be upsized to handle additional flows from the wells once all wells are converted to ASR wells. In addition, as part of a treatment plant upgrade, a second backwash tank might be installed to handle the additional backwash volumes once all existing Beltz wells (8, 9, 10, and 12) are converted to ASR wells.
- Beltz 9 ASR Facility. For injection purposes, a new permanent 120-foot-long supply pipeline would be installed between the well and the existing distribution system piping on 30th Avenue. Improvements at this site would also include replacement of the existing submersible pump and modifications to the well head, including control panel. Up to three additional approximately 2-inch-diameter monitoring wells (screened in the A and AA formation of the Purisima Aquifer) would be constructed. The wells would be constructed within the City-owned property in existing pavement or adjacent to the pavement within an existing planter area.
- Beltz 10 ASR Facility. A new permanent 140-foot-long supply pipeline would be installed between the well and the existing distribution system piping located on 34th Avenue for injection purposes. The existing submersible pump and motor assembly and control panel would be replaced. New piping and electrical conduits would be installed between the well head and the new control panel.
- Beltz 12 ASR Facility. A new permanent 100-foot-long supply pipeline would be installed between the well and the existing distribution system on Research Park Drive for injection purposes. For extraction purposes, the existing submersible pump and motor would be removed and replaced, including new valves and control panel. In addition, a second pressurized media filter tank used in the iron and manganese treatment system may be installed if needed to handle the additional flow delivered from the well.

The proposed improvements are relatively minor in size and located within existing developed areas. This EIR evaluates the impacts of construction and operation of new facilities including Beltz ASR facilities throughout Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, and identifies potentially significant impacts that can be reduced to a less-than-significant level with mitigation related to: nesting birds (Impact BIO-1B, archaeological resources (Impact CUL-2), tribal cultural resources (Impact CUL-3), paleontological resources (Impact GEO-4), localized impacts related to groundwater quality or restrictive effects in nearby wells (Impact HYD-2), and construction noise related to non-drilling activities (Impact NOI-2). Additionally, a significant and unavoidable temporary construction noise impact would result from drilling operations for Beltz 9 ASR facility (Impact NOI-2).

Water Transfers and Exchanges and Intertie Improvements

City/SVWD Intertie. The City's water supply system could be interconnected to the SVWD's system through installation of approximately 8,000 linear feet of new 12-inch-diameter intertie piping from Sims Road in the south, along La Madrona Drive to the north to the City of Scotts Valley where a new pump station would be constructed (URS 2013b) (see Figure 3-4e in Chapter 3, Project Description). Interconnection of the SVWD and the SLVWD systems has already been constructed and permitted for emergency use, as part of the Scotts Valley Multi-Agency Regional Intertie Project. Additional permitting would be required to use the existing intertie for non-emergency use such as could be pursued as part of a potential future water supply transfer and exchange project. It is possible that other alignments to connect the City's system to SVWD and/or SLVWD could be considered in the future. A range of alternative pipeline alignments and pump station locations would likely be considered if and when an intertie project is pursued, planned, and designed. Depending upon the ultimate alignment and project selected, additional environmental review under CEQA may be required. This EIR evaluates the impacts of construction and operation of new facilities that may be needed for the City/SVWD intertie throughout Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, and identifies potentially significant impacts that can be reduced to a less-than-significant level with mitigation related to: special-status wildlife and nesting birds (Impact BIO-1B), special-status plants (Impact BIO-1C), sensitive habitat (Impact BIO-2); archaeological resources (Impact CUL-2), tribal cultural resources (Impact CUL-3), paleontological resources (Impact GEO-4), construction noise (Impact NOI-2), and construction vibration (Impact NOI-3).

