

3.15 - Utilities and Service Systems

3.15.1 - Introduction

This section describes existing conditions related to utilities and service systems (water, wastewater, stormwater, and solid waste) in the City of Antioch and project area as well as the relevant regulatory framework. This section also evaluates the possible impacts related to such utilities and service systems that could result from implementation of the proposed project. Information in this section is based, in part, on a project-specific Water Supply Assessment (WSA) (Appendix H), Preliminary Stormwater Control Plan (Appendix H), the City of Antioch Water System Master Plan Update, the 2015 Urban Water Management Plan (UWMP), the Delta Diablo Conveyance System Master Plan Update, and the City of Antioch General Plan and General Plan Environmental Impact Report (EIR). The following public comments were received during the EIR public scoping period related to utilities and service systems:

- East Bay Regional Parks District—The Draft EIR should include clear descriptions of all infrastructure improvements, including any off-site extension for public utilities.

3.15.2 - Environmental Setting

Water

Water Source and Supply

The City of Antioch

The City of Antioch water system provides water service to all areas within the City limits. The City of Antioch is within the CCWD service area and purchases a majority of its water supply from the CCWD. CCWD has a contract with the United States Bureau of Reclamation (Bureau of Reclamation) to pump Central Valley Project water from three diversions along the Sacramento/San Joaquin Rivers Delta, which it then delivers to the City.¹ The City also gets recycled water from Delta Diablo Sanitation District (Delta Diablo), which is used for landscape irrigation throughout the City. Finally, the City has Pre-1914 water rights which entitles it to draw water from the Delta.

According to the City's 2015 UWMP, in 2015 the City provided approximately 4,521 million gallons (mg) of potable and raw water to over 31,798 connections. Table 3.15-1 summarizes the City of Antioch's current and projected normal year water supplies and sources.

¹ West Yost Associates. 2015 Urban Water Management Plan, page 6-1.

Table 3.15-1: City of Antioch Normal Year Water Supplies and Sources—Current and Projected

Supply Source	Name	Actual 2015 MGPY	2020 MGPY	2025 MGPY	2030 MGPY	2035 MGPY	2040 MGPY
Purchased or Imported	Contra Costa Water District	3,915	4,099	4,309	4,538	4,785	5,044
Surface Water	San Joaquin River Intake	409	2,460	2,460	2,460	2,460	2,460
Recycled Water	Delta Diablo Sanitation District	79	326	489	489	489	489
Supply from Storage	City Municipal Reservoir	197	—	—	—	—	—
Total		4,600	6,885	7,258	7,487	7,734	7,993
Note: MGPY = million gallons per year Source: West Yost Associates. 2015 City of Antioch UWMP, May 2016.							

The City's 2015 UWMP assumes the City can pump from the Sacramento/San Joaquin Rivers Delta in normal and wetter precipitation years, during a single-year drought and in the first year of a multiple-year drought. The UWMP also assumes the City would not be able to pump in the second and third years of a multiple year drought. In addition, the City assumes that recycled water will be available under all hydrologic conditions. A summary of the City's projected water supply during Normal, Single Dry, and Multiple-Dry Years is shown in Table 3.15-2.

Table 3.15-2: Bases of Water Year Data

Year Type	Base Year	Available Supplies (mg)	Percent of Average Supply
Average Year	2000–2004	9,973	100 percent
Single Dry Year	1994	9,275	93 percent
Multiple Dry Years 1 st Year	1987	9,275	93 percent
Multiple Dry Years 2 nd Year	1988	6,682	67 percent
Multiple Dry Years 3 rd Year	1989	6,682	67 percent
Note: mg = million gallons Source: West Yost Associates. 2015 City of Antioch UWMP, May 2016.			

Surface Water

The City's main water supply source is surface water from the Sacramento-San Joaquin Delta. The City purchases Central Valley Project water pumped from the Sacramento-San Joaquin River Delta by the CCWD, the City's wholesale supplier. The CCWD has a contract with the Bureau of Reclamation for 195,000 acre-feet per year (AFY) of Central Valley Project water. The CCWD water service contract with

the Bureau of Reclamation extends through February 2045. The City has contracted with the CCWD to provide its wholesale water supply through 2028. Even under drought conditions, the CCWD has consistently met its contractual obligations in selling the amount of water that the City of Antioch has elected to purchase. Perhaps more importantly, there is no quantity limitation on the City's appropriation from the Sacramento-San Joaquin River Delta given the City has pre-1913 water rights.

In 2018, 75 percent of the City's total water supply was provided by the CCWD, and approximately 25 percent of the City's supply was obtained from the City's intakes along the Sacramento/San Joaquin Rivers.

Groundwater

The City of Antioch does not utilize groundwater as part of its water supply and does not plan to pump groundwater in the future.²

Project Site

The project site has two active groundwater wells and two closed wells. The two active wells are used to provide water to the single-family residence and to water livestock.

Recycled Water

The City of Antioch

The City of Antioch utilizes recycled water purchased from Delta Diablo to irrigate four parks and its municipal golf course.³ Recycled water use is not projected to increase beyond 489 million gallons per year (MGPY) through the year 2040 due to restrictions on the legal beneficial uses of recycled water.

Project Site

The project site does not utilize recycled water.

Water Demand and Use

The City of Antioch

The water demand projections in the City's 2015 UWMP included existing City water demands, future water demands for proposed developments within the existing City limits, and future water demands for future service areas outside the existing City limits. Total water use throughout the City service area is projected in the City's 2015 UWMP to increase from 4,600 MGPY in 2015 to 7,993 MGPY in 2040, an increase of 3,393 MGPY. Table 3.15-3 summarizes the Normal Year water supply and demand comparison.

Table 3.15-3: Normal Year Water Supply and Demand Comparison

Year	Supply Total (mg)	Demand Total (mg)	Difference (mg)
2020	6,885	6,885	0
2025	7,258	7,258	0

² West Yost Associates. 2015 Urban Water Management Plan. Page 6-4.

³ West Yost Associates. 2015 Urban Water Management Plan. Page 1-1.

Table 3.15-3 (cont.): Normal Year Water Supply and Demand Comparison

Year	Supply Total (mg)	Demand Total (mg)	Difference (mg)
2030	7,487	7,487	0
2035	7,734	7,734	0
2040	7,993	7,993	0
Note: mg = million gallons Source: West Yost Associates. 2015 City of Antioch UWMP, May 2016.			

The water demand projection included in the City's 2015 UWMP includes the impacts of the City's water conservation plan, and assumes compliance with the Water Conservation Act of 2009, known as SB X7-7.

Project Site

Potable water demands for the proposed project are not specifically designated in the City's 2015 UWMP, but future water demands for the planned development area within the Sand Creek Focus Area are included in the 2015 UWMP; therefore, future water demands for the project area are accounted for in the City's 2015 UWMP.

Water Distribution

The City of Antioch

The City's water distribution systems cover an area of 28.80 square miles and includes areas within the City limits. The 2015 UWMP identifies six primary pressure zones that provide water distribution for various areas in the City. Exhibit 3.15-1 shows the water service zones (Zones 1–IV East) within the City of Antioch.

