## 3.14 UTILITIES AND ENERGY CONSERVATION

This section describes existing and planned utilities and evaluates the operation and capacity of these utilities to serve the Project. Utilities addressed in this section include potable and recycled water, wastewater facilities, solid waste disposal, and energy services. This section identifies the existing capacity of these utilities and services provided by the City and utility companies and evaluates whether capacity exists to accommodate the Project demands. Stormwater management system facilities, capacity, and impacts are addressed in Section 3.8, *Hydrology and Water Quality*. The Project's anticipated energy demand and energy conserving features are also evaluated to determine whether the Project would result in unnecessary or wasteful energy consumption. The discussion of the Project's anticipated energy demands include natural gas, electricity, and fuel consumption during construction and operation of the Project.

### 3.14.1 Environmental Setting

Utility services in the City and Project vicinity are provided by the City and three private companies. Water, wastewater, and stormwater management services are provided by the City's Utilities Department. Solid waste management is provided by the City through a contract with San Luis Garbage Company. Electricity is provided by Pacific Gas & Electric Company (PG&E), and beginning in 2020 will also be provided by Monterey Bay Community Power (MBCP). Natural gas is provided by Southern California Gas Company (SoCal Gas) (Table 3.14-1).

**Table 3.14-1. Utilities Serving the Project Site**

| Category | Utility Provider |
|---|---|
| Wastewater Collection and Treatment | City of San Luis Obispo, Utilities Department, Wastewater Division |
| Water Supply, Treatment, and Distribution | City of San Luis Obispo, Utilities Department, Water Division |
| Solid Waste | San Luis Garbage Company |
| Electricity | PG&E and MBCP |
| Natural Gas | (SoCal Gas |

Note: Water and sewer service are not currently provided at the Project site.

#### 3.14.1.1 Wastewater Treatment

The City provides municipal wastewater treatment within City limits and, through agreement, also provides service to Cal Poly and the San Luis Obispo County Regional Airport (Airport). The City owns and operates the Water Resource Recovery Facility (WRRF) located on Prado Road approximately 0.6-mile northeast of the Project site. The WRRF manages and treats wastewater in accordance with standards established by the SWRCB to remove solids, reduce the amount of nutrients, and eliminate bacteria in treated wastewater. A portion of the treated water is recycled for irrigation use within the City and the remaining flow is discharged to San Luis Obispo Creek.

San Luis Obispo Creek has been identified as having many beneficial uses that require protection by the Central Coast RWQCB. Treated wastewater from the City's WRRF meets the criteria for all of these uses except Municipal and Domestic Water Supply (MUN). The MUN designation is the main driver for treatment upgrades at the WRRF further described below. These new requirements have been placed in the WRRF's recently revised National Pollutant Discharge Elimination System (NPDES) permit to meet nutrient and disinfection by-products limits. Compliance with the new limits is detailed through a Time Schedule Order (TSO) which requires the City to submit a schedule outlining the planned actions for achieving compliance. A TSO was adopted with the WRRF's permit and requires compliance by November 30, 2019 (City of San Luis Obispo 2019a).

WRRF Treatment Capacity

The WRRF has a treatment capacity for dry-weather flow (e.g., typical non-storm urban runoff and wastewater flows) of 5.1 million gallons per day (MGD) (City of San Luis Obispo 2014c). As of 2018, the WRRF receives an average of 3.3 MGD of dry-weather flows (City of San Luis Obispo 2015a). Therefore, the estimated remaining capacity of the WRRF is 1.8 MGD or 32 percent of the total dry-weather wastewater treatment capacity.

*The WRRF removes solids, reduces the amount of nutrients, and eliminates bacteria in the treated wastewater before it is discharged to San Luis Obispo Creek.*

As estimated by the General Plan LUE, future dry-weather flows to the WRRF are anticipated to reach 5.4 MGD, of which 0.47 MGD would be generated from Cal Poly and

4.93 MGD would be generated from the City (City of San Luis Obispo 2015c). Due to current inability for the facility to meet MUN criteria, the City is undertaking upgrades to the WRRF. The WRRF Project includes increasing treatment capacity and meeting the terms of the City's new NPDES permit to treat future flows and loading. Additional upgrades include replacing aging equipment, maximizing the production of recycled water, incorporating interpretive features and public amenities, and including a new joint operations interpretive center and facility. Upon completion, the WRRF modifications would increase treatment capacity at the facility to 5.4 MGD, which would accommodate the dry-weather wastewater flows in the City under full buildout of the General Plan (City of San Luis Obispo 2015b; 2019d).

The City's sewer system has long experienced problems associated with wet-weather infiltration and inflow where saturated soils result in rainwater overloading the wastewater collection systems.[1] Under heavy rain conditions, instantaneous peak flows to the WRRF can reach up to 25 MGD (City of San Luis Obispo 2014b). These events can result in the release of partially treated wastewater into San Luis Obispo Creek, which can flow downstream to the creek's estuary and the Pacific Ocean at Avila Beach. Planned improvements described above to the WRRF to increase treatment capacity to 5.4 MGD would help address existing WRRF constraints during wet-weather conditions (e.g., rainfall events that result in stormwater runoff in addition to typical urban runoff and wastewater generation) (City of San Luis Obispo 2014c).

Wastewater Infrastructure (Public)

The City's wastewater collection system serves a variety of uses in the City, including residential, commercial, and industrial customers. Sewer service is provided only to properties within the City limits, with the exception of a few limited areas located just outside of the City limits, including the campus of Cal Poly and the Airport (City of San Luis Obispo 2015c). As of 2019, there are approximately 14,400 sewer service connections to the City's system. The collection system is divided into 18 flow basins supported by nine sewage lift stations, 138 miles of gravity sewer lines, and 2.4 miles of force mains. The gravity sewer lines range in size from 6 to 48 inches in diameter, and the force main lines range in size from 4 to 16 inches in diameter (City of San Luis Obispo 2019b). The 2015 Draft Wastewater Collection System Infrastructure Renewal Strategy prepared for

[1] Inflow and infiltration occur when groundwater or rainwater flow into the sewer system, either through a direct connection or seepage through cracked laterals, leaky joints, and/or deteriorated manholes (City of San Luis Obispo 2019c).

the City identifies sewer line segments with substandard infrastructure and prioritizes replacement and maintenance projects within the wastewater collection system to meet future demand. Parts of the collection system are over 100 years old and are anticipated to exceed their design life. Portions of the collection system require frequent preventive maintenance because of root intrusion, poor grade, and/or degraded pipe conditions. The City has also identified portions of the system that have reached their design capacity and will require modifications to accommodate future development (City of San Luis Obispo 2014c). The Wastewater Collection System Infrastructure Renewal Strategy determined that in order to maintain the collection system in its current state, a minimum of two miles of wastewater collection pipelines should be rehabilitated per year (Water Systems Consulting, Inc. 2015).