City/SqCWD/CWD Intertie. The existing interties between the City's water system and the SqCWD's water system have capacity for 1.5 mgd during normal operations (City of Santa Cruz 2015). However, additional pipeline replacements and an upgrade to SqCWD's McGregor Drive pump station would likely be needed to more efficiently move water through its service area (see Figure 3-4f in Chapter 3, Project Description). Additionally, two new pump stations on the interties between SqCWD and CWD, on Huntington Drive and on Soquel Drive near Freedom Boulevard, would be required to allow SqCWD to move water to CWD (see Figure 3-4g in Chapter 3, Project Description). Currently, CWD can move water to SqCWD, but SqCWD cannot move water to CWD due to the hydraulics in the water distribution systems for both districts. This EIR evaluates the impacts of construction and operation of new facilities that may be needed for the City/SqCWD/CWD intertie throughout Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, and identifies potentially significant impacts that can be reduced to a less-than-significant level with mitigation related to: special-status wildlife and nesting birds (Impact BIO-1B), special-status plants (Impact BIO-1C), sensitive habitat (Impact BIO-2), historic resources (Impact CUL-1), archaeological resources (Impact CUL-2), tribal cultural resources (Impact CUL-3), paleontological resources (Impact GEO-4), release of hazardous materials from existing contaminated soil or groundwater (Impact HAZ-2), alteration to drainage patterns (Impact HYD-3), construction noise (Impact NOI-2), and construction vibration (Impact NOI-3).

Felton Diversion Improvements. Proposed fish passage improvements at the Felton Diversion would be designed to support use of City water rights while improving passage for coho salmon 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. These improvements would be constructed on the west side of the Felton Diversion entirely within the existing concrete diversion facility structure (see Figure 3-4h in Chapter 3, Project Description). These improvements would not require any construction activities or disturbance in the river bed. This EIR evaluates the impacts of fish passage improvements at the Felton Diversion throughout Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, and identifies potentially significant impacts that can be reduced to a less-than-significant level with mitigation related to: nesting birds (Impact BIO-1B), archaeological resources (Impact CUL-2), tribal cultural resources (Impact CUL-3), and construction noise (Impact NOI-2).

Tait Diversion and Coast Pump Station Improvements. Improvements at the Tait Diversion and Coast Pump Station facility would provide for future reliability of the water supply and to allow 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 (see Figure 3-4i in Chapter 3, Project Description). Specifically, the capacity of the Tait intake and pump station would be designed to accommodate up to 28 cfs[6] of surface water flows. Improvements at the Tait Diversion could include, but would not be limited to, (1) a new or modified intake design, (2) upstream and/or downstream hydraulic modifications, (3) improvements to the check dam, and (4) any required fish passage upgrades. Upgrades would be implemented to meet current state and federal fisheries protection criteria. Improvements could include, but would not be limited to, one or more of the following: dam notching incorporating a spillway crest gate and new upstream river intake with flat plate intake screen; conventional vertical slot fish ladder and new upstream river intake housing a gallery of retrievable cylindrical fish screens; incorporation of a Coanda intake screen within the dam and conventional Denil-style fish ladder at the right abutment; and/or new upstream river intake with horizontal plate screen and series of low-head stone weirs (natural fishway) downstream of the diversion dam.

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.

The Tait Diversion improvements would likely require construction activities and disturbance in the river bed. This EIR evaluates the impacts of fish passage improvements at the Tait Diversion and improvements to the Coast Pump Station throughout Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, and identifies potentially significant impacts that can be reduced to a less-than-significant level with mitigation related to: special status wildlife and nesting birds (Impact BIO-1B), special-status plants (Impact BIO-1C), sensitive habitat (Impact BIO-2), jurisdictional aquatic resources (Impact BIO-3), archaeological resources (Impact CUL-2), tribal cultural resources (Impact CUL-3), paleontological resources (Impact GEO-4), and construction and operational noise (Impact NOI-1 and Impact NOI-2).

Mitigation Measures

As described above, implementation of the mitigation measures identified in other technical sections of Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, would reduce potentially significant impacts of the Proposed Project related to utilities identified in Impact UTL-1, to a less-than-significant level for most project and programmatic infrastructure components. However, as indicated in Impact UTL-1, the new ASR facilities and the Beltz 9 ASR facility would have significant and unavoidable temporary construction noise impacts due to well drilling operations.

[6] Intake and pump station capacity of 28 cfs would provide for the proposed diversion of water at the Tait Diversion under both the Tait Licenses and Felton Permits.

