4.14 Utilities and Service System

This section evaluates potential impacts related to public utilities (storm drain, wastewater, water, water supply, solid waste disposal, electrical power, natural gas, and telecommunications) that could result from implementation of the project. The analysis area covers the entirety of the city of Irvine (City). This analysis relies upon the Proposed Conditions Infrastructure Report for Water, Sewer, Storm Drainage, and Water Quality prepared by Fuscoe Engineering, Inc. (Appendix I), impacts associate with natural gas, energy, and telecommunications facilities, and solid waste have been assessed at using publicly available data.

4.14.1 Existing Conditions

4.14.1.1 Water Infrastructure and Supply

a. Water System

The City's existing potable water system is fully encompassed within the potable and non-potable water service area of the Irvine Ranch Water District (IRWD). IRWD also services portions of the surrounding cities of Tustin, Santa Ana, Orange, Costa Mesa, Lake Forest, Newport Beach, and unincorporated areas of the County of Orange. Altogether the service area is approximately 181 square miles with the City and its sphere of influence accounting for approximately 41 percent (74 square miles) of IRWDs service area.

IRWD serves about 20 percent of Orange County, and has facilities worth over $1 billion, including more than 1,500 miles of drinking water pipelines, more than 900 miles of sewer pipes, 53 reservoirs, and two large water recycling facilities. Distribution pipelines within the City range in diameter between 1-inch and 72-inches and have a total length of approximately 78 miles. Most of the water pipes throughout the City are 8-inch pipes and most of the pipelines were constructed in the 1970s through the 2000s.

b. Water Demand

The water demands generated within the City and its three Focus Areas are representative of a portion of all IRWD's customer water use, water demand forecasting. All connections throughout IRWDs service area are metered and IRWD employs water use factors that assign water demands to various land use types and then aggregates these demands. The water use factors are based on average water use and incorporate the effect of IRWD's tiered-rate conservation pricing (budget-based rates). During 2020, IRWD reported that the top three water users were multi-family residential units (44 percent of total), commercial uses (13 percent of total), and single-family residential units (12 percent of total). Table 4.14-1 presents additional data regarding IRWD water demand in 2020.

Table 4.14-1 IRWD 2020 Water Demand		
Water Use Type	Level of Treatment When Delivered	Volume (acre-feet)
Multi-Family	Drinking Water	24,955
Commercial	Drinking Water	7,281
Single Family	Drinking Water	6,885
Industrial	Drinking Water	4,581
Landscape	Drinking Water	4,211
Institutional/Governmental	Drinking Water	1,454
Other Potable	Drinking Water	238
Agricultural Irrigation	Drinking Water	117
Agricultural Irrigation	Raw Water	599
Industrial	Raw Water	441
Landscape*	Raw Water	1,965
Agricultural Irrigation*	Raw Water	461
Other Non-Potable*	Raw Water	96
Commercial*	Raw Water	39
Industrial*	Raw Water	2
Losses**	Drinking Water	3,049
TOTAL		56,374
SOURCE: IRWD 2020 UWMP - Table 4-1 Retail: Demands for Potable and Non-Potable Water Demands – Actual *Supplement to Recycled Water system **Distribution System Real Losses		

As shown in Table 4.14-1, IRWD delivered 56,374 acre-feet (AF) of potable and non-potable water with residential demands (multifamily and single family) accounting for 57 percent of water demand within the service area. In comparison to previous water years, water use in 2020 was significantly lower than the 71,086 AF that IRWD estimated in the 2015 Urban Water Management Plan (UWMP). Historically, water demands in the IRWD service area have decreased over time due to conservation campaigns, tiered and allocation-based rate structures, and advances in water savings technologies. IRWD's three largest water users in 2015 were single family homes (24,024 AF), commercial uses (7,856 AF), and multifamily units (6,286 AF). These decreases in residential and commercial driven water use trends are consistent with conservation efforts and land use/development throughout IRWDs service area.

c. Existing Water Supply

IRWD's water resource portfolio consists of imported water, local groundwater, recycled water, and local surface water. Treated and untreated imported water is purchased from the Metropolitan Water District of Southern California (Metropolitan or MWD) through the Municipal Water District of Orange County (MWDOC). Potable and non-potable groundwater supplies are extracted from both the Main Orange County Groundwater Basin and the Irvine Sub-Basin. Recycled water production at IRWD's Michelson and Los Alisos Water Recycling Plants are primary supplies to IRWD's non-potable

distribution system. Table 4.14-2 presents the sources for IRWD potable and non-potable water in 2020.

Table 4.14-2
IRWD 2020 Water Supply

Water Supply	Additional Details	Actual Volume (AF)
Purchased or Imported Water	MWD	12,861
Purchased or Imported Water	MWD (SAC)	1,168
Surface water (not desalinated)	Irvine Lake	6,600
Groundwater (not desalinated)		37,990
Groundwater (not desalinated)	Non-Potable	4,437
Recycled Water	MWRP & LAWRP	24,627
TOTAL		87,683

SOURCE: IRWD 2020 Urban Water Management Plan, Table 6-8 Retail: Water Supplies — Actual

IRWD's water supply system includes imported water from MWDOC (16 percent of total), local groundwater and surface water supplies (56 percent of total), and recycled water (28 percent of total). The MWDOC is a wholesale importer and member agency of the Metropolitan Water District (MWD) and is entitled to receive water from the available sources of MWD, including Colorado River and Northern California surface water. IRWD also has contracts with Kern County to store up to 126,000 AF of groundwater storage and extract up to 28,750 AF per year during dry years.

Groundwater

The City and its sphere of influence are located within the Coastal Plain of Orange County groundwater basin, also known as Basin 8-1. Under the Sustainable Groundwater Management Act (SGMA), the Basin 8-1 is classified as a medium priority basin, due to heavy reliance on the Basin's groundwater as a source of water supply. The IRWD's local surface water supplies are the drainage tributary areas to the Irvine Lake and Harding Canyon Reservoir. On average, about 4,000 acre-feet per year (AFY) is captured for IRWD's demands. Water supplies available from the Harding Canyon are often limited due to dry weather conditions. Recycled water meets about 33 percent of IRWD's (non-potable; agricultural irrigation, landscape, golf course, commercial, and industrial uses) water demands. In 2020, approximately 24,626 AF of wastewater was recycled within the service area from the Michelson Water Recycling Plant (MWRP) and Los Alisos Water Recycling Plant (LAWRP). In the case there isn't sufficient supplies of treated wastewater for use from the MWRP and LAWRP, supplemental untreated imported water can be used.

IRWD operates the Peters Canyon Channel Water Capture and Reuse Pipeline Project which captures dry weather runoff from three storm drain diversion facilities prior to flows entering Peters Canyon Channel. The dry weather runoff is then delivered to Orange County Sanitation District (OCSD) for treatment and subsequent discharge to Orange County Water District's Groundwater Replenishment System for eventual groundwater recharge. There are currently no commitments for purchase of desalination water by IRWD.

Recycled Water

Water recycling is an essential part of IRWD's water supply portfolio, as it reduces the demand for high-quality potable drinking water. IRWD's recycled water program began with the focus of providing tertiary treated Title 22 recycled water to supply agricultural irrigation demands. Today, new developments must install dual plumbing that allows recycled water to be used for landscaping, toilets, and other uses not requiring potable water. IRWD recycled water meets the standards as set forth in Title 22, California Code of Regulations, for uses, including landscape irrigation, toilet flushing, cooling towers, industrial processes, composting, grading, and compaction.

