4.6 WATER SUPPLY – SERVICE

This section analyzes impacts of the project's potable water demand on municipal water supplies. This section draws from the City of Santa Cruz *2015 Urban Water Management Plan* (UWMP), which was adopted in August 2016 in accordance with state law. The UWMP, which must be updated every five years, evaluates water supply and demand within the City's water service area over the next 20 years. The 2015 UWMP is incorporated by reference in accordance with section 15150 of the State CEQA Guidelines, and relevant discussions are summarized in section 4.6.1. The 2015 UWMP Plan is available for review at the City of Santa Cruz Water Department (212 Locust Street, Suite A, Santa Cruz, California) during business hours: Monday through Thursday, 8 AM to 12 PM and 1 PM to 5 PM. The plan also is available for review on the City's website at: http://www.cityofsantacruz.com/departments/water/2015-urban-water-mgmt-plan.

Public and agency comments related to water supply / water service were received during the public scoping period in response to the Notice of Preparation (NOP). Issues raised in these comments include:

- ❒ Impacts due to project location within a groundwater recharge area.

To the extent that issues identified in public comments involve potentially significant effects on the environment according to the California Environmental Quality Act (CEQA) and/or are raised by responsible agencies, they are identified and addressed within this EIR. Public comments received during the public scoping period are included in Appendix B.

4.6.1 Environmental Setting

Regulatory Setting

State Regulations

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 State 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 meet the above size requirements that would trigger the preparation of a WSA.

In 2014, California enacted the "Sustainable Groundwater Management Act" to bring the state's groundwater basins into a more sustainable regime of pumping and recharge. The legislation provides for the sustainable management of groundwater through the formation of local groundwater sustainability agencies (GSAs) and the development and implementation of groundwater sustainability plans (GSPs), and requires GSAs and GSPs for all groundwater basins identified by the California Department of Water Resources (DWR) as high or medium priority. The law also authorizes the intervention of the State Water Resources Control Board in the event that no GSA, or equivalent local authority, is formed for a high- or medium-priority basin, or if an adequate GSP is not submitted for those basins. Additionally, it establishes criteria for the sustainable management of groundwater and authorizes DWR to establish best management practices for groundwater (California Department of Water Resources, December 2016).

The City of Santa Cruz is part of the Santa Cruz Mid-County Groundwater Basin formed pursuant to this legislation. The portion of the City's water service area not represented by the Agency is a remaining portion of the previously designated West Santa Cruz Terrace Basin and this basin is not currently managed by a GSA and may undergo further modification.

Local Regulations

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 16.08 Sewer System: Graywater Systems (section 16.08.065)
- 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 of Santa Cruz 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 City's water service area. 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.

Section 24.14.090 of the City's Municipal Code, Groundwater Recharge areas, states that development within groundwater recharge areas identified by Map EQ-2 in the Environmental Quality Element of the General Plan shall be planned to minimize adverse environmental impacts. This section requires that structures and other impervious surfaces constructed in the R-1, R-L, and R-M zoning districts shall not cover more than fifty-five percent of the site if located within a groundwater recharge area.

Study Area

The study area consists of the water service area in which the project site is located. The project site is located within the service area of the City of Santa Cruz Water Department.

Project Site

The project site is located approximately 500 feet east of the San Lorenzo River and is located within its watershed. The site is not located within a groundwater recharge area mapped by the City of Santa Cruz. The City's existing *General Plan 2030* does not have a map or designation for groundwater recharge areas, however, the site is not located within a mapped "potential groundwater recharge" area identified in the former General Plan and existing Local Coastal Plan (Map EQ-2). The eastern portion of the site is identified as being partially within a groundwater recharge area in the Santa Cruz County Planning Department GIS database based on the underlying Santa Margarita geologic formation.

City Water Service Area

The City of Santa Cruz Water Department serves approximately 24,535 connections in an approximate 20-square mile area. The service area includes the entire City of Santa Cruz, adjoining unincorporated areas of Santa Cruz County, a small part of the City of Capitola, and coastal agricultural lands north of the city. The current population residing in the Santa Cruz water service area is estimated to be 95,251 people. Approximately two thirds of 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, August 2016).