Impact UTL-2: Water Supplies (Significance Standard B). 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)***

The Proposed Project includes three primary components: water rights modifications, water supply augmentation components (ASR and water transfers), and surface water diversion improvements. As discussed in Impact UTL-1, the Proposed Project would result in some improvements to existing facilities and some new facilities. Upon completion, it is estimated that approximately three new City staff would be added for maintenance, which would result in a minor increase in water demand that could be served by existing supplies. However, the Proposed Project would not result in new residential, commercial, office or other type of development that would result in a demand for water service.

The water rights modifications of the Proposed Project would allow use and transfer of City water, when available, for ASR or water transfers with other water districts. 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. Incorporating the Agreed Flows into all City water rights is necessary to benefit local fisheries, specifically for coho salmon 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 the existing rights, permits, and licenses to expand the authorized place of use (POU) and provide for other modifications related to the method of diversion, points of diversion and re-diversion, underground storage and purpose of use, and extension of time to put water to full beneficial use, which would allow the City to better utilize existing diversions. This in turn would enable implementation of water supply augmentation improvements, which 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) to deliver a safe, adequate, reliable and environmentally sustainable water supply, which is one of the primary objectives of the Proposed Project. The Proposed Project also would facilitate opportunities within the City and regionally for conjunctive use[7] of the City's surface water rights in combination with groundwater by addressing significant barriers to implementing conjunctive use due to the place of use associated with the City's water-right permits and licenses. This would, 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.

An increase in available water supplies within the areas served by the City over existing conditions would occur as a result of the Proposed Project (see Table 3-9 in Chapter 3, Project Description) that would meet projected supply deficits during times of identified water supply shortfalls. While existing City water supplies would be used for the water augmentation component (ASR and water transfers) as a result of the Proposed Project, this would occur at times of water availability and would also result in underground storage of water for future extraction during dry periods. With the flexibility provided by the Proposed Project water rights modifications and in combination with conjunctive management and water augmentation options, the Proposed Project would eliminate potential water shortfalls during dry and multiple-dry years to meet the projected demand in the areas served by the City. The hydrological and water supply modeling conducted for the Proposed Project includes ASR facilities and water transfers. The results show that water supplies would be adequate to meet the estimated projected demand of 3,200 mgy for all customers in the City's water service area, as described in Chapter 3, Project Description. It is also noted that the current water demand projection for UCSC for the year 2040 is approximately 20 mgy less than the 308 mgy forecast for UCSC in the City's

[7] 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.

2015 UWMP based on the water demand projection for the currently proposed 2021 LRDP (UCSC 2021). Therefore, the Proposed Project, including all project and programmatic components, provides adequate water supplies to serve direct demand from new City staff associated with the Proposed Project and projected demand in the areas served by the City during currently constrained dry periods. Therefore, the Proposed Project's impact related to water supply would be beneficial.

Public comments during the Scoping period (see Chapter 2, Introduction, and Appendix A) expressed concern that the Proposed Project would result in adverse long-term impacts on water consumption related to diversion from the San Lorenzo Valley and transfers to the SqCWD and other POUs. While the proposed water rights modifications do change place of use, there is no proposed change in the amount of water that the City can divert. Primarily, the Proposed Project would allow for direct transfer to the City's GHWTP and future distribution for ASR and/or transfers to other agencies, that could include SLVWD and SVWD in addition to SqCWD. SLVWD has filed a protest with the State Water Resources Control Board concerning the City's water rights petitions. SLVWD's protest expresses concerns about: (1) SLVWD's access to water from the City's Loch Lomond 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 (see Appendix B, Water Rights Petitions). The City intends to comply with its contract with SLVWD, which the two agencies understand to give SLVWD access to 313 acre-feet per year of water from Loch Lomond Reservoir. That allotment is assumed in the City's hydrologic, water supply and fisheries modeling for the Proposed Project and this EIR. Under water-right permit no. 20123, SLVWD's right to divert water from tributaries to the San Lorenzo River upstream of Felton is tied to flows at the Big Trees gage below Felton. Specifically, term 13 of that permit states that SLVWD "may divert water under this permit only when flow in the San Lorenzo River below the Felton Diversion Weir exceeds the following amounts: a. September – 10 cubic feet per second; b. October – 25 cubic feet per second; c. November 1 through May 31 – 20 cubic feet per second." The City proposes increased streamflow requirements for itself at the Big Trees gage, which actually should cause the flows stated in permit no. 20123's term 13 to be met more often. The Proposed Project therefore will not adversely affect SLVWD as it will not limit its ability to divert above Felton under its permit no. 20123. Therefore, the Proposed Project would not result in adverse changes in water supply to SLVWD or SVWD.