IRWD maintains an extensive infrastructure system for recycled water. This includes a recycled water pipeline system that includes more than 500 miles of dual distribution pipelines. Water is recycled at the MWRP and LAWRP. The MWRP has a permitted tertiary treatment capacity of 28 million gallons per day (mgd) and recycles 90 percent of the plant's sewage inflow. To support the over 5,400 recycled water users, IRWD has 15 reservoirs with storage capacity of 4,536 acre-feet of recycled water.

Drinking Water Quality

IRWD strives to provide residents and business consumers with safe drinking water supplies. IRWD, OCWD, and the MWD conduct extensive testing for regulated and unregulated chemicals in their water supplies. OCWD manages the quality of the groundwater basin, MWD supplies imported treated surface water, and IRWD operates a surface water treatment plant and several ground water treatment plants.

Communities are required to adhere to stringent state regulations regarding primary and secondary drinking water standards. Primary standards are legally enforceable standards that are needed to protect public health. Secondary standards affect the color, appearance, and taste of drinking water, but are not health-related standards. Adherence to standards is measured in terms of maximum contaminant levels allowed in drinking water. Progress toward public health goals, as described below, is also required to be reported.

The EPA, the Office of Environmental Health Hazard Assessment, and the SWRCB Division of Drinking Water have set voluntary drinking water quality goals for some contaminants. The most common measure is public health goals. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. IRWD strives to meet public health goals, although state and federal law do not require adherence. IRWD produces an annual consumer confidence report that tracks the quality of the City's drinking water. IRWD continues to meet and/or exceed all primary and secondary drinking water standards that are required by state and federal law.

4.14.1.2 Sewer and Wastewater Infrastructure

a. Existing Sewer System

IRWD owns and operates a complex sewer collection system that stretches 963 miles to serve its current and future customers. The sewer system and drainage are defined by the physical geography of the San Diego Creek and Peters Canyon Channel. IRWD's service area is bounded on the northeast by the Santa Ana Mountains and on the south by the San Joaquin Hills. As a result of these dominant drainage features, IRWD's sewer system flows generally from northeast to southwest. The majority of the IRWD sewer system serves the City, although there are some additional service areas that fall outside the City, including portions of the Cities of Lake Forest, Newport Beach, Costa Mesa, and unincorporated areas of Orange County. A portion of wastewater generated in Newport Beach and the City is collected by trunk sewers owned, operated, and maintained by IRWD, then discharged into sewers owned and maintained by the OCSD.

As of 2018 there are 23 sewage lift stations and 12 are considered major facilities. IRWD operates and maintains 1,100 miles of sanitary sewer mains and 12 miles of force mains, spanning 181 square miles (84,000 acres) of service area in Orange County.

The system also includes 19 siphons that are used to convey wastewater flows under human-made and natural obstructions, and seven diversion structures to divert or split the upstream flows into two separate downstream pipelines. The collection consists primarily of vitrified clay pipe and polyvinyl chloride sewer mains that range from 4 to 60 inches, in addition to 32 trunk lines that are the most critical components of the sewer collection system. The ultimate destination of wastewater collected in IRWD's system include the MWRP, the Los Alisos WRP or treatment plants operated by the El Toro Water District, the Santa Margarita Water District, or the OCSD.

b. Existing Sewer Flows

Wastewater in the City travels through IRWD's collection system to the Michelson Water Reclamation Plant and Los Alisos Water Recycling Plant, where it is treated through the reclamation process for use in landscaping, agricultural irrigation, and other non-potable water uses. However, one part of the City, the Irvine Business Complex (IBC), is not within the IRWD collection system. The IBC is in the OCSD, tributary zone No. 7, and wastewater generated in the IBC flows to OCSD treatment facilities located in Fountain Valley and/or Huntington Beach.

Table 4.14-3 Existing Sewer and Wastewater Flows					
Wastewater Collection Agency	Volume Metered or Estimated?	Volume Collected (AF)	Receiving Agency	Treatment Plant	Located within IRWD Service Area?
IRWD[1]	Metered	22,575	IRWD	MWRP	Yes
IRWD	Metered	3,760	IRWD	LAWRP[2]	Yes
OCSD	Metered	7,568	OCSD	OCSD	Yes
IRWD	Estimated	112	SMWD	Chiquita Water Reclamation Plant	No
TOTAL		34,015			
SOURCE: IRWD 2020 Urban Water Management Plan – Table 6-2 Retail: Wastewater Collected Within Service Area in 2020 Includes 1.09 mgd from outside service area 7 (SA-7). Includes English Canyon flows (outside UWMP service area).					

Overall, the system is very highly managed and is in relatively "young health" by sewer system standards. In addition, when specific plans or major projects are processed (over 400 residential units or equivalent mixed-use projects with similar sewer demands), IRWD requires subarea master plans that identify projected water and sewer demands, required sewer and water infrastructure, and conformance with the sewer collection system master plan. This process enables IRWD to manage the sewer and water systems in a comprehensive manner.

4.14.1.3 Storm Drainage

a. Existing Drainage System

Figure 4.8-2 in Section 4.8.1.3 above presents the storm drain system within the City. The local storm drain system is owned by the City and maintained by the City's Public Works and Transportation Department. The regional flood control system is owned and maintained by the Orange County Public Works Department (OCPW). Lines typically range in size from 18 to 60 inches (with some up to 96 inches), with the local drainage system consisting of the smaller diameter pipes and the larger flood control facilities consisting of trapezoidal channels or riverine systems. Drainage facilities are typically either RCP pipe or box culverts to convey stormwater. Local storm drain facilities are designed to accommodate 25-year flow requirements, and the regional County facilities are designed to accommodate 100-year storm events. The City conveys stormwater to OCPW regional conveyance facilities and has an ongoing monitoring and maintenance procedure to ensure the overall system functions effectively. To prevent significant flooding during storm events, OCPW and the City monitors and maintains its respective channels and storm drain systems to ensure they are conveying storm flows as designed.

- In addition, the City currently requires individual drainage analyses for new development and redevelopment to ensure conformity with the entire Citywide drainage system. New development and significant redevelopment must analyze the 25-year storm event to determine if there are any impacts to the public storm drain system. The City is located entirely within the Santa Ana Regional Water Quality Control Board (RWQCB) jurisdictional

area. The watershed and water quality issues are generally discussed in more detail in Section 4.8.

4.14.1.4 Solid Waste

Transfer and recovery facilities are owned and operated by private entities and licensed and overseen by the state. The County maintains three closed landfills in Irvine. There is a total of 21 actively maintained and monitored landfills Countywide. The County operates compost facilities at all three existing landfills.