Currently, the Project site does not contain wastewater infrastructure that connects to the City's wastewater system. The closest sewer main tie-ins are located at two points along LOVR approximately 0.1-mile northeast of the site. The LOVR sewer main wastewater flows currently do not exceed capacity. Further, the Calle Joaquin lift station, which helps convey LOVR sewer main flows to the Laguna lift station and then to the WRRF, has a capacity of 570 gallons per minute (GPM), while the Laguna lift station has a capacity of 1,500 GPM. The Calle Joaquin lift station currently does not experience capacity issues; however, the Calle Joaquin lift station is scheduled for replacement in the near future due to the age of the facility (City of San Luis Obispo 2019b).

Wastewater Infrastructure (Private)

A small parking kiosk structure was repurposed and relocated as an outhouse for the John Madonna Construction Company staff. The small outhouse disposes wastewater via an existing septic tank near the old barn building within the Froom Ranch Dairy complex and is addressed within Section 3.8, *Hydrology and Water Quality*.

#### 3.14.1.2 Water Supply

The City is the sole purveyor of water within City limits, allowing the City to maintain uniformity in its water service, distribution standards, and infrastructure, and to ensure consistency in developing and implementing water policy.

Water Sources

The City obtains its potable water from five sources: the Salinas Reservoir (Santa Margarita Lake), Whale Rock Reservoir, Nacimiento Reservoir, and a limited amount of

groundwater. City water supplies from these sources are conveyed to the City Water Treatment Plant located on Stenner Road approximately four miles north of the Project before distribution throughout the City.

*Reservoirs*

The City obtains nearly all of its potable water supply from its share of the yield of three regional reservoirs.

**Salinas Reservoir -** The Salinas Reservoir is located on the upper Salinas River, approximately 12 miles northeast of the Project site near the community of Santa Margarita. The reservoir captures water from a 112-square-mile watershed and is owned by the U.S. Army Corps of Engineers (USACE), and operated by the County of San Luis Obispo. The City has an agreement with USACE to receive up to 45,000 acre-feet per year (AFY) of the water from the reservoir; however, the reservoir has a maximum storage capacity of 23,842.9 acre-feet (AF), which limits the availability of water to the City annually. Water from the reservoir is pumped through the Cuesta Tunnel (a 1.0-mile-long tunnel through the mountains of the Cuesta Ridge) and then flows by gravity to the City Water Treatment Plant. As of October 2019, the total amount of water stored in the reservoir was 21,208.6 AF, which is 88.95 percent of total reservoir capacity. The City receives a varying amount of water from the Salinas Reservoir each year, historically ranging from as low as 200 AF to as high as 5,000 AF. In 2018, the City received 723 AF (City of San Luis Obispo 2018d; 2018a; 2016a).

**Whale Rock Reservoir -** Whale Rock Reservoir is located on Old Creek approximately 18 miles northwest of the Project site in Cayucos and captures water from a 20.3-square-mile watershed. The storage capacity of the reservoir is shared by the City, Cal Poly, and California Men's Colony, which collectively comprise the Whale Rock Commission. Whale Rock Reservoir is formed by an earthen dam and was historically able to store an estimated 40,662 AF of water at the time of construction in 1961; since that time the total capacity has declined to38,967 AF. Water is delivered to the City via 17.6 miles of 30-inch pipeline and two pumping stations. In October 2019, the total amount of water stored in the reservoir was 33,877 AF, which is 86.94 percent of total reservoir capacity. The City has rights to 55.05 percent of the reservoir's total storage capacity (approximately 21,451 AF); however, the City receives a varying amount of water from the Whale Rock Reservoir each year, historically ranging from as low as 500 AF to as high as nearly 5,000 AF. The City received 410 AFY from this reservoir in 2018 (not including water delivered to Cal Poly) (City of San Luis Obispo 2018d; 2016a; 2018a).

Based on the 2018 update to the General Plan Water and Wastewater Management Element (WWME), the City has identified the safe annual yield from coordinated operation of the Salinas and Whale Rock reservoirs at 4,910 AF (City of San Luis Obispo 2018c).

**Nacimiento Reservoir -** Nacimiento Reservoir is owned by the Monterey County Water Resources Agency and is located approximately 35 miles north of the Project site near San Miguel in the County. The reservoir has a storage capacity of 377,900 AF. Since 1959, the San Luis Obispo County Flood Control and Water Conservation District has had entitlements to 17,500 AFY from the reservoir for use in the County. Of that, the City has a contractual entitlement to 5,482 AFY, which also reflects the City's dependable yield from this reservoir. The total amount of water stored in the reservoir was 180,288 AF in October 2019, which is 47.71 percent of capacity. The City began receiving water from the Nacimiento Reservoir in 2011 and in 2018, the City received its full contractual entitlement of 5,482 AF from Nacimiento Reservoir (City of San Luis Obispo 2010; 2017a; 2018d).

*Recycled Water*

Recycled water is highly-treated wastewater approved for reuse by the California Department of Public Health for a variety of applications, including landscape irrigation and dust control. In 1994, the City completed a major capital improvement project at the WRRF that included addition of tertiary treatment and other unit processes required to meet stringent effluent quality limits intended to protect and enhance the receiving waters of San Luis Obispo Creek. The City received regulatory approvals for diversion of treated effluent for offsite landscape irrigation and other approved uses in 2002. In 2006, the City's Water Reuse Project created the first new source of water for the City since the construction of Whale Rock Dam in 1961. The project included improvements at the City's WRRF and an initial eight miles of distribution pipeline.