Project Site

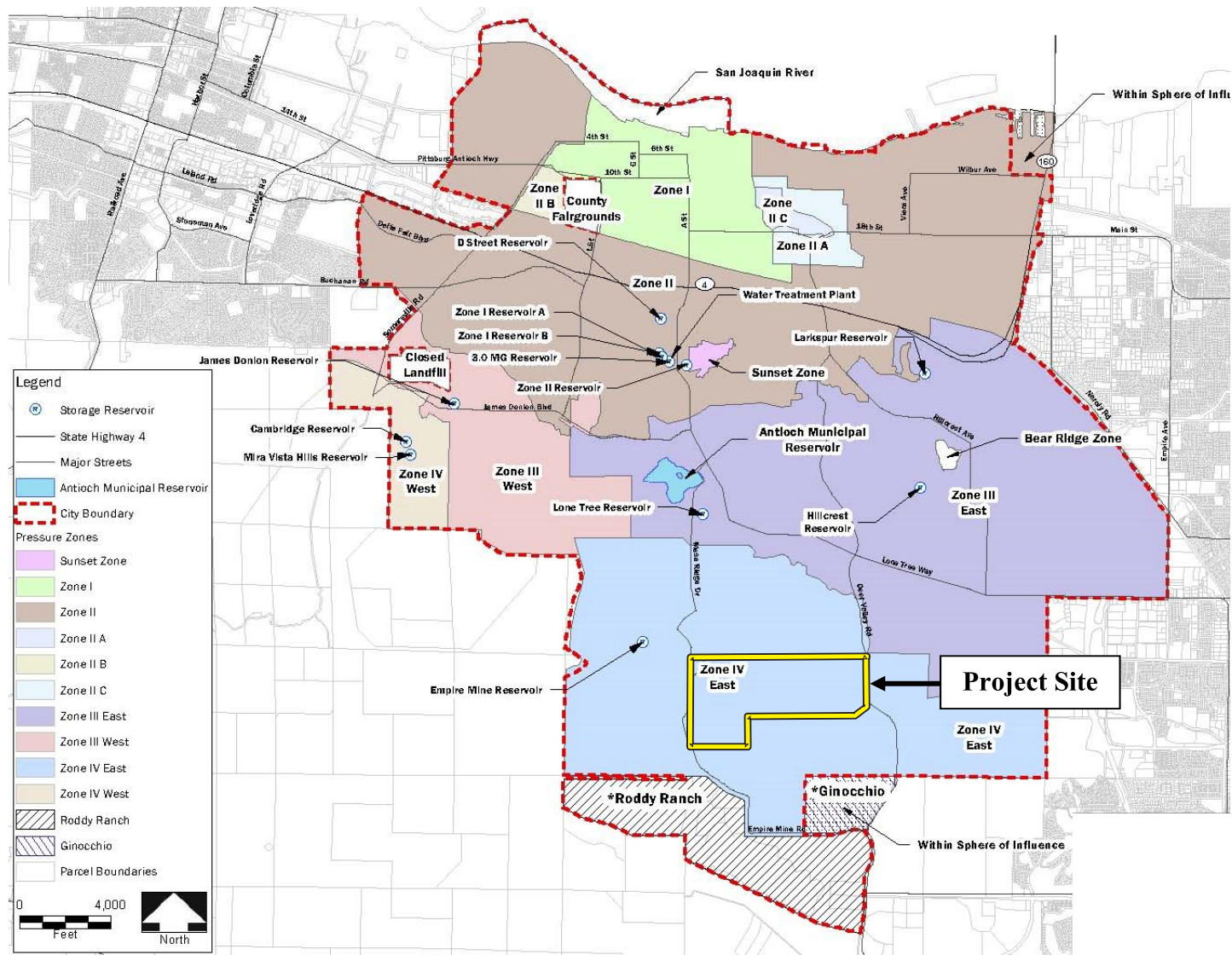
The project site is located in Zone IV East; no current water distribution infrastructure exists on-site.

Water Treatment

City of Antioch

The City of Antioch Water Treatment Plant is located at 401 Putnam Street in the City of Antioch. The Antioch Water Treatment Plant treats raw water and delivers safe potable water to residential, industrial, commercial, and irrigation customers. The pipelines from the Contra Costa Canal to the Antioch Water Treatment Plant have a capacity over 60 million gallons per day (mgd), well above the maximum predicted future water demand of 7,933 mgd.⁴ The California Department of Public Health requires that river water must be first pumped to the municipal reservoir before going to the Antioch Water Treatment Plant. The Water Treatment Plant has a maximum capacity of approximately 38 mgd. Treated water flows into two 1-million-gallon clear wells before entering the distribution system.

⁴ City of Antioch. City of Antioch 2015 UWMP. Page 2-4.



Source: City of Antioch Water System Master Plan Update. August 2014

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Wastewater

The City of Antioch

The City maintains and owns the local sewage collection system and is responsible for the collection and conveyance of wastewater to the Delta Diablo Wastewater Treatment Plant (WWTP). Delta Diablo owns and operates the regional interceptors and wastewater treatment plant. The regional conveyance facilities transport wastewater to the Delta Diablo WWTP located at 2500 Pittsburg-Antioch Highway in Antioch. After secondary treatment, the effluent is either discharged through a deep-water outfall to the New York Slough, or further processed through the Delta Diablo's Recycled Water Facility to tertiary Title 22 recycled water standards and distributed for reuse.

Project Site

The project site is located within the Delta Diablo WWTP service area.

Long-term Treatment Capacity Plans

An EIR for the expansion of the WWTP capacity to an average dry weather flow of 22.7 mgd was completed in April 1988. However, the current WWTP National Pollutant Discharge Elimination System (NPDES) Permit limits average dry weather flow to 19.5 mgd.

Wastewater Generation

The City of Antioch

The Delta Diablo WWTP has a treatment capacity of 22.7 mgd and currently treats an average of 12.4 mgd. Wastewater generated by land uses in the City are conveyed via existing infrastructure to the Delta Diablo WWTP for treatment and then disposed of or further processed through the Delta Diablo's Recycled Water Facility to tertiary Title 22 recycled water standards and distributed for reuse as recycled water.

Project Site

The project site contains one single-family residence that generates wastewater.

Stormwater

Generation and Collection

The City of Antioch

The Central Valley Regional Water Quality Control Board (RWQCB) administers the NPDES stormwater permitting program and regulates stormwater in the Central Valley region. Antioch is a permittee (along with the cities of Brentwood and Oakley) under the Phase I Municipal Separate Storm Sewer System (MS4) Municipal Stormwater Program (Order No. R5-2010-0102). However, the City of Antioch has deferred the oversight of the NPDES program to the San Francisco RWQCB.

Project Site

The project site is located in the Contra Costa Flood Control and Water Conservation District Drainage Area 104 for Sand Creek. Currently, the project site is almost entirely undeveloped with open-space and grassland. Almost all existing drainage on the project site consists of sheetflow over the terrain into Sand Creek. There are two exceptions found in areas north of Sand Creek. First, there

is a man-made ditch along the north central boundary of the project site that was constructed concurrently with the existing development to the north. This ditch currently conveys runoff from approximately 17 acres to the storm drain system located to the north of the project site. The second drainage pathway exception is an area along the north portion of the site that drains via sheet flow easterly to Deer Valley Road where it is intercepted by a ditch along the western edge of the roadway and conveyed into a 36-inch storm drain line that was constructed as part of the Kaiser medical complex. Runoff from this area (roughly 87.60 acres) is conveyed easterly along Wellness Way, to join an existing major trunk storm drain (double 84-inch pipes) that runs south to discharge into the Upper Sand Creek Detention Basin.