Residential, institutional, regional commercial, and industrial solid waste is presently collected by private firms, with residential and village commercial collections franchised by the City. OC Waste & Recycling manages three active landfills conveniently located in the northern, central and southern regions of the County: Olinda Alpha Landfill is located near the City of Brea, Frank R. Bowerman Landfill is located near the City of Irvine and the Prima Deshecha Landfill is located partially in a County unincorporated area, the City of San Juan Capistrano and the City of San Clemente (Orange County Waste and Recycling 2016). A solid waste transfer station exists within Planning Area 36 (Irvine Business Complex) (City of Irvine 2005).

a. Waste Diversion

In 1989, the State Legislature passed Assembly Bill 939 (AB 939), the Integrated Waste Management Act, which required cities and county to prepare, adopt, and submit a "source reduction and recycling element" to the County that characterizes waste disposal, source reduction, recycling, composting, solid waste capacity, education/public information, funding, special waste, and household hazardous waste to ensure sufficient solid waste disposal capacity. In addition, AB 939 mandated that by January 1, 2000, each city must achieve a waste diversion goal of 50 percent through source reduction, recycling, and composting activities. In October 2011, the Legislature passed AB 341, which increased the goal of diversion of waste from landfills from 50 percent to 75 percent by 2020. In addition, AB 341 requires mandatory commercial waste recycling. Further, AB 1826 requires that businesses and multifamily residences of five or more units that generate a specified amount of organic waste to arrange recycling services for organic waste.

Senate Bill 1383 (SB 1383)

SB 1383 is known as the Short-Lived Climate Pollutants bill and is designed to significantly reduce the amount of food, food soiled paper, and green waste going into landfills.

Zero Waste Resolution

The City adopted a resolution to support Zero Waste principles on July 10, 2007. The City encourages many Zero Waste practices through residential curbside recycling, parks recycling (where City parks are equipped with special recycling receptacles for public use), recycling at City facilities, and the City's purchasing policy to buy recycled products when feasible. In addition, all City environmental programs' public education materials include the State's adopted Slogan: "Zero Waste, You Make It Happen."

Construction and Demolition Debris Recycling Ordinance

The City adopted a Construction and Demolition Debris Recycling Ordinance (07-18) in 2007. Under this ordinance, projects are required to recycle or reuse 75 percent of concrete and asphalt, and at least 65 percent of all debris generated. Covered projects include new residential and nonresidential development and most projects involving nonresidential demolition and/or renovation in accordance with requirements of the California Green Building Standards Code. Applicants for projects are required to submit a waste management plan to the City prior to obtaining permits for construction, demolition, or renovation activities covered by the ordinance.

Sustainability Community Initiative

The City adopted the Sustainable Community Initiative (Initiative Ordinance 10-11) as Initiative Measure S in 2010. The ordinance was adopted to ratify and implement policies in support of renewable energy and environmental programs for a sustainable community. It outlines the City's direction for continuing to develop and implement programs geared toward green building, renewable energy, and sustainability. For example, the City would continue to develop and implement recycling, zero waste, or other innovative onsite business programs to divert waste from landfills and also continue to develop and implement the use of native, California-friendly, and drought-tolerant landscaping.

Existing General Plan (2000)

The City's existing general plan contains a chapter on integrated waste management. The stated goal is to encourage solid waste reduction through diversion of organic and recyclable material that would be otherwise landfilled without deteriorating the environment.

Integrated Waste Management Element

Objective H-1: Solid Waste: Cooperate in guiding the development and improvement of a solid waste disposal system within the County of Orange that will meet the needs of the City and protect the City from damage by unplanned disposal of refuse.

Policy (a): Use the General Plan land use categories and building intensity standards as a basis for estimating waste disposal requirements and program needs.

Policy (b): Encourage continued study of alternative waste disposal methods and technology with emphasis on reuse of solid waste materials and on waste-to-energy.

Policy (c): Develop all waste disposal programs in cooperation with landowners, the county, and other jurisdictional and regulatory agencies.

Policy (d): Work closely with the operator(s) of existing landfill sites to minimize deleterious effects on surrounding land uses including possible.

4.14.1.5 Electricity, Natural Gas, and Telecommunications Facilities

Electricity and Natural Gas

Electricity is provided to the City by the Orange County Power Authority and is accessed by customers via Southern California Edison's (SCE) infrastructure. SCE is one of the nation's largest electric utilities providing electricity service to more than 50 million people in a 50,000-square-mile area of central, coastal, and Southern California. SCE's total mid-electricity consumption in SCE's service area was 2,102 gigawatt-hour (GWh) in 2024 and is forecast to increase to 2,541 GWh in 2035 (the year furthest out for which there is data available). Therefore, the total mid-electricity consumption in SCE's service area is forecast to increase by approximately 439 GWh between 2024 and 2035 (CEC 2022).

Community Choice Energy

The passage of AB 117 in 2002 established Community Choice Aggregation in California allowing municipalities at the local and county levels to form independent, locally-governed and not-for-profit energy providers. Community Choice Energy (CCE) programs enable local government control over energy procurement to purchase power, set competitive rates, and collect revenue. Customers have the option of choosing increased percentages of renewable energy. CCE programs in California generally procure and resell a power mix between 50 percent and 100 percent renewable energy to their customers.

The Orange County Power Authority (OCPA) was established in 2021. On February 8, 2022, the Irvine City Council unanimously voted to select the 100% Renewable Energy default service level for all Orange County Power Authority customers in Irvine. The OCPA began providing commercial and municipal service in April 2022, followed by residential service in October 2022. OCPA purchases energy from clean, renewable sources including solar, wind, biomass, geothermal and hydroelectric. 100 percent renewable energy is the default tier for customers unless they choose a lower tier or opt out and remain with SCE.

Natural Gas

Irvine's natural gas is provided by the Southern California Gas Company (SoCalGas). SoCalGas service area includes most of southern California, from Imperial County on the southeast to San Luis Obispo County on the northwest, to part of Fresno County on the north, to Riverside County and most of San Bernardino County on the east. Total natural gas supplies available to SoCalGas in the year 2022 is estimated at 2,416 million cubic feet per day.

Telecommunications

Internet, phone, and satellite television services are currently provided by a variety of private sources, including AT&T, Time Warner Cable, Spectrum, Verizon, and more.

4.14.2 Applicable Regulatory Requirements

4.14.2.1 Federal

a. Clean Water Act

Originally enacted in 1948 and amended in 1972 and 1987, the Clean Water Act (CWA) establishes two national goals: eliminate the discharge of pollutants into the nation's waters and achieve water quality that is both "fishable" and "swimmable". Discharge of pollutants into waters of the United States from any "point source" (i.e., a discharge pipe) is prohibited, unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. The 1987 amendments direct the U.S. Environmental Protection Agency (U.S. EPA) to establish a permitting framework under the NPDES program to address stormwater discharges associated with urban areas and certain industrial activities.

b. Federal NPDES Permit Program

Section 402 of the CWA prohibits the discharge of pollutants in waters of the United States from any point source without an NPDES permit. Results of the Nationwide Urban Runoff Program also identified contaminated stormwater (a non-point source) as a primary cause of water quality impairment. To regulate stormwater discharges, the EPA developed a two-phased NPDES permit program. Phase I of the program requires municipalities which own and operate separate storm drains systems serving populations of 100,000 or more to obtain municipal stormwater NPDES permits. Municipalities must have a stormwater management program to obtain a permit.

c. Energy Independence and Security Act of 2007

The Energy Independence and Security Act was signed into law in December 2007 and is an energy policy law that contains provisions designed to increase energy efficiency and the availability of renewable energy. This act contains provisions for increasing fuel economy standards for cars and light trucks, while establishing new minimum efficiency standards for lighting as well as residential and commercial appliance equipment.