Mitigation Measures

As described above, the Proposed Project would not result in significant impacts related to water supply, and therefore, no mitigation measures are required.

Impact UTL-3: Wastewater Treatment Capacity (Significance Standard C). Operation of the Proposed Project would have adequate wastewater treatment capacity to serve project demand. ***(Less than Significant)***

The Proposed Project would result in some improvements to existing facilities. Upon completion, it is estimated that approximately three new employees could be added for maintenance, which would result in minor increased wastewater flows. With a remaining capacity of 4.0 mgd, the City's WWTF has adequate capacity to serve this minor increase in flows.

The ASR element of the water supply augmentation component would include backflushing of injection and extraction facilities and would result in the generation of sludge that would be discharged to a nearby County of Santa Cruz sanitary sewer line. Sewer discharge permits from the SCCSD would be required to permit discharge from each new ASR facility and Beltz ASR would operate under existing sewer discharge permits from SCCSD. Since backflushing of facilities is an intermittent activity, it would not substantially affect average wastewater flows, and there is existing adequate excess capacity available to the SCCSD at the City's WWTF, and therefore, the Proposed Project's impact would be less than significant.

Mitigation Measures

As described above, the Proposed Project would not result in significant impacts related to wastewater treatment capacity, and therefore, no mitigation measures are required.

Impact UTL-4: Solid Waste Generation (Significance Standard D). 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)***

Construction activities would generate solid waste, including vegetation, asphalt, concrete, and other nonhazardous materials, that could be disposed of in a landfill. Excavation during construction of project and programmatic infrastructure components, including ASR facilities, pipeline trenches, pump stations, and diversions, would generate spoils, some of which would be expected to be reused on the component sites as fill material. In general, project and programmatic infrastructure components would not be large in size and would not result in the generation of a substantial amount of waste materials requiring off-site disposal. Earthen spoils that could not be accommodated on the component sites (e.g., for sites that would use new/engineered backfill material rather than native material) could either be used as fill for other construction projects in the area or could be hauled to a landfill to be used as intermediate cover.[8] It is expected that the disposal of construction materials would generally be limited, and the majority of construction waste would be recycled and reused due to the cost of disposing of such materials.

As described above, any off-site disposal would be at the City's RRF, which has an expected closure date of January 2058, or the County's Buena Vista Landfill, which has an expected closure date of July 2031. As described above in Section 4.13.1.4, Solid Waste, the City's RRF and the Buena Vista Landfill have remaining capacities of 46% and 29%, respectively, or a total of 7,013,018 cy of solid waste. Daily throughput in 2019 averaged 26% and 33% of the facilities' permitted daily capacities, respectively. Given this, the City's RRF and County's Buena Vista Landfill would have adequate capacity to accommodate solid waste generated by the Proposed Project and the impact would be less than significant.

Mitigation Measures

As described above, the Proposed Project would not result in significant impacts related to solid waste generation, and therefore, no mitigation measures are required.

Impact UTL-5: Compliance with Solid Waste Regulations (Significance Standard E). 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)***

The Proposed Project would be required to comply with all applicable regulations associated with the reduction of solid waste entering landfills, including the California Integrated Waste Management Act, potentially new more aggressive statewide resource recovery goals (i.e., AB 341 policy goal of 75% reduction), as well as the City's and County's plans, policies, and programs related to recycling/diversion and disposal of solid waste. As previously noted, during construction, all wastes would be expected to be recycled to the maximum extent possible, in accordance with applicable regulations. All nonhazardous solid waste generated from the Proposed Project once operational would be recycled, with a goal of 75%, in compliance with the Integrated Waste Management Act. Unsalvageable materials generated from the Proposed Project would be disposed of at authorized sites in accordance with all applicable federal,

[8] As defined in 27 CCR Section 20700, intermediate cover is compacted earthen material of at least 12 inches placed on the surface of a fill where no additional solid waste will be deposited within 180 days. Intermediate cover reduces odors, keeps litter from scattering, and helps deter scavengers.

state, and local statutes and regulations. Thus, the Proposed Project would comply with state and local statutes and regulations related to solid waste during construction and operation and the impact would be less than significant.