The City is required to release 1,807 AFY of flow to San Luis Obispo Creek for improving the health of the San Luis Creek ecosystem downstream. In 2018, the City provided 238 AF of recycled water (City of San Luis Obispo 2018a). Based on the City's 2017 Recycled Water Master Plan, the City estimates a surplus of 1,500 to 1,900 AF of recycled water supplies are available for additional beneficial use beyond that required to meet current demand, including for release to San Luis Creek and use by existing customers. Currently, there is no recycled water infrastructure on the Project site; however, tie-in mains are located on LOVR immediately adjacent to the Project site boundary that would accommodate utility extensions into the Project site (City of San Luis Obispo 2017c).

*Groundwater*

The City overlies the San Luis Obispo Valley Groundwater Basin, which covers approximately 12,700 acres in the San Luis Obispo and Edna Valleys. Storage capacities are estimated at between 46,700 to 55,800 AF, with a sustainable yield of approximately 6,000 to 7,000 AFY. The groundwater basin is relatively small and recharges quickly following normal rainfall periods, but also lowers relatively quickly following the end of the rainy season. Extensive use of groundwater sustained the City through the drought of 1986-1991, a period during which groundwater supplied 50 percent of the City's water demand. However, the City's two historically largest producing wells, the Auto Parkway and Denny's wells, were shut down when elevated nitrate levels were detected. This loss of groundwater resources and infrastructure means the City could not rely on groundwater for future drought protection. According to the 2015 Urban Water Management Plan, the City will continue to use groundwater for domestic purposes when available (City of San Luis Obispo 2016c). The City stopped supplying groundwater to its drinking water system in 2015 due to new regulatory requirements, but the City's groundwater wells remain operable and are on standby should the use of groundwater be required and determined feasibly sustainable in the future (City of San Luis Obispo 2016b). In 2018, the City did not utilize groundwater for potable water use, though the City continued work with a hydrogeologist to identify a site that could potentially support expansion of its groundwater program through future development of a new well (City of San Luis Obispo 2018a).

City Water Demand and Annual Availability

The General Plan WWME (amended in 2018) addresses the availability and distribution of water to new and existing development. Surface water reservoirs serve nearly all of the City's water demand with Nacimiento Reservoir providing the City's largest water source (45 percent of the annual water supply) followed by the Whale Rock and Salinas Reservoirs. Recycled water currently serves as a minor water source (Table 3.14-2). As noted above, although groundwater provides limited water to the City, it has acted as a major supply source during past severe droughts and the City continues to consider potential future use of groundwater.

**Table 3.14-2. City of San Luis Obispo's Water Resource Annual Availability (2018)**

| Water Resources | Annual Availability | |
|---|---|---|
| **Salinas Reservoir (Santa Margarita Lake) and Whale Rock Reservoir** | 4,910 AF | Safe Annual Yield[1] |
| **Nacimiento Reservoir** | 5,482 AF | Dependable Yield[2] |
| **Recycled Water** | 238 AF | 2017 Annual Usage[3] |
| **Siltation (from 2010 to 2060)** | (500) AF | WWME Policy A 4.2.2[4] |
| **Total** | **10,130 AF** | |

[1] Safe Annual Yield determined from computer model, which accounts for siltation loss through 2010 (per WWME Policy A 4.2.1).
[2] Dependable Yield is the contractual amount of water the City has rights to from Nacimiento Reservoir.
[3] The quantity of recycled water included is the actual prior year's recycled water usage (calendar year 2017) per WWME Policy A 7.2.2.
[4] Reservoir siltation is a natural occurrence that reduces storage capacity over long periods, resulting in the reduction of safe annual yield.
Source: City of San Luis Obispo 2018a.

The total water available for the City in 2018 was 10,130 AFY, which included 238 AFY of recycled water (Table 3.14-2; City of San Luis Obispo 2018a). As this availability was adjusted following years of drought and updates to the City's safe annual yield model, the availability is considered a reasonable long-term safe yield value for the purposes of this EIR analysis.

During 2018, 62 percent of total water consumption in the City was for single- and multi-family residential uses, 24 percent was to support commercial and other non-residential development, and 14 percent was to support separately metered landscape irrigation. The 2018 per capita potable water use was 100 gallons per capita per day (gpcd) for approximately 46,548 people, and the City's water demand for 2018 was 5,225 AF (City of San Luis Obispo 2018a). Compared against the City's 2018 annual availability, the City has approximately 4,905 AF of water surplus available to allocate to new beneficial uses within the City (see Table 3.14-3).

Per General Plan WWME Policy A 5.2.2, the City's primary water supply needed to serve buildout under the General Plan is calculated based on a per capita water demand of 117 gpcd. Based on the buildout population identified in the General Plan LUE, the City has an estimated population capacity of 57,200 people within the City's urban reserve, and estimates the City's annual primary water supply to be 7,496 AF, which is 2,634 AFY less than the 2018 annual availability of 10,130 AF (City of San Luis Obispo 2018a).

**Table 3.14-3. Water Demand and Water Availability in the City of San Luis Obispo Based on WWME Policies**

| Water Availability and Estimated Future Demand | AFY |
|---|---|
| Current Annual Availability (2018) | 10,130 |
| Primary Water Supply (Estimated Future Demand) | 7,496 |

[1] Calculated using the City's per capita water demand factor of 117 gpcd and the City General Plan LUCE urban reserve capacity.
Source: City of San Luis Obispo 2018a.

Multi-Year Water Reliability

As required by Section 5 of the General Plan WWME, the City accounts for water supplies necessary to meet three specific community needs: primary water supply, reliability reserve, and secondary water supply (Table 3.14-4). The primary water supply is defined as the amount of water needed to serve the buildout population of the City as identified in the General Plan LUE. The proposed General Plan LUE buildout population within the urban reserve boundary is estimated to be 57,200; the primary water supply is estimated to be 7,496 AF in the 2018 Water Resources Status Report (City of San Luis Obispo 2018a).

The reliability reserve provides a buffer for future unforeseen or unpredicted long-term impacts to the City's available water supply. The quantity of water for the reliability reserve is established using 20 percent of the current water use and the City's population (46,548 in 2018). The reliability reserve provides a reserve above and beyond the existing needs of the community and may not be used for future development. In 2018, the reliability reserve was 1,220 AF.