d. Energy Policy Act of 2005

The Energy Policy Act was passed in July 2005 and includes a comprehensive set of provisions to address energy issues. Energy Policy Act includes tax incentives for the following: energy conservation improvements in commercial and residential buildings; fossil fuel production and clean coal facilities; and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

e. National Energy Policy

The National Energy Policy was established in 2001 by the National Energy Policy Development Group, this policy is designed to help the private sector and state and local governments promote

dependable, affordable, and environmentally sound production and distribution of energy for the future. Key issues addressed by the energy policy are energy conservation, repair, and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

4.14.2.2 State

a. Urban Water Management Planning Act

The Urban Water Management Planning Act of 1983, California Water Code Sections 10610 et seq., requires preparation of a plan that:

- Plans for water supply and assesses reliability of each source of water, over a 20-year period, in five-year increments.
- Identifies and quantifies adequate water supplies, including recycled water, for existing and future demands, in normal, single-dry, and multiple-dry years.
- Implements conservation and the efficient use of urban water supplies. Significant new requirements for quantified demand reductions have been added by the Water Conservation Act of 2009 (Senate Bill 7 of Special Extended Session 7 [SBX7-7]), which amends the act and adds new water conservation provisions to the California Water Code.

b. California Water Plan

The California Water Plan is the state's strategic plan for managing and developing water resources statewide for current and future generations, as required by the California Water Code. The plan is updated every five years.

c. Water Quality Control Plan for Ocean Waters of California (Ocean Plan)

Created by the State Water Resources Control Board (SWRCB) in 1972 and amended in 1997, the Ocean Plan aims to protect ocean water quality for use by residents of the state. The provisions apply to both point source and non-point source discharges and establishes water quality objectives and effluent limitations for all bordering oceans of the state.

d. The Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, the SWRCB is given the ultimate authority of state water rights and water quality policy. It also establishes nine RWQCBs. The entire City is in the jurisdictional area of the Santa Ana RWQCB.

e. The California Coastal Non-Point Pollution Control Program

The 1990 Coastal Zone Act Reauthorization Amendments (CZARA) require states with coastal zones to develop and implement Coastal Non-point Pollution Control Programs so that states and local authorities will work together to control non-point source pollution. CZARA provides guidance on

required management measures to address various sources of non-point source pollution, including certain urban runoff but excluding discharges regulated by NPDES permits. CZARA requirements also apply to stormwater discharges that are not regulated under the current Phase I NPDES program.

f. California NPDES Permit Programs

The U.S. EPA has delegated administration of the NPDES permit program to the SWRCB and its nine Regional Boards.

g. California Senate Bill 1087: Sewer and Water Service Priority for Housing Affordable to Lower-Income Households (2006)

This statute requires local governments to provide a copy of the updated housing element to water and sewer providers immediately after adoption. Water and sewer providers must grant priority for service allocation to proposed development that includes housing units affordable to lower-income households. Additionally, urban water management plans (UWMPs) are required to include projected water use for future lower-income households.

h. California State Senate Bill 221 and Senate Bill 610 (January 2002)

Senate Bill (SB) 610 requires water suppliers to prepare a Water Supply Assessment (WSA) report for inclusion by land use agencies within the California Environmental Quality Act (CEQA) process for new developments. SB 221 requires water suppliers to prepare written verification that sufficient water supplies are planned to be available prior to approval of large-scale subdivisions. As defined in SB 221 and SB 610, large-scale projects include residential development projects that include more than 500 residential units and/or shopping centers or business establishments resulting in a net increase of more than 1,000 employees or more than 500,000 square feet of floor space.

i. 2006 Waste Discharge Requirements Order

The SWRCB adopted Statewide General Waste Discharge Requirements for Sewer Systems (Order No. 2006-0003-DWQ). The intent of the order is to regulate all collections systems in the state to reduce or eliminate the number of sanitary sewer overflows, which by their nature, pollute the environment. A sanitary sewer overflow is any overflow, spill, release, discharge, or diversion of wastewater from a sewer system. The order is applicable for all publicly owned sewage collection systems with more than one mile of sewer pipe.

j. California Integrated Waste Management Act of 1989 (as amended by AB 341)

Originally, the Integrated Waste Management Plan mandated to divert 25 percent of their solid waste by 1995 and 50 percent by 2000. AB 341 amended these requirements as follows: (1) CalRecycle to issue a report to the Legislature that includes strategies and recommendations that would enable the state to divert 75 percent of the solid waste generated in the state from disposal by January 1, 2020; (2) requires businesses that meet specified thresholds in the bill to arrange for recycling services by January 1, 2012; (3) streamlines the amendment process for non-disposal facility elements,

by allowing changes without review and comment from a local task force; and (4) allows a solid waste facility to modify their existing permit, instead of having to undergo a permit revision, under specified circumstances.

k. California AB 3232

Signed into law in September 2018, California AB 3232 calls on the California Energy Commission (CEC) (working in consultation with the California Public Utilities Commission [CPUC]) and other state agencies) to develop and articulate plans and projections, by year 2021, to reduce GHG emissions of California's residential and commercial buildings to 40 percent below 1990 levels by 2030. Much of the reduction will likely occur by replacing some buildings' gas end-use applications with electric ones.

l. California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in 1977. Title 24 requires the design of buildings to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

The 2022 Building Energy Efficiency Standards (Energy Code) encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code. The 2022 Energy Code also introduced new requirements for low-rise multi-family buildings. These include requirements to register low-rise multi-family compliance documents with a CEC-approved residential data registry when field verification and diagnostic testing will be required to demonstrate compliance with the Energy Code.

m. Appliance Efficiency Regulations

California's Appliance Efficiency Regulations (California Code of Regulations [CCR] Title 20, Parts 1600–1608) contain energy performance, energy design, water performance, and water design standards for appliances that are sold or offered for sale in California. These standards are updated regularly to allow consideration of new energy efficiency technologies and methods.

n. Title 24 Code Cycles: Net-Zero Buildings (Residential & Non-Residential)

The California Public Utilities Commission adopted its Long-Term Energy Efficiency Strategic Plan on September 18, 2008, presenting a roadmap for all new residential and commercial construction to achieve a zero-net energy standard. This Plan outlines the goal of reaching zero net energy in residential construction by 2020 and in commercial construction by 2030. Achieving this goal will require increased stringency in each code cycle of California's Energy Code (Title 24).

o. Governor's Green Building Executive Order (S-20-04)

On December 14, 2004, California's governor signed Executive Order S-20-04, creating a Green Building Action Plan to improve the energy performance of all state buildings. In general, the Executive Order required increased investments in energy efficiency for state-owned buildings and encouraged cities, counties and private businesses to reduce their energy use. Governor Schwarzenegger stated a goal of reducing electricity used in existing government and private commercial buildings by 10 percent per square foot by 2010 and 20 percent per square foot by 2015. He also mandated that all new and renovated buildings paid for with state funds be certified as Leadership in Energy and Environmental Design ("LEED") Silver standard or higher, and that office spaces and office equipment leased or purchased by the state be ENERGY STAR-qualified where cost-effective.