City Water Service System

Water Supply Sources

The City's water system is comprised of four main sources of supply: San Lorenzo River diversions (including the Tait wells); North Coast spring and creeks; Loch Lomond Reservoir; and the Beltz wells. Over the past decade, the North Coast sources represented 26 percent of the total water supply, the San Lorenzo River represented 55 percent, Newell Creek (Loch Lomond Reservoir) represented 14 percent, and Beltz wells contributed the remaining 5 percent (City of Santa Cruz, August 2016).

The San Lorenzo River is the City's largest source of water supply. The main surface water diversion, known as the San Lorenzo River Diversion, is located adjacent to the coast pump station on Highway 9 near the City limits just north of Highway 1. Use of this source dates back to the 1870s and was consolidated under public ownership in 1917. The Tait Street Diversion is supplemented by shallow, auxiliary wells located directly across the river, the Tait wells. The other diversion on the San Lorenzo River is Felton Diversion, which is an inflatable dam and intake structure built in 1974, located about 6 miles upstream from the Tait Street Diversion. When the diversion is being operated, water is pumped from this diversion through the Felton Booster Station to Loch Lomond Reservoir. While the City is the largest user of water from the San Lorenzo River basin, two other water districts, several private water companies, and numerous individual property owners share the San Lorenzo River watershed as their primary source for drinking water supply (City of Santa Cruz, August 2016).

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. These sources are: Liddell Spring, Laguna Creek, Reggiardo Creek, and Majors Creek. The use of these sources by the City dates back as far as 1890 (City of Santa Cruz, August 2016).

Loch Lomond Reservoir is located near the town of Ben Lomond in the Santa Cruz Mountains. The reservoir was constructed in the 1960s and has a maximum capacity of 2,810 million gallons (mg). In addition to providing surface water storage, the reservoir and surrounding watershed are used for public recreation purposes, including fishing, boating, hiking, and picnicking (swimming and wading are prohibited). In addition to the City, the San Lorenzo Valley Water District is entitled by contract to receive a 314.4 acre-feet per year (AFY) of the water stored in Loch Lomond Reservoir (City of Santa Cruz, August 2016).

The Beltz well system consists of four production wells and two water treatment plants located in the eastern portion of the City water service area. The facilities were originally acquired by the City from the Beltz Water Company in 1964. The majority of the groundwater production of the City's Beltz well field is in a geographical area identified as the Santa Cruz Mid-county Groundwater Basin. Groundwater from this basin is used by the City, the Soquel Creek and Central Water Districts, several small water systems, and numerous private rural water wells. Even though groundwater constitutes only about five percent 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 periods of drought (City of Santa Cruz, August 2016).

Water System Production and Operations

The Water Department follows a variety of policies, procedures and legal restrictions in operating the City's 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. A summary of water rights held by the City of Santa Cruz is provided on page 6-10 of the 2015 UWMP that is incorporated by reference. In general, the system is managed to use available flowing sources to meet daily demands as much as possible. Groundwater and stored water from Loch Lomond are used primarily in the summer and fall months when flows in the coast and river sources decline and additional supply is needed to meet higher daily water demands. In accordance with requirements of its water rights, the City releases a minimum flow of 1.0 cfs from storage in Loch Lomond Reservoir to support fishery resources beneath the dam (City of Santa Cruz, August 2016).

Water production has fluctuated over the past ten years; annual production has ranged 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, August 2016). The 2015 water production rate represents production volumes experienced under severe drought conditions during a second year of rationing with emergency water shortage regulations and state-mandated local restrictions in effect.

The 2015 UWMP estimates a 20-year water supply at about 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.