Mitigation Measures

As described above, the Proposed Project would not result in significant impacts related to compliance with solid waste regulations, and therefore, no mitigation measures are required.

Impact UTL-6: Result in Wasteful, Inefficient or Unnecessary Consumption of Energy Resources (Significance Standard F). Construction and operation of the Proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. ***(Less than Significant)***

Construction

Electricity

Temporary electric power for as-necessary lighting and electronic equipment would be provided by 3CE. The amount of electricity used during construction would be minimal because typical demand would be generated by electrically powered hand tools. The electricity used for construction activities would be temporary and minimal; therefore, Proposed Project construction would not result in wasteful, inefficient, or unnecessary consumption of electricity.

Natural Gas

Natural gas is not anticipated to be required during construction of the Proposed Project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below. Any minor amounts of natural gas that may be consumed as a result of Proposed Project construction would be temporary and negligible and would not have an adverse effect; therefore, Proposed Project construction would not result in wasteful, inefficient, or unnecessary consumption of natural gas.

Petroleum

Heavy-duty equipment associated with construction would rely on diesel fuel, as would vendor trucks involved in delivery of materials to the project site and haul trucks exporting materials off site. Construction workers would travel to and from the project sites throughout the duration of construction. It is assumed in this analysis that construction workers would travel in gasoline-powered light-duty vehicles. Appendix E lists the assumed equipment usage and vehicle trips for construction of each project and programmatic infrastructure component.

As described above in Section 4.13.3.2, Analytical Methods, fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per MT CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per MT CO_2 per gallon (The Climate Registry 2019).

The estimated diesel fuel usage from construction equipment, haul trucks, and vendor trucks, as well as estimated gasoline fuel usage from worker vehicles is shown in Table 4.13-3.

Table 4.13-3. Proposed Project Construction Petroleum Demand

Project or Programmatic Component	Off-Road Equipment (diesel)	Haul Trucks (diesel)	Vendor Trucks (diesel)	Worker Vehicles (gasoline)
	gallons			
New ASR Facility Monitoring Wells[2]	38,333.95	58.30	491.40	564.33
New ASR Facility Supply Wells[2]	26,094.81	145.74	304.64	546.83
New ASR Facility Treatment Facilities[2]	64,021.59	202.59	2,052.34	1,980.68
Beltz 8 ASR Facility	5,225.05	22.57	326.66	350.90
Beltz 9 ASR Facility	4,089.47	14.96	136.88	129.66
Beltz 10 ASR Facility	1,988.05	7.35	98.86	82.76
Beltz 12 ASR Facility	2,917.47	22.57	150.88	148.34
City/SVWD Intertie - Pipeline	11,157.02	564.98	837.27	429.62
City/SVWD Intertie - New Pump Station	3,151.48	0.00	72.59	83.99
City/SqCWD/CWD[1] Intertie - Pipelines	22,923.53	1,188.29	1,780.12	1,063.30
City/SqCWD/CWD[1] Intertie - New Pump Stations	6,306.15	0.00	150.89	202.96
City/SqCWD/CWD[1] Intertie - Pump Station Upgrade	2,179.77	15.04	50.29	74.17
Felton Diversion Improvements	1,956.11	28.60	48.39	90.44
Coast Pump Station Upgrade	2,319.55	14.23	48.20	68.78
Tait Diversion Improvements	21,744.42	64.05	731.45	379.52
Total	**214,408.42**	**2,349.25**	**7,280.86**	**6,196.29**

Notes: ASR = aquifer storage and recovery; CWD = Central Water District; SqCWD = Soquel Creek Water District; SVWD = Scotts Valley Water District. See Appendix E for details.