4.14.2.3 Local

a. Irvine Ranch Water District Water Use Efficiency and Conservation Policies

IRWD's published water conservation policies, practices, and procedures in 2018 to provide long-term water reliability for existing and future customers. IRWD water conservation policies include the following:

1. IRWD is committed to "Making Water Conservation a California Way of Life."
2. An integrated and sustainable approach to California water resource management must recognize the role that water use efficiency and supply development play in ensuring an adequate and reliable water supply for California's many diverse communities.
3. Water efficiency and conservation programs are most successful if they are locally designed, implemented and managed.
4. Water use efficiency and conservation programs should be cost effective and economically viable.
5. Local agencies should take steps to preserve fiscal stability and water affordability when implementing water use efficiency and conservation programs.
6. The benefits and consequences of statewide, regional, and local water use efficiency and conservation policies should be understood prior to being implemented. At a minimum, the benefits and consequences to water and wastewater management, systems, infrastructure, operations, and recycled water supplies should be examined.
7. Statewide and regional policies should encourage and reward previous investments in beneficial water use efficiency strategies, including water recycling, water-budget based rate structures that create a nexus between those overusing water and those bearing the costs of overuse, and investments in distribution system integrity, among others.
8. Statewide and regional water use efficiency goals must incentivize and account for local investments in drought resilient supplies, including investments in recycled water and potable reuse.
9. Conservation strategies should include promoting both the expansion and efficient use of recycled water and potable reuse.

10. State agencies should engage urban retail water suppliers during implementation and development of methodologies, and regulations related to "Making Water Conservation a California Way of Life."

b. Municipal Code

The City's Municipal Code Ordinance 21-19 , § 3(Exh. A), 12-14-21 provides standards for the provision of solid waste (refuse) and recyclable material storage areas in compliance with state law (California Solid Waste Reuse and Recycling Access Act, Public Resources Code Sections 42900 through 42911). Additionally, the City's Building Code requires development projects to complete and submit a Waste Management and Recycling Plan for approval prior to issuance of building permits. The Waste Management and Recycling Plan would identify the project type and estimate the amount of materials to be recycled during construction. The following provisions in the Municipal Code apply to future development resulting from implementation of the project:

Title 5 (Planning), Division 7 (Sustainability in Landscaping)

The purpose of this division is to provide policies, standards, procedures, and guidelines to achieve long-term levels of sustainability in landscapes. Sustainability is a concept which emphasizes the environmental impacts and benefits of landscapes. In most instances, a sustainable landscape is one which provides positive levels of carbon storage and oxygen productivity after all demands for energy, water, soil improvement and maintenance activities to support have been considered. This division is intended to promote actions that conserve, recycle, and reuse the resources which are invested in landscapes.

Title 6 (Public Works & Transportation: Project Delivery & Sustainability), Division 7 (Solid Waste; Organic Waste Diversion; Construction and Demolition Waste) – Chapter 10 (Recycling and Diversion of Construction and Demolition Waste)

Municipal Code (Title 6, Division 7 – Chapter 10) and the California Green Building Standards Code ("CALGreen" Sections 4.408, 5.408, and 5.713.8) require that construction development, renovation, and demolition projects recycle or otherwise divert construction and demolition debris from landfills. These requirements promote the reuse of resources and help extend the useful life of landfills in compliance with the CALGreen Code and state laws including the California Integrated Waste Management Act (AB939, Sher) and Mandatory Construction and Demolition Waste Diversion (SB1374, Kuehl).

Title 5 (Planning), Division 9 (Building Regulations), Chapter 1 (Adoption of Building and Fire Code) Building and Energy Efficiency Standards (California Code of Regulations Title 24)

Prior to the issuance of a building permit for residential, commercial, or office structures in the Irvine Business Complex, development plans for these structures shall be required to demonstrate that the project meets the current Building and Energy Efficiency Standards, as adopted and amended by the City. Commonly known as Title 24, these standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Plans submitted for building permits shall include written notes demonstrating compliance with the current energy standards and shall be reviewed and approved by the Public Utilities Department prior to issuance

of building permits. Design strategies to meet this standard may include maximizing solar orientation for daylighting and passive heating/cooling, installing appropriate shading devices and landscaping, utilizing natural ventilation, and installing cool roofs. Other techniques include installing insulation (high R value) and radiant heat barriers, low-e window glazing, or double-paned windows.

d. Zoning Ordinance

The following provisions in the Zoning Ordinance would apply to future development resulting from implementation of the project:

Chapter 3-23 (Solid Waste Collection Standards)

This chapter of the Zoning Ordinance outlines the solid waste collection standards that apply to all residential and nonresidential developments. This chapter includes standards for collecting and loading recyclable materials in development projects as specified below pursuant to the California Solid Waste Refuse and Recycling Access Act of 1991 (AB 1327).

Chapter 3-31 (Solar Energy System Standards)

This chapter encourages investment in solar energy systems on all parcels in the City, both residential and nonresidential, while providing guidelines for the installation of those systems that are consistent with the architectural and building standards of the City. All solar energy systems shall comply with all applicable provisions of the City Codes and the standards of this chapter.

Chapter 5-8 (Irvine Business Complex Residential Mixed-Use Overlay District)

As outlined in Section 5-8-4.A.7 (Green-Point Rated Development) of Chapter 5- 8, applicants for new residential development in the IBC are required to submit evidence to the satisfaction of the Director of Community Development that proposed buildings have been designed and constructed to be Green-Point Rated.

Chapter 9-36 (Planning Area 36-Irvine Business Complex)

Section 9-36-20 (Environmental Standards) of Chapter 9-36 outlines the environmental standards that are applicable to new development projects in the IBC. Provisions include the following:

- Requirement that construction contractors provide alternative transportation mode incentives, such as bus passes, and/or carpooling for workers to and from the worksite on days that construction activities require 200 or more workers.
- Submittal of evidence that the project uses recycled materials for at least 20 percent of construction materials.
- Submittal of evidence that toilets, urinals, sinks, showers, and other water fixtures installed onsite are ultra-low-flow fixtures that exceed the Uniform Building Code.
- Submittal of evidence that the projects' landscape irrigation system is an automated, high-efficient irrigation system that reduces water waste.
- Requirement to use reclaimed water on all master landscaped areas.

- Requirement for the provision of onsite recycling facilities on all new developments as required by the Director of Public Works and Transportation.
- Submittal of evidence for new non-residential developments that proposed buildings are designed and constructed to achieve the "Designed to Earn the Energy Star" rating.

e. Construction and Demolition (C&D) Debris Recycling and Reuse Ordinance

The C&D ordinance requires that (1) all residential projects of more than one unit, (2) nonresidential developments on 5,000 square feet or larger, and (3) nonresidential demolition/renovations with more than 10,000 square feet of building recycle or reuse a minimum of 75 percent of concrete and asphalt and 50 percent of nonhazardous debris generated.

f. Irvine Sustainability Community Initiative

The Irvine Sustainability Community Initiative (Initiative Ordinance 10-11), adopted by the voters of the City as Initiative Measure S on November 2, 2010, and certified by the City Council on December 14, 2010, became effective December 24, 2010. The ordinance was adopted to ratify and implement policies in support of renewable energy and environmental programs for a sustainable community. It outlines the City's direction for continuing to develop and implement programs geared towards green building, renewable energy and sustainability. For example, the City would continue to develop and implement recycling, zero waste or other innovative onsite business programs to divert waste from landfills and also continue to develop and implement the use of native, California-friendly and drought-tolerant landscaping.