The secondary water supply is the amount of water remaining from the City's available water resources above those needed to meet the primary water supply and reliability reserve. The secondary supply is intended to meet peak water demand periods or short-term loss of City water supply sources. The update to the City's safe annual yield model led the to the reduction in the City's available secondary water supply.

**Table 3.14-4. 2018 City Potable Water Supply Accounting**

| 2018 Annual Availability | 2017 Actual Usage (AF) | Primary Water Supply (AF) | Reliability Reserve (AF) | Secondary Water Supply (AF) |
|---|---|---|---|---|
| **10,130** | 5,225 | 7,496 | 1,220 | 1,414 |

[1] Calculated using the City's per capita water demand factor of 117 gpcd and the City 2017 population.
Source: City of San Luis Obispo 2018a.

Drought and Climate Change

Like most communities in the Central Coast of California, periodic drought conditions are inevitable. Historic droughts have affected the Central Coast and required several actions by the City to reduce water demand and manage water supplies. For example, from 1986 to 1992, a six-year drought required water rationing and limited supplemental groundwater sources to meet demands. More recently, the unprecedented drought that ended in 2016 brought the driest conditions in recorded history to the state. During this drought, the City reduced water consumption in response to state regulations established to address ongoing drought conditions.

Looking ahead, climate change is expected to affect weather patterns and may result in increased frequency or duration of drought conditions, which could have a substantial effect on future water availability. In 2018, the City updated the safe annual yield model and the General Plan WWME to include data from the most recent drought period that ended in 2016, consistent with WWME Program A 3.3.3, and analyzed three climate change scenarios (City of San Luis Obispo 2018c). The annual water supply availability reflected in Table 3.14-2 above (4,910 AFY) reflects the most current safe annual yield values for the City when accounting for future climate change.

Water Distribution Infrastructure

In 2019, the City had approximately 15,500 metered water customers. The City's water distribution system delivers potable water from the Water Treatment Plant at Stenner Creek Road to municipal customers and fire hydrants via two storage reservoirs, five hydropneumatic tanks, eight pump stations, 10 water tanks, and approximately 185 miles of water mains. The distribution system must provide an uninterrupted water supply at adequate pressures to meet all fire and domestic flow requirements while minimizing water loss due to leakage. Concurrent with the General Plan LUE Update, the City prepared a hydraulic model and Potable Water Distribution System Operations Master Plan to identify and prioritize replacement of aged and undersized water distribution facilities (City of San Luis Obispo 2016c).

Existing City water distribution system infrastructure near the Project site includes tie-ins to the public water system located along an existing 18-inch main along LOVR, as well as with potable and recycled water mains along LOVR. The Project site is located within the Edna Saddle pressure zone and would be served by the existing 3.8-million-gallon Edna Saddle Tank. The Edna Saddle Tank, which is located north of the Margarita and Airport,

provides operational, emergency, and fire flow storage for a nearly 2,300-acre area in the southern portions of the City (City of San Luis Obispo 2015d).

#### 3.14.1.3 Solid Waste Disposal

Municipal solid waste collection and disposal services within the City and Project vicinity are provided by San Luis Garbage, a municipal waste hauling company owned by Waste Connections, Inc. (City of San Luis Obispo 2018b). San Luis Garbage collects solid waste, recyclables, and organic waste, which is subsequently transported primarily to Cold Canyon Landfill. Organic waste is hauled to the Kompogas Organic Recycling Plant, a state-of-the-art, high heat, dry anaerobic facility which converts organic waste into carbon-neutral biogas and high-grade natural compost which is owned and operated by Hitachi Zosen Inova. At Cold Canyon Landfill, municipal waste is processed at the Resource Recovery Park (RRP) and Materials Recovery Facility (MRF). . Currently, solid waste collection services are not provided at the Project site. Commercial operations that use roll-off services and/or construction and demolition waste removal services may choose any permitted hauler.

The RRP includes a public drop-off facility, a construction and demolition (C&D) recycling operation, a household hazardous waste drop-off facility, a universal and electronic waste recycling center, and an equipment maintenance facility. Materials collected, sorted, and recovered in the facility include cardboard, metal and appliances, concrete/asphalt/brick, trash, tires, drywall, and paper and plastic materials.

The MRF accepts recyclable waste from curbside pickup services and industrial and commercial consumers. In addition, it receives recyclable material sorted at the RRP. The MRF currently processes up to 18 tons per hour of glass, plastic, paper, cardboard, aluminum, tin, and other metals. The MRF has a maximum permitted throughput of 400 tons per day (CalRecycle 2018).

The maximum permitted throughput to the landfill is 1,650 tons per day (CalRecycle 2018). The Cold Canyon Landfill received approvals from the County and the state in 2013 to allow continued waste disposal operations through 2040, with anticipated expansion of allowable disposal tonnage of up to 2,050 tons per day. The landfill has a design capacity of 23,900,000 cubic yards (cy) and a remaining capacity of 14,500,000 cy, or 60.7 percent, as of 2015, with a cease operation date of December 2040 (CalRecycle 2018). Utilizing the MRF and RRP, Cold Canyon Landfill diverts approximately 65 percent of waste from the landfill. Additional potential solid waste disposal sites that could serve the City include the

Chicago Grade and/or Paso Robles Landfills, or out-of-county waste disposal facilities. The Chicago Grade and Paso Robles Landfills have remaining infill capacities of approximately 832,699 cy (93 percent) and 5,327,500 cy (82 percent), respectively (CalRecycle 2019b).