The project site's soils are classified as hydrologic soil groups (HSG) C and A under the Natural Resources Conservation Services (NRCS) hydrologic soil group system. The majority of the project site is classified as HSG C soils that are composed of: Capay clay (CaA), Rincon clay loam (RbA), Altamont clay (AbE), and Altamont-Fontana complex (AcF). These HSG C soils have a low soil permeability and have a very low potential for water to infiltrate the soil. There is a small section of HSG 'A' soils located in the southwest corner of the southern section of the site consisting of Briones loamy sand (BdE), but this area comprises only 1.5 percent of the project site and would not be developed. The areas mapped for the primary stormwater basins are in soil class 'C'; Capay clay for the southern basin and Rincon clay loam for the northern basin. A 2.80-acre section of off-site land to the north along Dallas Ranch Road currently drains to the site.⁵

Solid Waste

Generation and Collection

The City of Antioch

Republic Services provides solid waste collection, disposal, recycling, and yard waste services to the City. Solid waste and recyclables from the City are taken to the Contra Costa Transfer and Recovery Station in Martinez. Reusable materials are extracted and the remaining solid waste is then transferred from the Transfer and Recovery Station to the Keller Canyon Landfill in Pittsburg.

Project Site

The project site only has one residence currently, and its solid waste, disposal, and recycling needs are served by Republic Services.

Landfills

The City of Antioch

The Keller Canyon Landfill site is 1,399 acres, 244 of which comprise the actual current disposal acreage. The landfill is permitted to accept 3,500 tons of waste per day and has a total estimated permitted capacity of approximately 75 million cubic yards, with only approximately 12 million cubic yards (16 percent of total capacity) used to date.

⁵ Carson, Barbee & Gibson, Inc. 2019. Preliminary Stormwater Control Plan. Page 7.

Project Site

The project site's single residence does not produce excessive solid waste, but any waste that is produced is transferred to the Keller Canyon Landfill.

3.15.3 - Regulatory Framework

Federal

Safe Drinking Water Act

The Safe Drinking Water Act authorizes the United States Environmental Protection Agency (EPA) to establish national standards for drinking water to protect against both naturally occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the State Department of Health Services conducts most enforcement activities.

Clean Water Act (National Pollutant Discharge Elimination System)

The Water Pollution Control Act of 1972, more commonly known as the Clean Water Act (CWA), regulates the discharge of pollutants into watersheds throughout the nation. Under the CWA, the EPA implements pollution control programs and sets wastewater standards.

The NPDES permit program was established within the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant.

State

California Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne), which was passed in California in 1969, the State Water Resources Control Board (State Water Board) has the ultimate authority over State water rights and water quality policy. Porter-Cologne also establishes nine RWQCBs to oversee water quality on a day-to-day basis at the local and regional level. The RWQCBs engage in a number of water quality functions in their respective regions and regulate all pollutant or nuisance discharges that may affect either surface water or groundwater.

California Urban Water Management Planning Act

The Urban Water Management Planning Act (California Water Code §§ 10610–10656) requires that all urban water suppliers with at least 3,000 customers prepare UWMPs and update them every 5 years. The act requires that UWMPs include a description of water management tools and options

proposed to be used by the agency to maximize resources and minimize the need to import water from other regions. Specifically, UWMPs must:

- Provide current and projected population, climate, and other demographic factors affecting the supplier's water management planning;
- Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier;
- Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage;
- Describe plans to supplement or replace that source with alternative sources or water demand management measures;
- Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis (associated with systems that use surface water);
- Quantify past and current water use;
- Provide a description of the supplier's water demand management measures, including schedule of implementation, program to measure effectiveness of measures, and anticipated water demand reductions associated with the measures; and
- Assess the water supply reliability.

California Health and Safety Code

Section 64562 of the California Health and Safety Code establishes water supply requirements for service connections to public water systems. Before additional service connections can be permitted, enough water must be available to the public water system from its water sources and distribution reservoirs to adequately, dependably, and safely meet the total requirements of all water users under maximum-demand conditions.

California Green Building Standards Code

The 2019 California Green Building Standards Code (California Code of Regulations [CCR] Part 11, Title 24) (CALGreen) was most recently updated in 2019, and these changes will go into effect on January 1, 2020.⁶ CALGreen was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality.

California Senate Bills 610 and 221

Senate Bill (SB) 610 and SB 221 (California Water Code § 10910(c)(2)) amended State law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB 610 and SB 221 seek to promote more collaborative planning between local water suppliers and cities and counties by requiring that detailed information regarding water availability be provided to decision-makers prior to approval of specified large development projects. SB 610 requires that detailed information be included in a

⁶ California Building Standards Commission. 2019. Green Building Standards. Website: <https://codes.iccsafe.org/content/CAGBSC2019/cover>. Accessed December 20, 2019.

WSA, which is then included in the administrative record that serves as the evidentiary basis for an approval action by a city or county. SB 221 requires that the detailed information be included in a verification of water supply. Under SB 610, WSAs must be furnished to local governments for inclusion in any environmental documentation for certain projects (California Water Code § 10912(a)) and subject to the California Environmental Quality Act (CEQA).

California Water Code Section 10910(a) states any city or county that determines that a project, as defined in Section 10912, is subject to CEQA (Division 13 [commencing with Section 21000] of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

California Water Code Section 10912(a)

- (a) Project means any of the following:
- (1) A proposed residential development of more than 500 dwelling units.
 - (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
 - (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
 - (4) A proposed hotel or motel, or both, having more than 500 rooms.
 - (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
 - (6) A mixed-use project that includes one or more of the projects specified in this subdivision.
 - (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.

Based on the following facts, SB 610 does apply to the proposed project.

- The City has determined that the proposed project is subject to CEQA and that an EIR is required.
- The proposed project includes both a residential development and a “Village Center” designated for commercial, office, and retail space, and therefore is a mixed-use project. The residential development portion of the proposed project includes 1,177 residential dwelling units and therefore meets the definition of a “project” as specified in Water Code Section 10912(a) paragraph (1) as defined for proposed residential developments. The proposed project, with the proposed “Village Center,” also meets the definition of a “project” as specified in Water Code Section 10912(a) paragraph (6) as defined for mixed-use projects. Therefore, according to Water Code Section 10910(a), a WSA is required for the proposed project.

California Water Conservation Act

Assembly Bills 1668 and Senate Bill 606

In May 2018, Governor Jerry Brown signed AB 1668 and SB 606, which requires the State Water Board and the California Department of Water Resources to adopt long-term urban water use efficiency standards, including standards for indoor residential use, outdoor residential use, water

losses and other uses by June 30, 2022. In addition, local water suppliers are required to calculate and comply with their urban water use objectives and report those objectives and actual use to the California Department of Water Resources. Local water suppliers that do not meet their water use objectives would be subject to enforcement starting in 2023. Starting in 2027, local water suppliers' failure to comply with the State Water Board's adopted long-term urban water use efficiency standards could result in fines. Urban water agencies will also be required to update their urban water management plans and must specify reliability of water supply, define the strategy for meeting water needs, and conduct tests to determine drought preparedness.