Water is treated at the City's Graham Hill Water Treatment Plant (GHWTP), except for groundwater, which is treated as part of the Beltz well system. The GHWTP complies with all drinking water standards set by the US Environmental Protection Agency and the State Water Resources Control Board Division of Drinking Water (DDW). GHWTP is a conventional surface water treatment plant that was commissioned in 1960 with a capacity of 12 million gallons per day (MGD) plant and has undergone an expansion and numerous plant improvements over the last 55 years. Currently the plant can process up to 16 MGD and a year-round average production of 10 MGD. Continued investment in the plant through replacement and upgrade projects will enhance the water quality treatment process and respond to changes in regulation to maintain an adequate, safe, and reliable supply of water available to the service area. Groundwater treatment occurs within the Beltz well system, and the current operational capacity for production in the Beltz system is approximately 1 MGD when the City draws groundwater (City of Santa Cruz, August 2016).

Water Demand

Water demand in the City's water service area has fluctuated over the past 10 years. The 2015 UWMP indicates that water consumption in the service area ranged between nearly 4,000 MGY in 2001 to approximately 2,500 MGY in 2015 (City of Santa Cruz, August 2016). The 2015 water demand was during the second year of a severe drought with water use restrictions and rationing in place.

The adopted 2015 UWMP forecasts a 20-year water demand forecast at approximately 3,200 MGY. This is slightly reduced from the estimated 3,500 MGY forecast in the 2010 UWMP due to continuing conservation efforts (City of Santa Cruz, August 2016). Until recently, the general trend in system demand was one in which water use rose roughly in parallel with account and population growth over time, except during two major drought periods in the late 1970s and the early 1990s. Around 2000, this pattern changed and system demand began a long period of decline, accelerated by pricing changes, drought, economic downturn, and other factors (Ibid.). The UWMP predicts a decrease in water use of approximately 100 MGY over the next 20 years despite regional population growth forecasts.

Water Supply Reliability and Constraints

There are several constraints and challenges that affect the long-term reliability of the City's water supplies. The primary constraint relates to potential water shortfalls during multi-year droughts. In addition, the City also faces other challenges that potentially could affect water supplies, including: potential flow releases associated with a Habitat Conservation Plan (HCP) currently under development, the outcome of water rights petitions, groundwater availability and climate change issues.

Supply Variability and Availability During Droughts

The City's primary water supply reliability issue relates to potential shortfalls during dry and critically dry years. The City Council-appointed Water Supply Advisory Committee[1] issued the following problem statement, which also is included in the 2015 UWMP, that summarizes the key water supply issues within the City's water service area:

> *Santa Cruz's water supply reliability issue is the result of having only a marginally adequate amount of storage to serve demand during dry and critically dry years when the system's reservoir doesn't fill completely. Both expected requirements for fish flow releases and anticipated impacts of climate change will turn a marginally adequate situation into a seriously inadequate one in the coming years. Santa Cruz's lack of storage makes it particularly vulnerable to multi-year droughts. The*

[1] See discussion in the following subsection regarding WSAC.

> *key management strategy currently available for dealing with this vulnerability is to very conservatively manage available storage. This strategy typically results in regular calls for annual curtailments of demand that may lead to modest, significant, or even critical requirements for reduction. In addition, the Santa Cruz supply lacks diversity, thereby further increasing the system's vulnerability to drought conditions and other risks. The projected worst-year gap between peak-season available supply and demand during an extended drought is about 1.2 billion gallons. While aggressive implementation of conservation programs will help reduce this gap, conservation alone cannot close this gap. The Committee's goal is to establish a reasonable level of reliability for Santa Cruz water customers by substantially decreasing this worst-year gap while also reducing the frequency of shortages in less extreme years.*

As described above, 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 water system is capable of meeting demands during normal and wet years, but is vulnerable to shortage in extended dry periods or critically dry periods. The City predicts that future water demand will be met for 90 percent of all normal water years and that existing and planned sources of water available to the City over the next twenty years will meet the predicted total annual water demand of about 3,200 to 3,300 MGY (City of Santa Cruz, August 2016).

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 has not previously seen shortages in normal water years, but expected reductions in water production for ecosystem protection are likely to result in small shortages (1-3 percent) prior to 2020. However, operationally the City predicts sufficient water supplies in normal years to meet demand even though a slight deficit seems to exist in the modelled projections (City of Santa Cruz, August 2016).