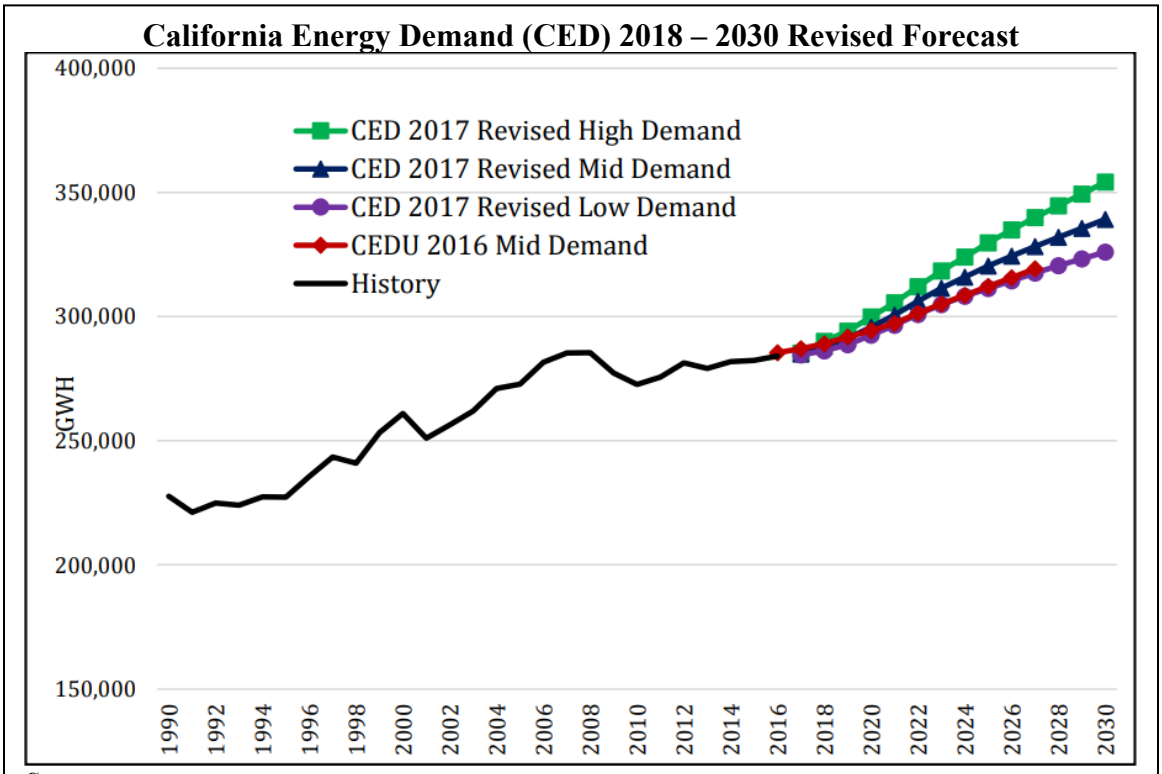
The state's target disposal rate for the San Luis Obispo region is 7.4 pounds per person per day for residents and 18.7 pounds per person per day for employees (CalRecycle 2019a). The target rates were set in 2016 at 50 percent of 2006 waste disposal levels. Between 2007 and 2010, the population-related solid waste disposal rate ranged between 4.4 and 5.4 pounds per person, and the employment solid waste disposal rate ranged between 11.7 and 13.8 pounds per person (City of San Luis Obispo 2017b). In addition to existing solid waste diversion, the City's Climate Action Plan includes the goal to reduce the community waste stream to as close to zero waste as possible, with a 75 percent diversion rate by the year 2020 (City of San Luis Obispo 2012).

#### 3.14.1.4 Energy Services

Electricity

The production of electricity requires the consumption or conversion of energy resources including natural gas, coal, water, nuclear, and renewable resources such as wind, solar, and geothermal. Energy, natural gas, and renewable energy production, consumption, research, and conservation within the state of California are managed by the California Energy Commission (CEC) and are regulated by the California Public Utilities Commission (CPUC). In 2018, Californians consumed 281,120.2 gigawatt hours (GWh) of electricity; future annual electricity consumption is projected to increase to approximately 320,000 GWh by 2027.

Of the electricity generated in-state in 2018, 46.5 percent was generated by natural gas-fired power plants, 0.1 percent was generated by coal-fired power plants, 11.3 percent came from large hydroelectric dams, 0.2 percent was generated by oil and other petroleum or waste heat, and 9.4 percent came from nuclear power plants. The remaining 32.35 percent of electricity production in California was supplied by renewable sources including biomass, geothermal, small hydro, solar, and wind power. California's total power mix, including in-state generation and imports, included 3.3 percent from coal, 10.6 percent from large hydroelectric dams, 34.9 percent from natural gas, 9.05 percent from nuclear power plants, 0.15 percent from oil and other petroleum or waste heat, 31.36 percent from renewable sources, and 10.5 percent from "unspecified sources of power" (CEC 2019c).




*Source: CEC 2018b.*

Natural Gas

Natural gas is a fossil fuel formed when layers of buried organic matter are exposed to intense heat and pressure over thousands of years. The energy is stored in the form of hydrocarbons and can be extracted in the form of natural gas, which can be combusted to generate electricity, enabling this stored energy to be transformed into usable power or to be used directly for heating, cooking, and other use. Natural gas consumed in California is largely extracted from onshore and offshore sites elsewhere in the Southwestern U.S. (42 percent), Rocky Mountain States (23 percent), Canada (22 percent), and within California (12 percent) (CEC 2015). Californians consumed 12,739.1 million therms of natural gas in 2016 (see Table 3.14-5; CEC 2018b).

Natural gas in the City is provided by SoCal Gas, which provides natural gas to 21.4 million consumers through 5.9 million meters in more than 500 communities. The company's service territory includes communities throughout central and southern California, from Visalia to the Mexican border (SoCal Gas 2018). Existing gas infrastructure near the Project site includes a high-pressure gas main that extends northwest to southeast along LOVR.

Local Energy Services

Electrical and natural gas services for the City and Project site are provided by PG&E and SoCal Gas, respectively. In 2017, PG&E provided 82,224.3 GWh of electricity to nearly 16 million customers across a service area of 70,000 square miles (CEC 2019b; PG&E 2018b). In the same year, SoCalGas provided a total of 5,141.8 million therms of natural gas to nearly 21.6 million customers across its 20,000 square mile service area (CEC 2019b; SoCalGas 2019). Within the County in 2017, total demand for electricity was 1,778.5 GWh, and total demand for natural gas was 83,787,570 therms. The Project site receives electricity from existing PG&E infrastructure. Existing gas infrastructure near the Project site includes a high-pressure gas main that extends northwest to southeast along LOVR.

Total state and countywide energy demands in 2017, including per capita calculations of energy demands based on 2018 populations, are provided in Table 3.14-5.