1 The CalEEMod modeling included in Appendix E for the City/SqCWD/CWD intertie connections and new pump stations accounted for one representative intertie connection and one new pump station. However, since two intertie connections and two new pump stations are anticipated for the City/SqCWD/CWD intertie, the petroleum demand for these components were multiplied by two for inclusion in this table.

2 The CalEEMod modeling included in Appendix E accounted for one representative monitoring well, one supply well, and one treatment facility. However, since up to four new ASR facilities are anticipated, the petroleum demand for the new ASR facilities were multiplied by four for inclusion in this table.

As shown in Table 4.13-3, the Proposed Project is estimated to consume approximately 230,235 gallons of petroleum during the construction phase. By comparison, approximately 29 billion gallons of petroleum are consumed in California annually (EIA 2020d). Thus, the Proposed Project's petroleum consumption would constitute less than 0.001% of the statewide annual petroleum consumption. Overall, because the Proposed Project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy-efficient than at comparable construction sites in the region or state, the Proposed Project construction would not result in wasteful, inefficient, or unnecessary consumption of petroleum.

Operations

Electricity

As provided by the City, the Proposed Project is anticipated to require approximately 1.3 million kWh per year more than the 10-year average electricity demand (2009-2018) for facility operations. For context, PG&E, which delivers

electricity to 3CE, reported an annual electrical consumption for Santa Cruz County of approximately 1,212 million kWh in 2018, with 667 million kWh for non-residential use and 545 million kWh for residential use (CEC 2020a). The additional electricity demand for the Proposed Project would represent a minimal increase in usage throughout the County and would not be unusual or wasteful as compared to overall local and regional demand for energy resources. Therefore, Proposed Project operations would not result in wasteful, inefficient, or unnecessary consumption of electricity.

Natural Gas.

Natural gas is not anticipated to be required during operation of the Proposed Project. Any minor amounts of natural gas that may be consumed as a result of Proposed Project operations would be negligible; therefore, Proposed Project operations would not result in wasteful, inefficient, or unnecessary consumption of natural gas.

Petroleum

The estimated gasoline fuel usage associated with new employees for Proposed Project operations would be approximately 1,520 gallons per year. This fuel usage would represent a minimal increase in gasoline demand; therefore, Proposed Project operations would not result in wasteful, inefficient, or unnecessary consumption of petroleum.

Overall, based on all of the above considerations, the Proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation and would have less-than-significant energy-related impacts.

Mitigation Measures

As described above, the Proposed Project would not result in significant impacts related to energy consumption, and therefore, no mitigation measures are required.

Impact UTL-7: Conflict with an Applicable Renewable Energy or Energy Efficiency Plan (Significance Standard G). 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)***

Part 6 of Title 24 of the California Code of Regulations establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically (every 3 years) to incorporate and consider new energy efficiency technologies and methodologies. Title 24 also includes Part 11, CALGreen. CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction of commercial and state-owned buildings. Components of the Proposed Project would meet any applicable Title 24 and CALGreen standards to reduce energy demand and increase energy efficiency.

Additionally, as discussed in Section 4.6, Greenhouse Gas Emissions, the Proposed Project would not conflict with the various state and local plans that mandate reduced energy use. Overall, the Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts during construction and operation of the Proposed Project would be less than significant.

Mitigation Measures

As described above, the Proposed Project would not result in significant impacts related to conflicts with applicable renewable energy or energy efficiency plans, and therefore, no mitigation measures are required.

4.13.3.4 Cumulative Impacts Analysis

This section provides an evaluation of cumulative utilities and energy impacts associated with the Proposed Project and past, present, and reasonably foreseeable future projects, as identified in Table 4.0-2 in Section 4.0, Introduction to Analyses, and as relevant to this topic.