California Model Water Efficient Landscape Ordinance

The California Model Water Efficient Landscape Ordinance, administered by the California Department of Water Resources, was created in 1992, and updated in 2009 and again in 2015. The ordinance requires local agencies to implement water efficiency measures as part of its review of landscaping plans. Local agencies can either adopt the Model Water Efficient Landscape Ordinance or incorporate provisions of the ordinance into its own code requirements for landscaping. The City of Antioch has adopted the California Model Water Efficient Landscape Ordinance as contained in the City's Municipal Code Chapter 5 Article 9-5.1006.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed Assembly Bill 939, the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. The legislation required each local jurisdiction in the State to set diversion requirements of 25 percent in 1995 and 50 percent in 2000; established a comprehensive Statewide system of permitting, inspections, enforcement, and maintenance for solid waste facilities; and authorized local jurisdictions to impose fees based on the types or amounts of solid waste generated. In 2007, amendments to the California Integrated Waste Management Act introduced a new per capita disposal and goal measurement system that moves the emphasis from an estimated diversion measurement number to using an actual disposal measurement number as a per capita disposal rate factor. As such, the new disposal-based indicator (pounds per person per year) uses only two factors: a jurisdiction's population (or in some cases employment) and its disposal as reported by disposal facilities.

Regional Central Valley

Central Valley Regional Water Quality Control Board

The Central Valley RWQCB administers the NPDES stormwater permitting program and regulates stormwater in the Central Valley region, including eastern portions of Contra Costa County. Antioch is a permittee under the Phase I MS4 Municipal Stormwater Program. The Antioch Clean Water Program implements the City of Antioch-specific components of the Contra Costa Clean Water Program (CCCWP). In addition, the City maintains storm drain pipes and catch basins. Stormwater discharges from construction activities on 1 acre or more are regulated by the RWQCB and are subject to the permitting requirements of the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit). The Central Valley RWQCB has jurisdiction over the City of Antioch, but the Central Valley RWQCB has deferred oversight of the City of Antioch to the San Francisco RWQCB.

The Central Valley RWQCB prepared the Sacramento and San Joaquin River Basin Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin hydrologic basins.⁷ The Basin Plan contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the region and describes beneficial uses of major surface waters and their tributaries.

Local

The City of Antioch General Plan

Public Services and Facilities Element

- **Objective 8.4.1:** Ensure a water system capable of providing high quality water to existing and future residences, businesses, institutions, recreational facilities, and other uses within the City of Antioch during peak use conditions, with sufficient water in storage reservoirs for emergency and fire protection needs.
- **Policy 8.4.2a:** As part of the design of water systems, provide adequate pumping and storage capacity for both drought and emergency conditions, as well as the ability to provide fire flows required by the Contra Costa County Fire Protection District.
- **Policy 8.4.2b:** Ensure that adequate infrastructure is in place and operational prior to occupancy or new development, such that (1) new development will not negatively impact the performance of water facilities serving existing developed areas, and (2) the performance standards set forth in the Growth Management Element will continue to be met.
- **Objective 8.5.1:** Ensure a wastewater collection, treatment, and disposal system capable of providing sewer services to existing and future residences, businesses, institutions, recreational facilities, and other uses within the City of Antioch during peak use conditions.
- **Policy 8.5.2a:** As part of the design of sewer systems, provide adequate capacity for average and peak conditions.
- **Policy 8.5.2b:** Ensure that adequate infrastructure is in place and operational prior to occupancy of new development such that (1) new development will not negatively impact the performance of sewer facilities serving existing developed areas, and (2) the performance standards set forth in the Growth Management Element will continue to be met.
- **Objective 8.6.1:** Reduce the amount of solid waste requiring disposal at landfills, enhancing the potential for recycling of the City's solid wastes.
- **Policy 8.6.2j:** The City shall require all development projects to coordinate with appropriate departments and/or agencies to ensure that there is adequate waste disposal capacity to meet the waste disposal requirements of the project, and the City shall recommend that all development projects incorporate measures to promote waste reduction, reuse, recycling, and composting.

City of Antioch 2015 Urban Water Management Plan

The City of Antioch adopted a UWMP in 2015. The 2015 UWMP evaluates sources of the water supply for the City's project population and future water demand until 2040, the planning horizon.

⁷ California State Water Resources Control Board (State Water Board). 2018. Basin Planning. Website: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/#basinplans. Accessed: October 10, 2019.

3.15.4 - Impacts and Mitigation Measures

Significance Criteria

According to 2019 CEQA Guidelines Appendix G, to determine whether impacts related to utilities and service systems are significant environmental effects, the following questions are analyzed and evaluated. Would the proposed project:

- a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
- c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has 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) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Approach to Analysis

Wastewater production was calculated and compared with Delta Diablo WWTP treatment capacity to determine whether wastewater treatment requirements would be exceeded. In addition, the demand for potable water (both with and without use of recycled water) was calculated to assist in determining whether sufficient water supply would be available. The City's wastewater discharge permitting and stormwater requirements were also reviewed.

The following evaluation discusses whether the proposed project would result in direct impacts on utilities and service systems such as existing wastewater and stormwater drainage facilities, water supply, or water treatment facilities. The evaluation also discusses whether the proposed project would result in indirect impacts on utilities and services systems, such as construction impacts from new stormwater drainage systems. The analysis included, but was not limited to, reviewing published data and material provided by the CCWD, the WSA prepared for the proposed project by West Yost Associates, CalRecycle, and the City of Antioch.

Impact Evaluation

Water, Wastewater, and Stormwater Facilities

Impact UTIL-1: The project could require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Construction

Water Supply

The proposed project would require new on- and off-site potable water infrastructure to connect to the City's existing water lines. The proposed project would be designed to integrate with existing transmission mains and would complete a looped connection through the proposed project site. A point of connection would be located at the existing 20-inch water main in Deer Valley Road at the future intersection with the extension of Sand Creek Road. Other major streets throughout the proposed project site would contain approximately 8 to 12-inch water lines. The construction impacts for installing this infrastructure are studied and mitigated in the relevant impact analyses discussions throughout this Draft EIR, including Section 3.3, Air Quality; Section 3.4, Biological Resources; Section 3.7, Greenhouse Gas Emissions; Section 3.11, Noise; and Section 3.14, Transportation.

As discussed under Impact UTIL-2, the proposed project would not create the need for new water treatment facilities or result in insufficient water supply. Thus, there would be no need to construct new or expand existing water treatment facilities. Therefore, impacts related to need for relocation or construction of new or expanded water supply facilities would be less than significant.

Wastewater Treatment

As described in Chapter 2, Project Description, the proposed project would include the installation of all new infrastructure to serve the project, including a new sewer main, new sewer lines throughout the project site, and an off-site extension of the existing sewer line. All on- and off-site improvements would be within the public right-of-way or within public utility easements. The project's projected wastewater would be conveyed to the Delta Diablo WWTP by new sanitary sewer lines constructed within the project site and off-site improvement areas and connected to existing lines. The construction impacts of installing such infrastructure are evaluated Section 3.3, Air Quality; Section 3.4, Biological Resources; Section 3.7, Greenhouse Gas Emissions; Section 3.11, Noise; and Section 3.14, Transportation.