g. Requirement to Use Recycled Water

IRWD will identify customers in a zone identified in the Plan ("the Plan" collectively refers to the Water Resources Master Plan, Sewer Master Plan, Natural Treatment System Master Plan, and addenda thereto) as an area capable of receiving service from the IRWD's recycled water system, and will determine the feasibility of providing recycled water service to these customers. IRWD will also review applications for new permits to determine the feasibility of providing recycled water service to these applicants. If recycled water service is determined by IRWD to be feasible, applicants for new water service shall be required to install on-site facilities to accommodate both potable water and recycled water service in accordance with these Rules and Regulations. IRWD may also require existing customers to retrofit existing on-site water service facilities to accommodate recycled water service. If IRWD does not require the use of recycled water service, the customer may obtain recycled water service upon request but only if IRWD has determined that recycled water service to the customer is feasible and authorizes such use.

h. Planning Commission Resolution No. 09-2968

Standard Conditions are adopted by Planning Commission Resolution No. 09-2968. These conditions assist staff in applying standardized wording for frequently used conditions of approval to discretionary and subdivision applications. Standard conditions are applied on a case-by-case basis depending upon the specifics of the application. Companion conditions are cross-referenced and are required to be used together. The following standard conditions related to utilities apply:

City Standard Condition 2.24 (Solid Waste Recycling)

Prior to the issuance of grading permits for a project that involves the demolition of an asphalt or concrete parking lot on site, the applicant shall submit a waste management plan demonstrating compliance with the requirements of Title 6, Division 7 of the Municipal Code relating to recycling and diversion of demolition waste as applicable to said project. Over the course of demolition or construction, the applicant shall ensure compliance with all code requirements related to the use of City authorized waste haulers.

City Standard Condition 3.7 (Solid Waste Recycling)

Prior to the issuance of building permits for a project that involves new construction or that involves the demolition or renovation of existing buildings on site, the applicant shall comply with requirements of Title 6, Division 7 of the Municipal Code relating to recycling and diversion of construction and demolition waste as applicable to said project. Over the course of demolition or construction, the applicant shall ensure compliance with all code requirements related to the use of City authorized waste haulers.

i. Existing Plans, Programs, and Policies Compliance measures are regulations imposed uniformly by the approving agency based on the proposed action taken and are required of the proposed project to reduce its potential environmental effects. Because these features are standard requirements, they do not constitute mitigation measures. The following measures are existing plans, programs, or policies (PPP) that apply to the proposed project and will help to reduce and avoid potential impacts related to utilities:

- PPP-UTIL-1 Engineering Standard Plans
- PPP-UTIL-2 Title 24 Code Cycles: Net-Zero Buildings (Residential & Non-Residential)
- PPP-UTIL-3 Irvine Sustainability Community Initiative
- PPP-UTIL-4 California Water Code Section 10912 and California Government Code Section 66473.7
- PPP-UTIL-5 Senate Bill 221 (SB 221)
- PPP-UTIL-6 Requirement to Use Recycled Water
- PPP-UTIL-7 City of Irvine Construction and Demolition (C&D) Debris Recycling and Reuse Ordinance
- PPP-UTIL-8 Waste Reduction
- PPP-UTIL-9 City Standard Condition 2.24 (Solid Waste Recycling)
- PPP-UTIL-10 City Standard Condition 3.7 (Solid Waste Recycling)

If a proposed development is considered a project as defined by California Water Code Section 10912 and/or a subdivision as defined by California Government Code Section 66473.7, then a water supply assessment shall be prepared and included in the analysis and appendices of the environmental document being prepared for the project.

General Plan Update

In addition to the above-listed PPPs, the following proposed Goals, Objectives, Policies, and Implementation Actions are applicable to the analysis of utilities and would replace existing goals, strategies, and policies outlined in the City's existing General Plan following project approval:

Environmental Protection and Climate Action Element

Goal 3: Reduce greenhouse gas emissions and mitigate climate change impacts in Irvine to create a more sustainable and resilient community.

- Policy (a): Promote the transition to renewable energy sources, such as solar, wind, and geothermal, for electricity generation within Irvine.

Goal 5: Protect and enhance water quality in Irvine through policy implementation and measures to prevent pollution, conserve water resources, and ensure access to safe and clean water.

Objective EPCA-5: Achieve and maintain compliance with water quality standards set by regulatory agencies, such as the Environmental Protection Agency (EPA) and the California State Water Resources Control Board (SWRCD), to safeguard public health and the environment.

- Policy (a): Implement measures to prevent and control pollution from various sources, including industrial discharges, stormwater runoff, agricultural activities, and wastewater treatment plants.

- Policy (c): Implement green infrastructure projects, such as rain gardens, bioswales, and permeable pavement, to manage stormwater runoff and reduce nonpoint source pollution.

- Policy (d): Promote water conservation practices and sustainable water use behaviors among residents, businesses, and municipal operations to reduce water consumption and minimize strain on water resources.

- Policy (e): Implement water-efficient landscaping standards, irrigation technology upgrades, and leak detection programs to optimize water use and reduce wastage.

Goal 6: Reduce energy consumption and promote energy efficiency in Irvine.

Objective EPCA-6: Achieve significant reductions in per capita energy consumption across residential, commercial, and municipal sectors while promoting the adoption of renewable energy sources and energy-efficient technologies.

- Policy (a): Through the efforts of CALGreen, establish and enforce energy efficiency standards and building codes for new construction and major renovations to improve the energy performance of buildings and reduce energy demand.

- Policy (b): Require energy-efficient building design, insulation, HVAC systems, lighting, and appliances to minimize energy consumption and lower utility costs for residents and businesses.

- **Policy (c):** Promote the adoption of renewable energy systems, such as solar photovoltaic (PV) panels, wind turbines, and geothermal heat pumps, to generate clean and sustainable electricity for onsite consumption or grid injection.

Goal 7: Minimize waste generation, promote sustainable waste management practices, and maximize resource recovery in Irvine.

Objective EPCA-7: Achieve significant reductions in per capita waste generation and increase diversion rates through comprehensive waste reduction, reuse, recycling, and composting initiatives, while minimizing landfill disposal and associated greenhouse gas emissions.

- **Policy (d)**: Cooperate in guiding the development and improvement of a solid waste disposal system within the County of Orange that will meet the needs of the City and protect the City from damage by unplanned disposal of refuse.

- **Policy (e)**: Control the siting of solid waste disposal facilities to minimize impact on adjacent or existing planned land uses.

Goal 10: Promote sustainable land use practices in Irvine.

Objective EPCA-10: Implement policies and initiatives that prioritize sustainable land management, smart growth principles, and equitable development strategies to ensure the efficient use of land while protecting environmental quality and promoting community well-being.

- **Policy (c)**: Integrate green infrastructure elements, such as parks, greenways, and open spaces, into land use planning and development projects to manage stormwater runoff, improve air and water quality, and enhance ecological connectivity and biodiversity.

Conservation and Open Space Element

Goal 10. Enhanced open space accessibility and utilization, and conservation efforts of resources.

Objective COS-10: The City commits to creating and fostering well-integrated and sustainable open space resources available to City residents and visitors.

- **Policy (i):** Coordinate conservation of water resources in alignment with Environmental Protection and Climate Action Elements objectives and policies to encourage the integration of existing and future water sources (reservoirs, lakes, and drainage courses) into development.