**Table 3.14-5. 2018 County and State Energy Demands**

| | Population | Total 2017 Energy Demand | | 2017 Energy Demand Per Capita | |
|---|---|---|---|---|---|
| | | Natural Gas Demand (therms) | Electricity Demand (GWh) | Natural Gas Demand (therms) | Electricity Demand (MWh) |
| **County** | 284,010 | 81,678,060 | 1,766.0 | 287.6 | 6.2 |
| **State** | 39,557,045 | 12,638,157,740 | 281,120.2 | 319.5 | 7.1 |

Source: CEC 2019b; U.S. Census Bureau 2019b..

Transportation Energy

The transportation sector accounts for nearly 40 percent of statewide total energy demand (CEC 2018). Caltrans reports that approximately 25.1 million automobiles, 5.7 million trucks, and 889,024 motorcycles were registered in the state in 2016, resulting in a total estimated 339.8 billion vehicle miles traveled (VMT) (Caltrans 2017) and 15.1 billion gallons of gasoline consumed (CEC 2019a). Within the County, an estimated 3.2 million vehicle miles were traveled in 2017 (Caltrans 2016).

Renewable Energy

The State of California strongly supports production and use of renewable energy sources, including solar photovoltaic (PV), wind, hydrologic, and biomass. For example, in-state operating capacity of renewable resources was 63,028 GWh in 2018. The state's renewable

energy portfolio includes solar PV (27,267 GWh), wind (14,078 GWh), geothermal (11,526 GWh), small hydroelectric (4,248 GWh), and biomass (5,909 GWh) (CEC 2019c).

PG&E, which currently serves the City, and the MBCP, which will start providing services to City in 2020, also strongly support the production and use of renewable energy. In 2017, PG&E's energy portfolio consisted of 33 percent renewable, 27 percent nuclear, 18 percent large hydroelectric, 20 percent natural gas and other fuels, and 2 percent market purchased energy sources (PG&E 2018a). MBCP offers two programs with varying power contents for customers within its service area. MBCP offers customers a power mix made up from approximately 34 percent renewable and 66 percent large hydroelectric sources. MBCP's prime program offers customers entirely 100 percent renewably sourced energy generated from solar and wind (MBCP 2019).

### 3.14.2 Regulatory Setting

Utilities and energy conservation are governed primarily by state and local laws that would apply to future development under the Project. State and local regulations that are directly relevant to the Project are summarized below. There are no federal regulations pertaining to utility and energy conservation that directly relate to local planning projects.

#### 3.14.2.1 State

Assembly Bill 341

Assembly Bill (AB) 341 established a state policy goal that no less than 75 percent of solid waste generated be source reduced, recycled, or composted by 2020, and requires CalRecycle to provide a report to the legislature that recommends strategies to achieve the policy goal by January 1, 2014. AB 341 builds on the AB 939 requirement that every jurisdiction divert at least 50 percent of its waste. The bill also mandates local jurisdictions to implement commercial recycling by July 1, 2012. AB 341 requires any business (including schools and government facilities) that generates 4 cy or more of waste per week, and multi-family buildings with five or more units to arrange for recycling services.

Assembly Bill 939

AB 939, the California Integrated Waste Management Act, mandates management of non-hazardous solid waste throughout the State of California. The purpose of AB 939 is to reduce, recycle, and reuse solid waste generated in the state to the maximum extent feasible; improve regulation of existing solid waste landfills; ensure that new solid waste landfills are environmentally sound; streamline permitting procedures for solid waste

management facilities; and specify the responsibilities of local governments to develop and implement integrated waste management programs. AB 939 sets forth policies and requirements for the state and local governments. Among them is a hierarchy of preferred waste management practices. The highest priority is to reduce the amount of waste generated at its source (source reduction). Second in the hierarchy is to reuse, by extending the life of existing products and recycling those wastes that can be reused as components or feed stock for the manufacture of new products, and by composting organic materials. Source reduction, reuse, recycling and composting are jointly referred to as waste diversion methods because they divert waste from disposal. Third and lowest in the hierarchy is disposal by environmentally safe transformation in a landfill. AB 939 and Public Resources Code section 41780 enforce this prioritization by requiring that all local jurisdictions, cities, and counties divert 50 percent of the total waste stream from landfill disposal by the year 2000 and each year thereafter (using 1990 as the base year). Each local jurisdiction must demonstrate compliance by instituting source reduction programs.

Senate Bill 1383

Signed into law by Governor Brown in September 2016, SB 1383establishes targets for reducing methane emissions in various sectors of California's economy in a statewide effort to reduce emissions from short-lived climate pollutants. SB 1383 codifies CARB's Short-Lived Climate Pollutant Reduction Strategy established pursuant to SB 605. One of the targets established under SB 1383 is achievement of a 50 percent reduction in the level of statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025.

The State of California Water Resources Control Board (SWRCB)

The SWRCB has adopted a statewide construction general permit that applies to storm water and non-storm water discharges from construction activities. This general permit, which is implemented and enforced in the Five Cities region by the Central Coast Regional Water Quality Control Board (RWQCB), requires all owners of land where construction activity occurs to:

- Eliminate or reduce non-storm water discharges to storm water systems and other waters of the U.S.;
- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) emphasizing storm water Best Management Practices (BMPs); and
- Perform inspections of storm water pollution prevention measures to assess their effectiveness.

Title 24, Part 6 of the California Code of Regulations - California's Energy Efficiency Standards for Residential and Non-Residential Buildings

This law is the primary legislation governing energy use in new buildings in the state. Relevant prescriptive and mandatory requirements of this law include, but are not limited to:

- Incorporation of cool-roofs on non-residential buildings;
- Skylights for daylighting buildings; and
- Installation of certified insulation materials.

3.14.2.2 Local

City of San Luis Obispo General Plan

The City is the provider of water and wastewater services to residents of the City. Applicable regulations that would affect the provision of City utilities are based on local policies that place requirements on the level of service that must be maintained. Additionally, the City's General Plan contains policies which encourage energy efficiency and sustainable practices to reduce the consumption of energy resources. Established policies and regulations that would apply to the Project are provided below.

*Land Use Element (LUE)*

***Policy LU 1.1.1 Growth Management.*** The City shall manage its growth so that:

A. The natural environment and air quality will be protected.
B. The relatively high level of services enjoyed by City residents is maintained or enhanced.
C. The demand for municipal services does not outpace their availability.
D. New residents can be assimilated without disrupting the community's social fabric, safety, or established neighborhoods.
E. Residents' opportunities for direct participation in City government and their sense of community can continue.