As described under Impact UTIL-3, the proposed project would generate approximately 258,940 gallons of residential wastewater per day (0.258 mgd), and approximately 5,000 gallons of commercial wastewater per day (0.005 mgd), while the fire station is anticipated to generate 4,465 gallons of wastewater per day (0.004 mgd), for a combined wastewater generation of 0.267 mgd. The Delta Diablo WWTP has a permitted capacity of 19.5 mgd, but only has an average daily flow of 12.4 mgd (a 7.1 mgd delta). Thus, the proposed project would generate less than 1 percent of the average daily flow and permitted capacity of the WWTP. As a result, the Delta Diablo WWTP would have sufficient capacity to serve all aspects of the proposed project, and a new or expanded wastewater treatment

facility would not be required. Therefore, impacts related to need for relocation or construction of new or expanded wastewater treatment facilities would be less than significant.

Stormwater Drainage

The proposed project could have a significant impact if it required the construction or expansion of new stormwater drainage facilities. The project site is mostly undeveloped and composed of pervious surfaces, such as grasses and vegetation. The proposed project would result in a total net increase of approximately 373.60 acres (7,731,723 square feet) of impervious surfaces compared to existing conditions. As a result, the proposed project could result in the need for new or expanded storm drainage facilities.

As discussed in Section 3.9, Hydrology and Water Quality, the proposed project would include five drainage management areas (DMAs). Each DMA would include Integrated Management Practices (IMPs) that provide full bioretention treatment of stormwater runoff, and include stormwater retention basins, specifically designed for the pertinent amount of impervious and pervious surfaces. The stormwater systems would be designed according to the County's hydrograph modification performance requirements. In addition, implementation of a Final Stormwater Control Plan and Operations & Maintenance (O&M) Plan would be submitted to the City and county for review would ensure the proposed project includes BMPs designed to prevent the significant release of stormwater pollutants consistent with all NPDES rules, regulations and procedures for municipal, construction, and industrial activities as promulgated by the State Water Board or the Central Valley RWQCB. Furthermore, consistent with General Plan Policies 8.7.2 and 11.4.2, the proposed project would be required to prepare a hydraulic study to assess the current streambed flow of Sand Creek and how the new infrastructure would affect the streambed and/or the 100-year floodplain, and including modification of the design of the pedestrian bridge, if needed, to clear span the creek would ensure that impacts related to storm drainage would be less than significant. Therefore, impacts related to the need for relocation or construction of new or expanded stormwater drainage facilities would be less than significant.

Telecommunications

There are no telecommunications facilities or infrastructure located on-site. However, the proposed project site is within the service areas of Comcast and AT&T. Together, the two companies would provide voice and data communication services to all development on-site. The proposed project would require connection to existing telecommunications facilities in the vicinity; all telecommunication lines would be underground and located within public utility easements. The construction impacts of installing such infrastructure are studied and mitigated via analysis in other sections of this Draft EIR, including but not limited to, Section 3.3, Air Quality; Section 3.4, Biological Resources; Section 3.7, Greenhouse Gas Emissions; Section 3.11, Noise; and Section 3.14, Transportation. Therefore, impacts related to need for relocation or construction of new or expanded telecommunications facilities would be less than significant.

Electricity and Natural Gas

The proposed project site is within the service area of Pacific Gas and Electric (PG&E). There are no existing electricity or natural gas facilities, or infrastructure located on-site. However, an existing and

abandoned petroleum gas pipeline traverses the project site and will be removed during the first phase of construction subject to all necessary local, State, and federal permits, subject to analysis and mitigation identified in the sections of this Draft EIR outlined below. (For further discussion, see Section 3.8, Hazards) Further, while the proposed project would not require that new off-site electricity or natural gas facilities be constructed because it is located in an urban area that already contains sufficient facilities, it would require that new connections and pipelines be laid on-site to connect to existing electricity and natural gas facilities on adjacent developed land. All electricity and natural gas lines would be located underground within public utility easements. The construction impacts of installing new electric and natural gas pipelines are studied and mitigated in other relevant impact sections of this Draft EIR, including but not limited to, Section 3.3, Air Quality; Section 3.4, Biological Resources; Section 3.6, Geology; Section 3.7, Greenhouse Gas Emissions; Section 3.8, Hazards; Section 3.11, Noise; and Section 3.14, Transportation. Therefore, impacts related to the need for relocation or construction of new or expanded electricity and natural gas facilities would be less than significant.

Operation

Impacts related to the need for relocation or construction of new or expanded water supply facilities, wastewater treatment facilities, telecommunications facilities, and electricity and natural gas facilities are limited to construction impacts. However, post-construction stormwater runoff after developments are constructed can include oils, trash, pesticides, and other pollutants. As discussed in Section 3.9 Hydrology and Water Quality, the proposed project would include stormwater facilities that would be designed to treat stormwater on-site and prevent the proposed project from creating a need for new or expanded stormwater facilities off-site. Therefore, impacts would be less than significant.

Level of Significance

Less Than Significant

Water Supply

Impact UTIL-2:	The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
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Construction

During construction, water would be used for dust control, worker consumption, and other construction related activities. All water used during construction would be trucked in or tapped on-site from nearby water lines that would provide potable water from the CCWD. Construction water use would be limited to the construction period and therefore would not result in a permanent water demand. No respective construction impacts would occur.

Operation

The proposed project would consist of 1,177 residential units, a village center with commercial uses, parks, and public use space. A fire station would also be constructed by Contra Costa County Fire Protection District. As described under Section 3.12, Population and Housing, the proposed project

would result in approximately 3,931 new residents, and 54,000 square feet of commercial uses. As a result, the proposed project would create an additional need for potable water.

As noted above, the City purchases a majority of its water supply from the CCWD. The CCWD draws water from Rock Slough near Oakley, Old River near the Town of Discovery Bay, and Mallard Slough in Bay Point. The water is transported in the Contra Costa Canal, which starts at Rock Slough, then stretches west to Clyde, south to Walnut Creek, and north to Martinez. The CCWD also stores water in the Los Vaqueros Reservoir south of Brentwood, the Contra Loma Reservoir in Antioch, the Mallard Reservoir in Concord, and the Martinez Reservoir in Martinez. The CCWD canal water can be pumped to Antioch's Water Treatment Plant or the Municipal Reservoir, where the City treats and distributes potable water. The City of Antioch also has pre-1913 water rights and pumps surface water from the Sacramento-San Joaquin Delta. The City then treats the water at its water treatment plant and distributes the potable water to all customers within the City limits.

Under Normal and Single Dry Years, the City of Antioch water supply would consist of: 2,460 mg/year from the Sacramento and San Joaquin Rivers Delta, 326 MGPY of recycled water in 2020 and 489 MGPY of recycled water in 2025 and subsequent years, and purchased water from the CCWD are assumed to provide the remaining demand.⁸ The City's Normal Year water supplies would be adequate to meet estimated Normal Year demands.⁹ During the Single Dry Years, the City would use local water supplies first and then purchase water supplies from CCWD to minimize demand reductions by its customers.¹⁰ As a result, the City's Single Dry Year water supplies are adequate to meet projected Single Dry Year demands. During Multiple Dry Years, the City's water supply would consist of the following:

- **First Dry Year**
 - City water supplies would be the same as Single Dry Year water supplies.
- **Second Dry Year**
 - No water supplies would be available from the Sacramento and San Joaquin Rivers Delta
 - 326 MGPY of recycled water in 2020 and 489 MGPY of recycled water in 2025 and subsequent years
 - Purchased water supplies from the CCWD would provide 100 percent of the City's normal year demand from 2020 to 2030, 98 percent of the City's normal year demand for 2035, and 94 percent of the City's normal year demand in 2040.
- **Third Year**
 - No water supplies would be available from the Sacramento and San Joaquin Rivers Delta
 - 326 MGPY of recycled water in 2020 and 489 MGPY of recycled water in 2025 and subsequent years
 - Purchased water supplies from the CCWD would provide 90 percent of the City's normal year demand from 2020 to 2030, 88 percent of the City's normal year demand for 2035, and 85 percent of the City's normal year demand in 2040.