4.14.3 Significance Determination Thresholds

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for utilities and service systems. Thus, an initial study should consider whether a project will:

1) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, natural gas, or telecommunications

facilities, the construction or relocation of which could cause significant environmental effects;

2) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;

3) 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;

4) 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; or

5) Comply with federal, state, or local management and reduction statutes and regulations related to solid waste.

4.14.4 Methodology

Impacts associated with utilities have been assessed through consideration of existing utility infrastructure within the City and whether the expansion of existing utility infrastructure would be necessary to serve these developments. The potential for significant impacts to occur associated with such utilities as water, storm drainage, and water quality has been determined based upon the analysis presented in Appendix I and summarized here. Other topics not covered by the Appendix I report, such as solid waste and natural gas, energy, and telecommunications facilities, has been assessed at the City-wide level using publicly available data and City reports to address whether the anticipated buildout of the project would increase demands on this utility to warrant an expansion or construction of new infrastructure which would cause a significant impact to the environment.

4.14.5 Topic 1: Utility Infrastructure

Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

4.14.5.1 Impact Analysis

a. Water

Implementation of the project has the potential to increase water demand over existing conditions by approximately 2,093 AFY. As described in greater detail in Section 4.14.6.1 below, IRWD is projected to have a water supply capacity of 178,727 AFY through 2040, which far exceeds IRWD's project water supply demand of 88,023 AFY through 2040. Consequently, IRWD would have a water supply surplus of 90,704 AFY through 2040, which would exceed the project's projected increase in water demand of 2,093 AFY.

While the total project-related water demand would be within IRWD's capacity to serve the project, implementation of the future projects facilitated by approval of the project would require construction of new water infrastructure where existing water lines are not sufficient to accommodate the increased water demand. These determinations would be made on a project-by-project basis, including site-specific fire flow tests and hydraulic pressure analyses as projects are developed. The proposed improvements may include upsizing water lines on-site and off-site and additions of boosters in low pressure areas. In those conditions, where hydraulic or capacity impacts affect other service areas within the Improvement District, the developer would be responsible for paying for the impacts through their connection fees (see Appendix I). Furthermore, because the City's UWMP is required to include projected water use by land use type (i.e., accommodate the new General Plan land uses), the City's 2025 UWMP would be required to incorporate the proposed land use changes into their water demand and supply projections out to 2050.

The construction of the on-site and off-site water lines and associated improvements would primarily include trenching for the pipelines. Future infrastructure improvement would be subject to the requirements of the City's engineering standard plans (PPP UTIL-1), and all construction would be performed in accordance with the Construction General Permit and all associated requirements. Any work that may affect services to the existing water lines would be coordinated with the City and IRWD. When considering impacts resulting from the installation of any required water infrastructure, all impacts are of a relatively short-term duration and would cease to occur once the installation is complete. Therefore, impacts associated with construction of new or expanded water facilities would be less than significant.

b. Wastewater

Implementation of the proposed project has the potential to increase sewer flows by approximately 2.04 mgd. As described in greater detail in Section 4.14.7.1 below, this increase falls within the remaining treatment capacity of the MWRP, which has an existing surplus treatment capacity of 28 mgd. Furthermore, the capacity expansion of MWRP through projects like the Phase 2 Expansion in 2014, which added 7 mgd, has ensured that the plant can accommodate additional demand. Additionally, OCSD's Plant No. 1, with a treatment capacity of 320 mgd, remains capable of accommodating the projected increase in sewer flows.

Implementation of the project would likely require construction of new sewer infrastructure where existing sewer lines are not sufficient to accommodate the increased flows. The locations of these sewer improvements would be based on the project-specific locations. These determinations would be made on a project-by-project basis, including site specific sewer flow monitoring and hydraulic sewer analysis. All project applicants would be required to submit detailed information to IRWD regarding product type, size, number of units or square feet, projected demands (indoor and outdoor), and other project details, so impacts on the existing sewer system could be managed properly. In those conditions, where hydraulic or capacity impacts affect other service areas or users within the Improvement District, the developer would be responsible for paying for the impacts through their connection fees. When capital projects are identified for regional sewer improvements within the Improvement District, the costs are shared 50/50 between developer connection fees and existing users through property tax assessments. Furthermore, on a citywide scale, the City's Capital

Improvement Program (CIP) would identify and prioritize necessary projects as developments under the project come online (see Appendix I).

The construction of the on-site and off-site sewer lines and associated improvements would primarily include trenching for the pipelines. All construction would be required to be performed in accordance with the Construction General Permit and all associated requirements. Any work that may affect services to the existing sewer lines would be coordinated with the City and IRWD. IRWD also has Sewer Improvement Districts which allows the District to assess improvements per Improvement Area and collect fees accordingly. This process ensures that the fees collected are consistent with the improvements needed within the respective District being improved. Furthermore, future infrastructure improvements would also be subject to the requirements of the City's engineering standard plans (PPP UTIL-1), which would ensure that all improvements comply to the City's standard requirements for infrastructure improvements. Therefore, impacts associated with construction of new or expanded wastewater facilities would be less than significant.

c. Stormwater

As described in Appendix I, most of the development under the project would consist of infill vacant lots (new development) or redevelopment of existing non-residential properties into high density residential, particularly within the three focus areas. In both circumstances, the surrounding area has already been developed and the primary public storm drain system and points of connection are set in place. Implementation of the proposed land uses would rely on the existing drainage systems to convey runoff. Current runoff is captured and conveyed by existing City or County storm drain infrastructure throughout the City before discharging to regional County flood control facilities and channels. From there, the runoff is ultimately discharged into the Newport Bay. The City is primarily built out, and no major changes in storm flows are anticipated. As noted previously, the City and the County have policies in-place associated with the MS4 Permit that would require design and installation of detention systems to mitigate peak flows for certain development projects, and/or if downstream drainage facilities ever become deficient (see Appendix I). Future infrastructure improvement would be subject to the requirements of the City's engineering standard plans (PPP UTIL-1), and all construction would be performed in accordance with the Construction General Permit and all associated requirements. All impacts would be short-term and would cease to occur once the installation is complete. Therefore, impacts associated with construction of new or expanded stormwater facilities would be less than significant.

d. Electric Power, Natural Gas, and Telecommunications

Future development under the project would increase demand for electric, natural gas transmission, and telecommunication services. However, future development would occur incrementally through 2045, based on market conditions and other factors, such that demand for these utility services would not be overburdened at any given time. Additionally, future development under the project would accommodate increases in population based on SCAG's demographic projections. Therefore, the project would accommodate planned growth, and would not exceed regionally forecasted demand for electric power by SCE and OCPA or natural gas for SoCalGas. Furthermore, future development under the project would connect to the existing telecommunications infrastructure (telephone, internet, wireless services) present within the City.

Construction of the necessary improvements and/or extensions creates the potential for additional impacts such as dust, air emissions, and noise. Impacts associated with the construction of these facilities are found throughout the PEIR in the analysis of impacts to such topics as air quality and noise. Any applicable mitigation measures and PPPs identified in those sections would address potential significant impacts associated with construction of telecommunications infrastructure.