Impact UTL-8: Cumulative Water and Wastewater Impacts (Significance Standards B and C). 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)***

With regard to water and wastewater utilities, the geographic area considered in the cumulative analysis includes the geographic vicinity of the project and programmatic infrastructure component sites (Significance Standard A) and the areas served by the City (Significance Standards B and C). Standard A addresses whether new or expanded infrastructure would result in a significant impact, and the impacts of the project and programmatic infrastructure components are addressed in the cumulative sections for each topic in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, of this EIR.

Standards B and C address whether adequate water supplies and wastewater treatment capacity are available to serve cumulative development. As explained in Impact UTL-2, the Proposed Project would result in greater flexibility of water system operations to meet identified water supply shortfalls during dry periods through the implementation of water rights modifications that would allow for ASR and water transfers with other water districts. The cumulative development projects[9] are already factored into the growth forecasts, water demand forecasts and estimates of supply shortfalls that the Proposed Project is intended to fill during currently constrained dry periods. Therefore, cumulative development would not result in a significant cumulative impact related to water supply availability (Significance Standard B). Similarly, adequate wastewater treatment capacity exists to serve cumulative development, and thus, cumulative development would not result in a significant cumulative impact related to wastewater treatment capacity. Therefore, cumulative impacts related to water and wastewater would be less than significant.

Impact UTL-9: Cumulative Landfill Impacts (Significance Standard D). 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)***

The geographic area considered for the analysis of cumulative impacts related to solid waste generation and landfill capacity is Santa Cruz County. Construction and operation of past, present, and reasonably foreseeable future projects in the region would generate solid waste that would require disposal in area landfills. However, given regulatory requirements related to reuse and recycling, as well as remaining landfill capacities, area landfills would be expected to have adequate capacity to serve cumulative development, and cumulative impacts on landfill capacity would be less than significant.

[9] Cumulative development includes the UCSC 2021 LRDP and related growth. The current water demand projection for UCSC for the year 2040 is approximately 20 mgy less than the 308 mgy forecast for UCSC in the City's 2015 UWMP based on the water demand projection for the UCSC 2021 LRDP (UCSC 2021).

Impact UTL-10: Cumulative Energy Impacts (Significance Standards F and G). 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)***

The geographic area considered for the analysis of cumulative energy impacts is Santa Cruz County. Potential cumulative impacts on energy would result if the Proposed Project, in combination with past, present, and future projects, would result in the wasteful or inefficient use of energy. Significant energy impacts could result from development that would not incorporate sufficient building energy efficiency features, achieve building energy efficiency standards, or if projects result in the unnecessary use of energy during construction or operation.

As discussed in Impact UTL-6 and Impact UTL-7, the Proposed Project would not result in wasteful, inefficient, or unnecessary use of energy during construction or operations, nor would it conflict with an applicable plan. The majority of the cumulative projects listed in Table 4.0-2 consist of capital improvement projects to the City's water supply infrastructure; other infrastructure projects within Santa Cruz County; and residential, commercial, and mixed-use projects within Santa Cruz County. Each project would have a construction period during which electricity, natural gas, and petroleum would be used; however, it is expected that such usage would be temporary and would not constitute a wasteful, inefficient, or unnecessary consumption of energy. Additionally, while some of these projects could result in increases in energy consumption during their operation, the increased demand is also anticipated to be minimal relative to statewide energy usage and, in combination with the Proposed Project, would not contribute to any potentially significant cumulative energy impacts. Furthermore, any commercial and residential cumulative projects that may take place in the County that include long-term energy demand would be subject to CALGreen, which provides energy efficiency standards. In addition, cumulative projects would be required to meet or exceed the Title 24 building standards, as applicable, further reducing the inefficient use of energy. Future development would also be required to meet even more stringent requirements, including the objectives set forth in the December 2017 CARB Scoping Plan and Part 6 of Title 24 of the California Code of Regulations, which seek to make all newly constructed residential homes produce a sustainable amount of renewable energy through the use of on-site photovoltaic solar systems. Furthermore, various federal and state regulations, including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program, would serve to reduce the transportation fuel demand of cumulative projects.

For the reasons above, the Proposed Project, together with the cumulative projects, would not result in wasteful, inefficient, or unnecessary use of energy or conflicts with applicable plans. Therefore, the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to energy and the impact would be less than significant.

4.13.4 References

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