***Policy LU 1.1.2 Development Capacity & Services.*** The City shall not designate more land for urban uses than its resources can be expected to support.

***Policy LU 1.5 Jobs/Housing Relationship***. The gap between housing demand (due to more jobs and college enrollment) and supply should not increase.

***Policy LU 1.13.1 Water and Sewer Service.*** Although the City will serve those parties having valid previous connections or contracts, the City shall neither provide nor permit new delivery of City potable water or sewer services to the following areas:

A. Outside the City limits;
B. Outside the urban reserve line;
C. Above elevations reliably served by gravity-flow in the City water system;
D. Below elevations reliably served by gravity-flow or pumps in the City sewer system.

***Policy LU 1.13.10 Solid Waste Capacity.*** In addition to other requirements for adequate resources and services prior to development, the City shall require that adequate solid waste disposal capacity exists before granting any discretionary land use approval which would increase solid waste generation.

***Policy LU 1.14.7 Development Fee Programs.*** The City shall maintain a development fee program that covers costs associated with serving projects with City services and facilities. This maintenance will include periodic review of fees collected to ensure they are adequate to cover City costs.

***Policy LU 2.3.1 Mixed Uses and Convenience.*** The City shall promote a mix of compatible uses in neighborhoods to serve the daily needs of nearby residents, including schools, parks, churches, and retail stores. Neighborhood shopping and services should be available within about 1 mile of all dwellings. When nonresidential, neighborhood-serving uses are developed, existing housing shall be preserved, and new housing added where possible. If existing dwellings are removed for such uses, the development shall include replacement dwellings (no net loss of residential units).

***Policy 3.3.1 New or Expanded Areas of Neighborhood Commercial Use***. The City shall provide for new or expanded areas of neighborhood commercial uses that: (A) Are created within, or extended into, nonresidential areas adjacent to residential neighborhoods; (B) Provide uses to serve nearby residents, not the whole City; (C) Have access from arterial streets, and not increase traffic on residential streets; (D) Have safe and pleasant pedestrian access from the surrounding service area, as well as good internal circulation; (E) Are designed to be pedestrian-oriented, and architecturally compatible with the adjacent neighborhoods being served. Pedestrian-oriented features of project design should include: (i) Off-street parking areas located to the side or rear of buildings rather than between

buildings and the street; (ii) Landscaped areas with public seating; and (iii) Indoor or outdoor space for public use, designed to provide a focus for some neighborhood activities.

***Policy LU 9.7 Sustainable Design.*** The City shall promote, and where appropriate, require sustainable building practices that consume less energy, water and other resources, facilitate natural ventilation, use daylight effectively, and are healthy, safe, comfortable, and durable. Projects shall include, unless deemed infeasible by the City, the following sustainable design features.

A. Energy Efficient Structure. Utilize building standards and materials that achieve or surpass best practices for energy efficiency.

B. Energy-Efficient Appliances. Utilize appliances, including air conditioning and heating systems that achieve high energy efficiency. Incorporation of alternative energy systems (e.g. passive and/or active solar, heat pumps) is encouraged.

C. Naturalized Ventilation. Optimized potential for cooling through natural ventilation.

D. Plumbing. Utilize plumbing fixtures that conserve or reuse water such as low flow faucets or grey water systems and implement a builder incentive program that will encourage new homes to be built with onsite water/heat recycling systems to help achieve the goal of net zero water and energy use.

E. Efficient Landscaping. Include landscaping that reduces water use through use of drought-tolerant/native plant species, high-efficiency irrigation (drip irrigation), and reduction or elimination of the use of turf. Collection and use of site runoff and rainwater harvesting in landscape irrigation is encouraged.

F. Solar Orientation. Optimize solar orientation of structures to the extent possible.

G. Privacy and Solar Access. New buildings outside of the downtown will respect the privacy and solar access of neighboring buildings and outdoor areas, particularly where multistory buildings or additions may overlook backyards of adjacent dwellings.

H. Solar Ready. The City shall encourage new development to be build “solar ready” so that owners may easily install solar infrastructure, as appropriate.

I. Solar Canopies. The City shall encourage the inclusion of solar canopies that include solar panels (such as structures over parking lots) on new construction, as appropriate.

***Policy LU 9.13 Incentive Program.*** The City shall consider the feasibility of providing incentives for new and renovate projects that incorporate sustainable design features such as constructing new buildings that are solar ready, or off-setting significant operational energy use through use of solar water heating, photovoltaic systems, geothermal or wind energy systems.

*Water & Wastewater Management Element (WWME)*

***Policy WWME A 2.2.1 Multiple Water Sources.*** The City shall utilize multiple water resources to meet its water supply needs.

***Policy WWME B 2.2.2 Service Capacity.*** The City's wastewater collection system and Water Resource Recovery Facility shall support population and related service demands consistent with the General Plan.

***Policy WWME B 2.2.3 Wastewater Service for New Development.*** New development shall pay its proportionate or "fair share" of expanded treatment and collection system capacity and upgrades. New development will only be permitted if adequate capacity is available within the wastewater collection system and/or Water Resource Recovery Facility.

***Policy WWME A 7.2.1 Recycled Water Supply***. The City will make available recycled water to substitute for existing potable water uses as allowed by law and to supply new non-potable uses.

*Conservation and Open Space Element (COSE)*

***Policy COS 4.3.1 Use of best available practices.*** The City will employ the best available practices in energy conservation, procurement, use and production, and will encourage individuals, organizations and other agencies to do likewise. "Best available practices" means behavior and technologies that reflect recommendations of specialists and that use the least energy for a desired outcome, considering available equipment, life-cycle costs, social and environmental side effects, and the regulations of other agencies. Best available practices include use of sustainable sources. Sustainable sources are naturally renewed in a relatively short time and avoid substantial undesirable side effects.

***Policy COS 4.3.3 Energy-efficient improvements.*** The City will continue to identify energy efficiency improvement measures to the greatest extent possible, undertake all necessary steps to seek funding for their implementation and, upon securing availability of funds, implement the measures in a timely manner.