Additionally, the City currently implements strategies to reduce energy consumption through compliance with the Title 24 Code Cycles: Net-Zero Buildings (Residential & Non-Residential) (PPP UTIL-2) and the Irvine Sustainability Community Initiative (PPP UTIL-3). Future development under the project would also comply with these requirements. Future infrastructure improvement would be subject to the requirements of the City's engineering standard plans (PPP UTIL-1), and all construction would be performed in accordance with the General Construction Permit and all associated requirements. All impacts would be short-term and would cease to occur once the installation is complete. Therefore, impacts associated with construction of new or expanded electric power, natural gas, and telecommunications facilities would be less than significant.

4.14.5.2 Significance of Impacts

Overall, project related demands for water, wastewater, electric, natural gas, and telecommunications facilities would be within the service capacity for each service provider. All infrastructure improvements would be required to comply with applicable City regulations, including PPPs UTIL-1 related to compliance with engineering standard plans; UTIL-2 and UTIL-3 related to energy usage; and PPPs UTIL-3, UTIL-5, and UTIL-6 related to water reduction. Therefore, impacts related to the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects, would be less than significant.

4.14.5.3 Mitigation

Impacts would be less than significant. No mitigation is required.

4.14.6 Topic 2: Water Supply

Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

4.14.6.1 Impact Analysis

As described in Section 4.14.5.1a above, implementation of the project would have the potential to increase water demand over existing conditions by approximately 2,093 AFY. However, Appendix I determined that IRWD is projected to have a water supply capacity of 178,727 AFY through 2040, which far exceeds IRWD's project water supply demand of 88,023 AFY through 2040. Consequently, IRWD would have a water supply surplus of 90,704 AFY through 2040, which would exceed the project's projected increase in water demand of 2,093 AFY. Furthermore, future development under the project would comply with the requirements to prepare a water supply assessment as applicable (PPP UTIL-4 and PPP UTIL-5) and utilize recycled water (PPP UTIL-6) as applicable. Additional goals,

objectives, and policies in the updated Conservation and Open Space and Environmental Protection and Climate Action Elements would further the City's goal of reducing water demand on a citywide basis. Therefore, sufficient water supplies would be available to serve the project, and impacts would be less than significant.

4.14.6.2 Significance of Impacts

Project-related increase in water demand would be within the available supply capacity of IRWD. However, the project would be required to comply with City regulations pertaining to water suppl and usage (PPPs UTIL-4, UTIL-5, and UTIL-6), which would further reduce potential water supply demands. Therefore, impacts would be less than significant. No mitigation is required.

4.14.6.3 Mitigation

Impacts would be less than significant. No mitigation is required.

4.14.7 Topic 3: Wastewater Treatment

Would the project 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?

4.14.7.1 Impact Analysis

Wastewater for the City is treated at the MWRP, which is operated by IRWD. MWRP has an existing surplus treatment capacity of 28 mgd. Buildout of the project is anticipated to increase sewer flows by approximately 2.04 mgd, which is well within the remaining treatment capacity of the MWRP. Additionally, the capacity expansion of MWRP through projects like the Phase 2 Expansion in 2014, which added 7 mgd, has ensured that the plant can accommodate additional demand. The MWRP currently operates at an average of 25 mgd, recycling about 9 billion gallons of water annually. OCSD's Plant No. 1, with a treatment capacity of 320 mgd, also remains capable of accommodating the projected increase in sewer flows (see Appendix I). Therefore, the project would not exceed existing wastewater treatment capacity, and impacts would be less than significant.

4.14.7.2 Significance of Impacts

Project-related increase in wastewater would be within the capacity of the MWRP. Therefore, impacts related to inadequate capacity of a wastewater treatment provider to serve the project would be less than significant.

4.14.7.3 Mitigation

Impacts would be less than significant. No mitigation is required.

4.14.8 Topics 4 and 5: Solid Waste

Would the project 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?

Would the project comply with federal, state, or local management and reduction statutes and regulations related to solid waste?

4.14.8.1 Impact Analysis

Commercial solid waste generated within the City is disposed of at the Frank R. Bowerman Landfill, which has permitted for 11,500 tons per day (TPD) maximum with an 8,500 TPD annual average. The landfill has enough projected capacity to serve businesses until approximately 2053 (OC Waste and Recycling 2024). All other solid waste is disposed off at the Olinda Alpha Landfill in Brea and at the Prima Deshecha Landfill in San Juan Capistrano (Orange County Waste and Recycling 2022). The Olinda Alpha Landfill (SWIS No. 30-AB-0035) has a permitted capacity is 8,000 tons per day and a remaining capacity of 18 percent and is anticipated to serve the community through 2028 (Orange County Waste and Recycling 2024; Orange County Grand Jury 2017; and Orange County Waste and Recycling 2016). The Prima Deshecha Landfill (SWIS No. 30-AB-0019) has a permitted capacity is 4,000 tons per day and a remaining capacity of 99 percent and is anticipated to serve the community through 2099 (Orange County Waste and Recycling 2024; Orange County Grand Jury 2017; and Orange County Waste and Recycling 2016).

Future development would be subject to waste reduction measures to divert solid waste from landfills during construction and demolition (a 65 percent diversion rate per the City's C&D Program) and during operations through composting, recycling, and reuse through resource recovery. The City has a waste diversion goal of reducing organic waste disposal 75 percent by 2025. These goals are consistent with state regulations regarding solid waste, composting, and recycling. The City implements policies to reduce generation of solid waste through the City's debris recycling and reuse ordinance (PPP UTIL-7), waste reduction (PPP UTIL-8) and City standard conditions related to solid waste recycling (PPP UTIL-9 and PPP UTIL-10). Future development under the project would also be required to comply with these standards. Additionally, EPCA Element Goal 7 and its supporting objectives and policies would serve to further support the City's goal of reducing solid waste through reduction and recycling efforts for all land use types. Therefore, the project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, and impacts would be less than significant.

4.14.8.2 Significance of Impacts

Project-related increases in solid waste would be required to comply with City standards related to solid waste reduction efforts (PPPs UTIL-7 through UTIL-10), as well as all applicable federal and state reduction statutes. Therefore, impacts would be less than significant. No mitigation is required.

4.14.8.3 Mitigation

Impacts would be less than significant. No mitigation is required.

4.14.9 Cumulative Analysis

As defined in Section 15130 of the State CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for utilities and services. The study area for the assessment of cumulative impacts related to utilities and services is the City. The impact analysis presented in Sections 4.14.5 through 4.14.8 above is cumulative in nature, because it considers the need for future facilities and available capacity for the entire City. IRWD would have a water supply surplus of 90,704 AFY through 2040, which would exceed the project's projected increase in water demand of 2,093 AFY. Similarly, MWRP operated by IRWD has an existing surplus treatment capacity of 28 mgd, which would be able to accommodate the increased sewer flows of 2.04 MGD associated with the project, and OCSD's Plant No. 1 has a treatment capacity of 320 MGD, remains capable of accommodating the projected increase in sewer flows. Future development would occur incrementally through 2045, based on market conditions and other factors, such that demand for these utility services would not be overburdened at any given time. Additionally, future development under the project would accommodate increases in population based on SCAG's demographic projections. Therefore, the project would accommodate planned growth, and would not exceed regionally forecasted demand for electric power by SCE and OCPA or natural gas for SoCalGas. Furthermore, future development under the project would connect to the existing telecommunications infrastructure (telephone, internet, wireless services) present within the City. Furthermore, Frank R. Bowerman Landfill has enough projected capacity to serve residents and businesses until approximately 2053. Therefore, the project would not contribute to a significant cumulative impact related to utilities and services.