⁸ West Yost Associates. 2016. City of Antioch 2015 Urban Water Management Plan. Page 7-5.

⁹ Ibid.

¹⁰ West Yost Associates. 2016. City of Antioch 2015 Urban Water Management Plan. Page 7-6.

As described above, the City would have sufficient water supplies available during Normal, Single Dry Years, and Multiple Dry Years. In addition, the City's Multiple Dry Year demand would be reduced by up to 15 percent by 2040 with implementation of the City's Water Shortage Contingency Plan in order to meet the CCWD available water supply.¹¹

Pursuant to Water Code Section 10910(a), the WSA prepared by West Yost Associates (Appendix H) identifies the water demand of the proposed project based on the City's water demand factors for single-family residences and age-restricted residences.¹² Table 3.15-4 summarizes the project's projected potable water demand.

Table 3.15-4: Estimated Project Potable Water Demand

Land Use Data				Potable Water Demand			
Proposed Land Use	Area (acres)	Quantity	Units	Water Use Factor ⁷	Units	Average Water Demand (GPD)	Annual Water Demand (MGPY)
Low Density ¹ (residential)	140.50	543.00	du	350	GPD/du	190,050	69.4
Medium Density ¹ (residential)	38.00	212.00	du	350	GPD/du	74,200	27.1
Age-Restricted ²	75.00	422.00	du	235	GPD/du	99,170	36.2
Non-Residential Water Connections							
Village Center ³ (commercial)	5.00	54,000	SF	0.2	GPD/SF	10,800	3.9
Fire Station ⁴	2.00	1	Station	4,962	GPD	4,962	1.8
Irrigated Areas							
Parks ⁵	20.00	—	—	4.3	AFY	76,837	28.0
Irrigated Landscaping ⁵	2.50	—	—	2.37	AFY	5,283	1.9
Non-Irrigated Areas							
Open Space	229.50	—	—	0	AFY	0	0
Major Roadways	38.00	—	—	0	AFY	0	0
Staging Area	1.00	—	—	0	AFY	0	0
Unaccounted for Water ⁶				—	—	—	9.7
Total	551.50	—	—	—	—	—	178.1

¹¹ West Yost Associates. 2016. City of Antioch 2015 Urban Water Management Plan. Page 7-7.

¹² West Yost Associates. 2016. 2015 City of Antioch Urban Water Management Plan. Table 3-2 and 4-3.

Table 3.15-4 (cont.): Estimated Project Potable Water Demand

Land Use Data				Potable Water Demand			
Proposed Land Use	Area (acres)	Quantity	Units	Water Use Factor ⁷	Units	Average Water Demand (GPD)	Annual Water Demand (MGPY)
<p>Notes:</p> <p>AFY = acre-feet per year</p> <p>du = dwelling unit</p> <p>GPD = gallons per day</p> <p>GPD/du = gallons per day/per dwelling unit</p> <p>MGPY = million gallons per year</p> <p>SF = square feet</p> <p>¹ Water Use Factor based on City of Antioch 2015 UWMP, Tables 3-2 and 4-3. Assumes 3.0 people per du (Antioch 2015 UWMP).</p> <p>² Water Use Factor based on City of Antioch 2015 UWMP, Tables 3-2 and 4-3. Assumes 2.0 people per du (West Yost Associates estimate).</p> <p>³ Commercial water usage varies depending on tenants. Retail and office likely use 0.1 GPD/AFY, while restaurants would have much higher usage factors.</p> <p>⁴ The Fire Station would not be constructed by the Applicant, but would be constructed at a later date by Contra Costa County Fire Protection District. Nevertheless, impacts related to construction and operation are analyzed in this Draft EIR.</p> <p>⁵ Water Use Factor is derived in Table A-2. Assumes that all park and irrigated landscape acreage use the maximum applied water allowance.</p> <p>⁶ Residential Water Use Factor = (year 2020 projected residential water use)/(year 2020 projected population) x (people per du).</p> <p>⁷ Based on 5.5 percent of total water production (see City's 2015 UWMP, Table 4-3).</p>							

Using the 2015 UWMP water demand factors, the proposed project would result in an estimated annual potable water demand of 178.1 MGPY. By 2040, the 2015 UWMP estimates that total potable water use for the City of Antioch would be 7,504 MGPY.¹³ As a result, the proposed project represents less than 1 percent of the City's projected water use. In addition, during dry years and multiple dry years the proposed project would still represent less than 1 percent of the total available water supply and demand. As described previously, the City would be able to provide sufficient water supply in normal, dry, and multiple dry years by using available local supplies and then in the second and third dry years all supplies would be purchased from CCWD.

Buildout of the Sand Creek Focus Area, including the proposed project site, is accounted for in the City's Water System Master Plan Update. The Water System Master Plan Update included the preparation of a Capital Improvement Program (CIP) that includes improvements necessary to provide safe and reliable water delivery throughout the City based on projected growth and associated increases in demand on the City's distribution system. As discussed previously, the CCWD would have sufficient supplies, even in the second and third dry years of a drought, to supply the City of Antioch with an adequate allocation to meet the needs of all Antioch residents. Accordingly, adequate water supplies would be available to serve the proposed project from existing and planned supplies. Therefore, impacts related to sufficient water supply availability would be less than significant.

¹³ West Yost Associates. 2016. 2015 Urban Water Management Plan. Page 4-4. Table 4-4.

Level of Significance

Less Than Significant

Wastewater Treatment Capacity

Impact UTIL-3:	The project would result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
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Construction/Operation

The proposed project could have a significant impact if the wastewater treatment provider (Delta Diablo) would not have sufficient capacity in the Delta Diablo WWTP to serve the proposed new uses in addition to the provider's existing commitments.

The proposed project consists of 1,177 residential units, a village center with commercial uses, parks, and public use space. Additionally, Contra Costa County Fire Protection District would construct a fire station on-site. As described under Section 3.12, Population and Housing, the proposed project would result in approximately 3,931 new residents. As a result, the proposed project would generate wastewater that would require treatment at the Delta Diablo WWTP. Based on a wastewater generation rate of 220 GPD per residential unit,¹⁴ the project's residents would generate 258,940 gallons of wastewater per day or 0.258 mgd. The project also proposes 54,000 square feet of neighborhood commercial uses. Using the commercial wastewater generation rate of 1,000 gallons per day per acre,¹⁵ the Village Center would generate an estimated 5,000 gallons of wastewater per day or (0.005 mgd). In addition, the fire station is conservatively estimated to generate 4,466 gallons of wastewater per day or (0.004 mgd) based on the estimated water demand rate. The average daily flow at the WWTP is 12.4 mgd and the permitted capacity is 19.5 mgd; thus, there is a remaining, unused treatment capacity of 7.1 mgd. As a result, the combined wastewater generation of the proposed project would be 0.267 mgd, far less than 1 percent of the average daily flow and the permitted capacity of the Delta Diablo WWTP.