In an extreme multi-year drought, available water supplies are estimated to be 25 to 50 percent less than what is available during normal years depending on the severity and duration of the dry years. In multi-year or critical drought conditions, the combination of very low surface flows in the coast and river sources and depleted storage in Loch Lomond Reservoir reduces available supply to a level which cannot support average dry season demands. Compounding the situation is the need to retain a certain amount of water in the reservoir to provide supply if drought conditions continue into the following year. The existing system is not able to provide a reliable supply during multi-year droughts or prolonged periods of drier than normal hydrologic conditions (City of Santa Cruz, August 2016).

Ecosystem Protection

The amount of North Coast water supply sources may change in the future depending on the outcome of a Section 10 Incidental Take Permit application and HCP under development. Since 2002, the City of Santa Cruz has been working toward the development of an HCP that covers

effects on anadromous fish incidental to operation and maintenance of the water system, which may result in "take" of threatened and/or endangered species. An HCP is an operational avoidance and minimization and mitigation plan prepared under Section 10 of the Federal Endangered Species Act (FESA) and Section 2081 of the California Fish and Game Code for incidental take of federally or state-listed threatened and endangered species. The City initiated the HCP process because the streams from which the City diverts water currently support steelhead trout (*Oncorhynchus mykiss*), a federally-listed "threatened" species, and the San Lorenzo River and Laguna Creek support coho salmon *(Oncorhynchus kisutch*), a federally and state listed "endangered".

The City has been actively meeting with the federal and state agencies on HCP-related issues and has conducted a number of studies, but permitting has not yet been completed yet. These studies have evaluated what limiting factors may be affecting the threatened and endangered anadromous fish in these streams and measures that the City can take to avoid and minimize effects of its operations on these species. Because these studies indicate that habitat conditions in these streams could be improved with increased instream flows, the City began voluntarily diverting less flow in 2007 on an interim basis in connection with the pursuit of FESA and CESA take authorization as well Streambed Alteration Agreements for its diversion facilities. Although permit negotiations are ongoing, the City forecasts that ultimate compliance will result in less water being available from the City's surface water sources for supply in future years compared to the past. This, in turn, will place greater reliance on water stored in Loch Lomond Reservoir to meet the community's annual water needs and exacerbate the potential vulnerability to shortages described above (City of Santa Cruz, August 2016).

Water Rights Petitions

The City is addressing two water rights issues that may affect the City's water supply. In 2008, the City submitted petitions to the State Water Resources Control Board (SWRCB) to address a historical oversight in the language of the City's water rights documents for Newell Creek and the San Lorenzo River at Felton (Felton Diversion) and to request a time extension for the full development of the 3,000 acre-feet permit to divert water from the San Lorenzo River at Felton and to add the rights of direct diversion at Newell Creek and the Felton Diversion. The City's intent is to eliminate technical constraints for operations of its water supplies. Recently completed water supply planning work done by the Water Supply Advisory Committee (described in more detail below) identified water from the Felton Permits as being critical to meeting the City's projected future demand (City of Santa Cruz, August 2016).

Groundwater Availability and Management

The City has joined with the Soquel Creek and Central Water Districts, the County of Santa Cruz, and private well representatives to form the Santa Cruz Mid-County Groundwater Agency (MGA), the local GSA created pursuant to the requirements of the California Sustainable Groundwater Management Act. The MGA will oversee the preparation of a cooperative groundwater management plan for the now redefined Santa Cruz Mid-County Groundwater

Basin, which includes the former Soquel Valley Basin and portions of three adjacent basins – the West Santa Cruz Terrace Basin, the former Santa Cruz Purisima Formation Basin, and the original Pajaro Valley Basin. The Soquel Valley Basin was identified by the State as a groundwater basin subject to critical conditions of overdraft (California Department of Water Resources, December 2016). Over-pumping in the Soquel-Aptos Basin resulted in a groundwater overdraft condition and seawater intrusion along the coast. The portion of the Purisima aquifer from which the City pumps has been recognized locally as being threatened by potential over-pumping with an ongoing risk of seawater intrusion that could jeopardize the future production of the City's groundwater sources (City of Santa Cruz, August 2016).