Thus, the proposed project would not result in a need for new or expanded wastewater treatment facilities, and Delta Diablo can reasonably determine it could serve the proposed project's wastewater demands. Therefore, impacts related to wastewater treatment capacity would be less than significant.

Level of Significance

Less Than Significant

¹⁴ LSA Associates, Inc. 2003. Antioch General Plan Update EIR. Page 4.12-2.

¹⁵ Ibid.

Landfill Capacity

Impact UTIL-4: The project would not 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.

Construction

During the proposed project's construction phase, the existing single-family residence, barn, and outbuildings would be removed, which would result in construction-related solid waste. Using the EPA's estimation of residential demolition debris,¹⁶ demolition of the existing on-site single-family residence would create 160,540 pounds of solid waste.¹⁷ Additionally, the EPA estimates that residential construction for the proposed project would generate an average of 8,112 pounds per dwelling unit and non-residential construction would generate 3.89 pounds per square foot. As a result, residential construction would generate an estimated 9,547,824 pounds¹⁸ (4,773 tons) and non-residential construction would generate 210,060 pounds¹⁹ (105 tons) of solid waste. Additionally, construction of the fire station would generate approximately 23,340²⁰ pounds of solid waste. The proposed project's construction waste would be generated over a period of several years during the different phases of construction and not occur at one time.

As discussed previously, solid waste and recyclables from the City are taken to the Contra Costa Transfer and Recovery Station in Martinez and then is transferred from the Transfer and Recovery Station to the Keller Canyon Landfill in Pittsburg. The landfill is permitted to accept 3,500 tons of waste per day and has a total remaining estimated capacity of approximately 63 million cubic yards.²¹ As a result, the proposed project's total estimated construction waste would represent less than 1 percent of the total remaining capacity of the Keller Canyon Landfill. In addition, due to project phasing, the proposed project would not generate construction waste that would exceed the permitted daily capacity. Furthermore, as discussed under Impact UTIL-5, the project would comply with CALGreen, which requires at least 65 percent diversion of construction and demolition waste. Therefore, construction impacts related to landfill capacity would be less than significant.

Operation

As discussed previously, Republic Services would provide solid waste collection, disposal, recycling, and yard waste services to the project site. Table 3.15-5 summarizes the daily and annual operational solid waste generation estimates for the proposed project.

¹⁶ United States Environmental Protection Agency (EPA). 1998. Characterization of Building-related Construction and Demolition Debris, Table 5.

¹⁷ Calculation: (1,396 sf [Estimated average size of residences demolished] x 115 pounds per square foot) = 160,540 pounds

¹⁸ Calculation: (8,112 lbs/dwelling unit x 1,177 dwelling units) = 9,547,824 pounds

¹⁹ Calculation: (3.89 lbs/square foot x 54,000 square foot Village Center) = 210,060 pounds

²⁰ Calculation: (3.89 lbs/square foot x [6,000 square feet of fire station use, based on size of Station 82]) = 23,340 pounds

²¹ California Department of Resources Recycling and Recovery (CalRecycle). SWIS Facility Detail: Keller Canyon Landfill. Website: <https://www2.calrecycle.ca.gov/swfacilities/Directory/07-AA-0032>. Accessed June 17, 2019.

Table 3.15-5: Project Operational Solid Waste Generation

Land Use	Units	Approximate Waste Generation Rate	Approximate Waste Generation	
			Daily Total (tons)	Annual Total (tons)
Residential	3,931 residents	3 pounds/person/day ¹	5.9	2153.5
Commercial	54,000 square feet	5 pounds/1000 square-foot/day ²	0.135	49.3
Fire Station	2.0 acres	2 cubic yards per week ³	.04	15.6 ^a
Notes: ¹ California Department of Resources Recycling and Recovery (CalRecycle). Jurisdiction Per Capita Disposal Trends 2015-2018. Accessed June 17, 2019. ² California Department of Resources Recycling and Recovery (CalRecycle). Estimated Solid Waste Generation Rates. Access: https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates . June 17, 2019. ³ Republic Services. 2019. Contra Costa County Fire Protection District Invoice. ^a Calculation: 2 cubic yards per week x 52 weeks = 104 cubic yards per year. 104 cubic yards x (300 pounds/per 1 cubic yards) = 31,200 pounds per year. (31,200 pounds per year)/2000 pounds per ton = 15.6 tons per year.				

As a result, the proposed project would generate an estimated 6 tons of solid waste per day and 2190.0 tons of solid waste a year. This waste volume represents less than 0.01 percent of the available landfill capacity at the Keller Canyon Landfill. Moreover, the values shown in the table are not adjusted to account for recycling, composting and waste reduction activities that would further divert waste from landfills (as required by compliance with General Plan Policy 8.6.2a—g), which means that the above-referenced figures are conservative and may over estimate the amount of solid waste to be generated by operation of the project.

As a result, the proposed project represents less than 1 percent of the total capacity of Keller Canyon Landfill, which contains sufficient capacity to serve the project. Therefore, operational impacts related to landfill capacity would be less than significant.

Level of Significance

Less Than Significant

Solid Waste Regulations Consistency

Impact UTIL-5: The project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

Construction

The proposed project would be required to dispose of demolition waste consistent with Article II: Construction and Demolition Debris Recycling of the Municipal Code. Consistent with CALGreen, the proposed project would be required to divert at least 75 percent construction and demolition waste. These measures would ensure compliance with the Integrated Waste Management Act by ensuring project construction waste is transferred to facilities that can adequately recycle solid waste. Thus, with compliance with existing City Municipal Code and the Integrated Waste Management Act, the

proposed project would comply with applicable solid waste regulations and statutes. Therefore, impacts related to solid waste regulations consistency are less than significant.

Operation

Project operation would be required to comply with applicable State and local regulations related to solid waste such as the California Integrated Waste Management Act and Title 6 Chapter 3 of the City of Antioch Municipal Code. Adherence to the City Municipal Code would ensure sufficient solid waste collection and transportation is available to the proposed project, and would ensure that disposal sites contain sufficient capacity through permit review and inspections, and recycling programs are implemented in order to divert waste. As such, project operation would not impede the ability of the City to meet waste diversion requirements or cause the City to violate State and local statutes and regulations related to solid waste. Therefore, with compliance with existing State and City law requiring recycling and waste diversion from landfill requirements, operational impacts related to solid waste regulations consistency would be less than significant.

Level of Significance

Less Than Significant

3.15.5 - Cumulative Impacts

Water

The geographic scope of the cumulative potable water analysis is the service area of the City of Antioch and the CCWD, which provides potable water to residents and businesses within the City. The CCWD considered the existing capacity and future demand for capacity to determine needed updates to water facilities. In the course of preparing the UWMP, the CCWD estimated water demand of future development in the service area and forecast the needed facility upgrades. The forecast included supply facility upgrades needed to accommodate growth in the County, including the City of Antioch.

Cumulative projects listed in Table 3-1 (refer to Chapter 3, Environmental Impacts Analysis, Table 3-1, Cumulative Projects) are located within the CCWD service area and would create water supply demand. In total, the cumulative projects would result in approximately 3,309 housing units and 182,000 square feet of commercial retail space. Table 3.15-6 summarizes the approximate cumulative water demand.

Table 3.15-6: Cumulative Water Demand

Land Use Data			Potable Water Demand			
Proposed Land Use	Quantity	Units	Water Use Factor ²	Units	Average Water Demand (GPD)	Annual Water Demand (MGPY)
Low Density ¹ (Single-family homes)	2,560	du	350	GPD/du	896,000	1,003.0
Medium Density ¹ (Condos/Apartments)	676	du	350	GPD/du	236,600	265.0

Table 3.15-6 (cont.): Cumulative Water Demand

Land Use Data			Potable Water Demand			
Proposed Land Use	Quantity	Units	Water Use Factor ²	Units	Average Water Demand (GPD)	Annual Water Demand (MGPY)
Age-Restricted ²	63	du	235	GPD/du	14,805	16.5
Non-Residential Water Connections						
Village Center ³ (commercial)	617,600	SF	0.2	GPD/SF	123,520	138.4
Fire Station	1	Fire Station	4,962	GPD	4,962	1.8
Total					1,261,082	1,424.7
Notes: AFY = acre-feet per year du = dwelling unit GPD = gallons per day GPD/du = gallons per day/per dwelling unit MGPY = million gallons per year SF = square feet ¹ Water Use Factor based on City of Antioch 2015 UWMP, Tables 3-2 and 4-3. Assumes 3.0 people per du (from Antioch 2015 UWMP). ² Water Use Factor based on City of Antioch 2015 UWMP, Tables 3-2 and 4-3. Assumes 2.0 people per du (West Yost Associates estimate). ³ Commercial water usage varies depending on tenants. Retail and office likely use 0.1 GPD/AFY, while restaurants would have much higher usage factors.						

By 2040, the 2015 UWMP estimates that total potable water use for the City of Antioch would be 7,504 MGPY.²² Additionally, the 2015 CCWD UWMP indicates that the total planned water supply in 2020 is anticipated to be 228,000 acre-feet.²³ As a result, cumulative projects represent 18 percent of the City of Antioch's water supply or less than 1 percent of the CCWD projected water supply in 2040.

The CCWD 2015 UWMP determined that the CCWD would be able to provide adequate water supplies to the City and cumulative projects area. The City would have adequate water supplies to serve the cumulative projects during normal and dry years. In addition, cumulative projects listed in Table 3-1, would be required to comply with provisions of the City Code, County Code and CALGreen related to water conservation. Therefore, the proposed project, in conjunction with identified cumulative projects in the City of Antioch and City of Brentwood, would result in a less than significant cumulative impact related to water supply and water supply facilities

Wastewater

The geographic scope of the cumulative wastewater analysis is the service area of Delta Diablo, which provides wastewater collection and treatment services for the City of Antioch. Delta Diablo

²² West Yost Associates. 2016. 2015 UWMP, page 4-4 Table 4-4.

²³ Contra Costa Water District (CCWD). 2015. Urban Water Management Plan.

considered the existing capacity and future demand for capacity to determine needed updates to wastewater and recycled water facilities. In the course of preparing the Sewer System Master Plan, Delta Diablo estimated wastewater generated from future development in the service area and forecast the needed facility upgrades.²⁴ The forecast included treatment facility upgrades needed to accommodate growth in the City and maintain compliance with applicable regulatory standards for wastewater treatment and discharge.

As discussed in this section, the Sewer System Master Plan determined that capacity exists to service the City and cumulative projects area demand with respect to wastewater treatment facilities. The NPDES permit for the WWTP allows an average dry weather flow of 19.5 mgd, while the current flow rate is 12.4 mgd, leaving sufficient capacity for the proposed project and cumulative projects in the vicinity. Buildout of the Sand Creek Focus Area, including the proposed project site, has been previously anticipated by the City. Per the General Plan EIR, a less-than-significant impact to wastewater facilities would occur with implementation of General Plan policies. Therefore, the proposed project, in conjunction with identified cumulative projects in City of Antioch would result in a less than significant cumulative impact related to wastewater generation and wastewater treatment facilities.

Storm Drainage

The geographic scope for cumulative storm drainage is the areas that drain to the Contra Costa Clean Water Program's storm drainage system and to the San Joaquin River Delta. The cities of Antioch, Brentwood and Oakley are all covered under the same municipal storm water permit. Further, all jurisdictions much comply with the State's Construction General Permit.

Cumulative projects listed in Table 3-1 predominantly consist of commercial and residential uses to be located in the City of Antioch and City of Brentwood, which would all generate stormwater runoff. All cumulative projects listed would be required to obtain coverage under the Construction General Permit from the State Water Board, which would require preparation of a Storm Water Pollution Prevention Plan (SWPPP) that would control potential discharges of contaminants into Sand Creek and the San Joaquin River Delta. Operations of these cumulative projects would be required to comply with the East Contra Costa County Municipal NPDES Permit, the CCCWP, city ordinances regarding stormwater, and the General Plan policies and ordinance codes of the cities of Antioch and Brentwood. Consistent with measures in the City of Antioch Ordinance Code, Chapter 9, all development in the City is required to incorporate stormwater collection systems into the development, which would in turn ensure cumulative project operation would not create runoff that exceeds the capacity of existing or planned stormwater drainage systems such that new or expanded facilities would be required. Consistent with measures in the City of Brentwood Ordinance Code Title 14, all development in the City is required to incorporate stormwater collection systems into the development, which would in turn ensure cumulative project operation would not create runoff that exceeds the capacity of existing or planned stormwater drainage systems such that new or expanded facilities would be required. Therefore, the proposed project, in conjunction with identified cumulative projects, would result in a less than significant cumulative impact related to stormwater generation and stormwater drainage facilities.

²⁴ Delta Diablo Sanitation District (Delta Diablo). 2018. Sewer System Management Plan, page 8-1.

Solid Waste

As discussed previously, Republic Services would provide solid waste collection, disposal, recycling, and yard waste services to the project site, as well as cumulative projects in the Cities of Antioch and Brentwood. Cumulative projects listed in Table 3-1 consist predominantly of residential uses and commercial uses would generate solid waste that would increase demand on solid waste facilities to receive, process, and dispose solid waste.

As described previously, Keller Canyon Landfill has a remaining capacity of approximately 63 million cubic yards. The anticipated waste volume of cumulative projects development would be approximately 10,340^{25,26} cubic yards per year, which is less than 1 percent of the landfill's maximum permitted capacity. Existing solid waste facilities have sufficient capacity to serve cumulative development anticipated in the County. Therefore, the project, in conjunction with identified cumulative projects, would result in a less than significant cumulative impact related to solid waste generation and landfill capacity.

Level of Cumulative Significance

Less Than Significant

²⁵ Calculation: (3,309 cumulative households) x (12.23 lb/household/day)=40,469 lbs of solid waste/day = 14,771,185 lbs/year=48,761 cubic yards. Notes 1 ton=2,000 pounds; 1 ton=1.4 cubic yards.

²⁶ California Department of Resources Recycling and Recovery (CalRecycle). Solid Waste Generation Rates. Website: <https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates>.

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