Climate Change

As the City of Santa Cruz water supply consists of only local sources maintained and recharged by natural processes, the potential effects related to climate change could greatly impact the sources of supply. According to the 2015 UWMP, it is widely accepted that climate change may make the future hydrology drier than the historical record maintained in the region, and general forecasts describe deviation in the seasonal patterns of rainfall with longer and more severe droughts. Additionally, the annual average temperature in the region may increase leading to variability in the rate of evaporative processes that can greatly impact local sources and watersheds. Climate change impacts are likely to be a contributor to a less reliable supply and also a driver for strengthening demand management planning (City of Santa Cruz, August 2016).

Water Supply Planning and Water Shortage Contingency Plan

Given water supply reliability issues discussed in the previous section, the City of Santa Cruz has actively considered and pursued water supply and demand management projects over the past 20 years to supply options and to enhance the reliability of the system. In October 2013, the City Council directed City staff to develop a detailed engagement program for a community examination of water supply issues. City staff developed a framework for a Water Supply Advisory Committee (WSAC), and the Council approved the 14-member WSAC in March 2014. The purpose of the WSAC, as established by Council-approved WSAC charter on June 24, 2014, was to "explore, through an interactive, fact-based process, the City's water profile, including supply, demand and future threats, and analyze potential solutions to deliver a safe, adequate, reliable and environmentally sustainable water supply, and develop strategy recommendations for City Council consideration". The WSAC completed their work in October 2015, and the City Council accepted their Final Report in late 2015 that included the following recommendations for water augmentation strategies:

- ❒ Additional water conservation with a goal of achieving an additional 200 to 250 million gallons of demand reduction by the year 2035.
- ❒ Passive recharge of regional aquifers by working to develop agreements for delivering surface water as an in lieu supply to the Soquel Creek Water District and/or Scotts Valley Water District so they can "rest their wells", help aquifers

recover and store water that can become available to the City of Santa Cruz Water Department in drought years.

- ❒ Active recharge of regional aquifers by using existing and some potential new infrastructure in the regionally shared Purisima aquifer in the Soquel-Aptos basin and/or in the Santa Margarita/Lompico/Butano aquifers in the Scotts Valley area to store water that can be available for use by Santa Cruz in drought years.
- ❒ 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 Plan's goals of cost effectiveness, timeliness and yield. In the event advanced treated recycled water does not meet the needs, desalination would become the last element (City of Santa Cruz, August 2016).

Upon acceptance of the WSAC report by City Council, development began on the supply augmentation strategy work plan that further defines the components of the implementation plan and timeline included in the WSAC Final Report. The work plan is comprised of the following parts:

- ❒ Water Conservation or Demand Management (Strategy 1)
- ❒ In lieu water transfers with neighboring agencies (Strategy 1 Element 1)
- ❒ Aquifer Storage and Recover (Strategy 1 Element 2)
- ❒ Advanced Treated Recycled Water or Seawater Desalination (Strategy 2 Element 3)

The initial phase of the supply augmentation strategy involves enhancement of the existing conservation programs as well as evaluation of the feasibility alternative future supply projects focused on solving the 1.2 billion gallon annual (or 1,200 MGY) shortfall identified in the WSAC report under multiple year droughts. An updated Water Conservation Master Plan was completed in 2016 to define the next generation of water conservation activities. The draft plan includes 35 measures for implementation by 2021, many of which are already underway. The projected per capita water use in gallons per person per day (gpcd) is expected to decline to about 92 gallons per person per day, far below the City's 2020 target of 110 gpcd, and continuing to decline to a level of about 78 gpcd by 2035 (City of Santa Cruz, August 2016).

The City also is working with the Soquel Creek and Scotts Valley Water Districts (SqCWD, SVWD) on an in-lieu transfer project. In-lieu transfers include short-term and long-term projects that would deliver excess City water to SqCWD and/or the Scotts Valley Water District during winter that would reduce pumping from regional aquifers and assist with groundwater recharge and recovery. The short-term project utilizes existing infrastructure that connects the SqCWD and the City water system and uses surplus water from the City's North Coast sources. A pilot program is in place to collect information related to physical operations, water quality, response of groundwater levels, and the potential to develop a larger and/or long-term project. The long-term project may include higher volumes of water transfers including those from the San

Lorenzo River, which would require modifications to the City's water rights. An aquifer storage and recovery (ASR) study is also underway that is looking at regional options for groundwater injection, storage, and future extraction in order to actively recharge regional aquifers. A portion of the water delivered using in-lieu transfers or ASR facilities would be effectively banked in the aquifers to be extracted and returned to the City when needed in future dry years. The City's current work plan indicates that the feasibility of both in-lieu and ASR programs are projected to be understood by the end of 2020 (City of Santa Cruz, March 6, 2017).

Advanced treated recycled water or desalinated water would be developed as a supplemental or replacement supply in the event the groundwater storage strategies described above prove insufficient to meet the plan's goals of cost-effectiveness, timeliness and yield. If it is determined that recycled water cannot meet the City's shortfall needs, desalinated seawater would be used. A recycled water feasibility study is underway, and a desalination project feasibility update is expected to be initiated in May 2017. The City's current work plan indicates that both studies will be complete by the end of the year.

The City will determine which element or elements to pursue based on the outcome of the studies currently in progress.

Additionally, in 2009, the City of Santa Cruz completed a comprehensive update of its Water Shortage Contingency Plan. Since then, the City has had to declare a water shortage in five of the past seven years, including a Stage 3 Water Shortage Emergency in both 2014 and 2015. The City's Water Shortage Contingency Plan describes the conditions which constitute a water shortage and provides guidelines, actions, and procedures for managing water supply and demands during a declared water shortage. The primary focus of the plan is on measures that reduce customer demand for water, but it also covers actions that can be implemented to stretch or increase the water supply (City of Santa Cruz, August 2016).

4.6.2 Impacts and Mitigation Measures

Standards of Significance

In accordance with the California Environmental Quality Act (CEQA); State CEQA Guidelines (including Appendix G); City of Santa Cruz plans, policies, and/or guidelines; and agency and professional standards, a project impact would be considered significant if the project would:

6a Have insufficient water supplies available to serve the project from existing entitlements and resources, and/or require new or expanded entitlements to serve the project;

6b Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or

6c Substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

Analytical Method

Project water demand is estimated based on water demand rates developed as part of the City's 2015 Urban Water Management Plan update. The impact analysis is based on findings of the 2015 UWMP and consultation with City of Santa Cruz Water Department staff.

Impacts and Mitigation Measures

As described below, no impacts were found regarding existing or expanded facilities (6b) as explained below. The following analysis assesses impacts to the City of Santa Cruz water supplies as a result of water demand associated with development of the proposed project (6a) and potential impacts to groundwater (6c).

New or Expanded Facilities – No Impact. The City Water Department indicates that the proposed project will not result in the need to construct or expand its water treatment facility or other water infrastructure/facilities to accommodate future water demand resulting from the proposed project (6b) (Goddard, City of Santa Cruz Water Department, personal communication, March 2017). The project would require new domestic, irrigation and fire service connections from existing infrastructure to serve the project, all of which are available. Therefore the project will result in no impacts from the construction of new or expanded water facilities.

Impact Water-1: **Water Supply.** The proposed project will result in an increased demand for water supply in a system that, under existing conditions, has adequate supplies during average and normal years, but is subject to potential supply shortfalls during dry and critically dry years. The additional project demand would not result in a substantial increase during dry years and would not be of a magnitude to affect the level of curtailment that might be in effect. Therefore, the impact is considered a *less-than-significant impact*.

Based on water demand rates documented in the City's adopted 2015 UWMP, the proposed project could result in a water demand of approximately 2.0 MGY, which represents less than one-hundredth of one percent of the total estimated future water demand within the City's service area. This estimate includes indoor and outdoor water use based on water demand rates for multi-family residences and landscaping provided by the City. Water-efficient fixtures would be installed in in accordance with state and local regulations. Project landscaping would be subject to City regulations that call for water-efficient landscaping.

The 2015 UWMP documents a trend of declining water demand since the year 2000, and total water demand is projected to decline over the 20-year UWMP period due to continued implementation of conservation programs and other measures. However, as indicated above,

projections for the year 2035 estimate a shortfall of approximately 40 MGY during normal periods, 528 MGY during single dry year periods, and 1,639 MGY during multiple dry year periods (City of Santa Cruz, August 2016). Current water supplies are adequate during average and normal years to serve the project. During periods of dry years and drought, water customers would be subject to water curtailment as enacted by the City. A multiple dry year scenario would require more substantial curtailment of all water customers. However, the proposed project's minimal demand (less than one hundredth of one percent of the total water service area demand) would not have significant effects on the levels of water supply or curtailment that would be required throughout the service area. Therefore, the impact of increased water demand on water supplies due to the proposed project is considered less than significant as there are sufficient supplies from existing sources to serve the project.

Furthermore, the City continues to administer its water conservation program, has completed a Conservation Master Plan, and is implementing a water augmentation plan. The City is has defined water supply augmentation strategies that are being studied in order to provide increased production between 2020 and 2035 to address potential drought shortages. The plan includes the pursuit of the following portfolio of options: continued and enhanced conservation programs; passive recharge of regional aquifers; active recharge of regional aquifers; and a potable supply using advanced treated recycled wastewater or desalinated water if recycled water did not meet City needs. These prospective sources are still under evaluation. A water transfer pilot program is underway for the passive recharge strategy.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.

Impact Water-2: **Groundwater Recharge.** The proposed project will result in increased impervious surfaces on the project site, but would not substantially deplete groundwater supplies or substantially interfere with groundwater recharge. Therefore, the impact is considered a *less-than-significant impact*.

The project site and surrounding area are within the City's water service boundaries. The project area does not receive groundwater from the City's groundwater sources, and there would be no effect on groundwater supplies.

A comment on the NOP questioned the project's effect on groundwater recharge. The existing *General Plan 2030* does not have a map or designation for groundwater recharge areas. However, the site is not located within a mapped "potential groundwater recharge" area identified in the former General Plan and existing Local Coastal Plan (Map EQ-2).

The site is identified as being partially within a groundwater recharge area in the Santa Cruz County Planning Department GIS data base. Unincorporated areas north of Crossing Street also are within recharge areas as shown on County GIS maps, but the area on the west side of Ocean Street Extension is not. The County GIS mapping was based on geologic formation mapping by

the U.S. Geological Survey and U.S. Department of Agriculture soils mapping, and the groundwater recharge designation in the project area is due to the underlying Santa Margarita geologic formation that supports regional aquifers (Hanna, personal communication, May 2017).

As discussed in Chapter 4.3, Geology and Soils, perched groundwater was encountered at a depth of about three feet below ground surface on portions of the site. Moist to wet soil conditions were encountered from five to 15 feet below ground surface in the central portion of the site, but a regional (i.e., static/phreatic) groundwater table was not encountered in any of the soils borings conducted at the site (Haro, Kasunich and Associates, April 2007). Although, the site is not within a City-mapped groundwater recharge area, the underlying Santa Margarita formation could conservatively be considered a groundwater recharge area. However, the project would be below the impervious surface standard identified in the City's Municipal Code to protect groundwater recharge for projects within groundwater recharge areas. Section 24.14.090 of the City's Municipal Code, Groundwater Recharge areas, requires that structures and other impervious surfaces constructed in the R-1, R-L, and R-M zone districts not exceed fifty-five percent of a project site on properties within mapped groundwater recharge areas. The increase in impervious structures (structures and pavement) resulting from the project would be 42 percent, which would be below the level identified in City regulations to protect groundwater recharge areas. Therefore, based on compliance with City regulations and the findings of the project geotechnical investigation, the project would result in no impact to groundwater supplies and would not substantially impact or interfere with groundwater recharge.

Mitigation Measures

No mitigation measures are required as a significant impact has not been identified.