***Policy COS 4.3.4 Use of Energy Efficient, Renewable Energy Resources.*** The City will promote the use of cost effective, renewable, non-depleting energy sources wherever possible, both in new construction projects and in existing buildings and facilities.

***Policy COS 4.3.6 Energy Efficiency and Green Building in New Development.*** The City shall encourage energy-efficient "green buildings" as certified by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Program or equivalent certification.

***Policy COS 4.4.1 Pedestrian- and Bicycle-friendly Design.*** Residences, work places and facilities for all other activities will be located and designed to promote travel by pedestrians and bicyclists.

***Policy COS 4.4.2 Alternative Transportation.*** The City's transportation and circulation systems shall foster travel by modes other than motor vehicles, including walking, bicycles and public transit.

***Policy COS 4.5.1 Solar Access Standards.*** To encourage use of solar energy, reasonable solar access shall be provided and protected. The City will protect reasonable solar exposure for existing collectors and likely locations of future collectors, both active and passive. Standards for the subdivision and development of property should assure desirable solar access.

***Policy COS 4.5.2 Subdivision Design for Solar Access.*** In subdivisions, the layout of streets and lots shall provide and protect solar exposure. To assure the maximum control over potential shading features, the longest dimension of each lot should be oriented within 30 degrees of south, unless the subdivider demonstrates that for certain lots any of the following applies:

A. The lots are large enough to allow desirable solar access, regardless of lot orientation.
B. Buildings will be constructed as part of the tract development, and the buildings will be properly oriented, with adequate solar access.
C. Topography makes variations from the prescribed orientation desirable to reduce grading or tree removal, or to take advantage of a setting that would favor greater reliance on early morning or late afternoon solar exposure.
D. Topographical conditions, such as steep, north-facing slopes or shading by the mass of a hill, make solar energy infeasible.
E. The size of the subdivision, combined with the existing orientation of surrounding streets and lots, precludes desirable lot orientation.

***Policy COS 4.5.3 Solar Access Easements.*** Solar access easements will be required in all new subdivisions, as provided in the State of California Solar Rights Act, unless any of the following applies:

A. The subdivision incorporates a building development plan that will assure desirable solar access.

B. Desirable solar exposure will be protected by the City's Zoning Regulations.

C. The subdivision establishes yard or height standards designed to assure desirable solar access, supplementary to the Zoning Regulations, which would make a system of easements for each lot unnecessary.

***Policy COS 4.5.7 Unwanted Solar Heat Gain.*** Sites and buildings should be designed to avoid unwanted heat gain from solar exposure. Features that provide shading at suitable times of the day and year and generally should be "passive" or automatic, avoiding the need for occupants to regularly monitor or adjust them.

***Policy COS 4.6.5 Encourage Sustainable Employee Commuting Practices.*** Encourage alternatives to employees commuting as occupants of individual vehicles powered by non-sustainable fuels.

***Policy COS 4.6.8 Energy Efficient Project Design.*** Encourage energy-efficient project design by emphasizing use of daylight and solar exposure, shading and natural ventilation, as opposed to designing a particular image and relying on mechanical systems to maintain functionality and comfort. Educate City staff, citizen advisers, developers and designers on ways to exceed minimum state energy standards.

***Policy COS 4.6.9 Solar Access for New Development.*** Address solar access in all plans needing City discretionary approval, considering both structures and vegetation. Shading by vegetation is also subject to the California Solar Shade Control Act. This act prohibits the placement of vegetation that would shade a solar collector on another's property, if the collector meets certain height and setback criteria. The City will advise those seeking permits for solar collectors to document vegetation existing when the collector is installed or built.

***Policy COS 4.6.11 Financial Assistance for Energy Efficiency Improvements.*** The City will actively seek all available sources of funding for implementing energy efficiency improvement and utilities infrastructure renewable projects, including federal and state budget appropriations, federal, state, and private sector grant opportunities, utilities and other unique public/private sector financing.

***Policy COS 4.6.17 Require Solar Power for New Dwellings.*** Within new single-family residential projects of 20 or more dwelling units, 5 percent of the total number of dwellings shall be built with photovoltaic solar collectors beginning in 2008; this percentage shall

increase 4 percent each year until 2020. Multi-family residential developments shall be exempt from this requirement, except for common-use facilities such as recreation rooms, spas, or swimming pools. In these cases, the common facilities shall be built with photovoltaic solar collectors.

***Policy COS 5.4.3 Material Recycling in Private Development, Businesses, and Operation.*** The City will promote waste diversion and material recycling in private development, business and operations, and will encourage businesses or nonprofit entities to provide building materials recycling and source reduction services.

***Policy COS 5.5.8 Recycling Facilities in New Development.*** During development review, the City shall require facilities in new developments to accommodate and encourage recycling.

***Policy COS 10.2.2 Ahwahnee Water Principles.*** In planning for its water operations, programs and services, the City will be guided by the Ahwahnee Water Principles and will encourage individuals, organizations, and other agencies to follow these policies:

A. Community design should be compact, mixed use, walkable and transit-oriented so that automobile generated urban runoff pollutants are minimized and the open lands that absorb water are preserved to the maximum extent possible.

B. Natural resources such as wetlands, flood plains, recharge zones, riparian areas, open space, and native habitats should be identified, preserved and restored as valued assets for flood protection, water quality improvement, groundwater recharge, habitat, and overall long-term water resource sustainability.

C. Water holding areas such as creekbeds, recessed athletic fields, ponds, cisterns, and other features that serve to recharge groundwater, reduce runoff, improve water quality and decrease flooding should be incorporated into the urban landscape.

D. All aspects of landscaping from the selection of plants to soil preparation and the installation of irrigation systems should be designed to reduce water demand, retain runoff, decrease flooding, and recharge groundwater.

E. Permeable surfaces should be used for hardscape. Impervious surfaces such as driveways, streets, and parking lots should be minimized so that land is available to absorb storm water, reduce polluted urban runoff, recharge groundwater and reduce flooding.

F. Dual plumbing that allows grey water from showers, sinks and washers to be reused for landscape irrigation should be included in the infrastructure of new development, consistent with state guidelines.

G. Community design should maximize the use of recycled water for appropriate applications including outdoor irrigation, toilet flushing, and commercial and

industrial processes. Purple pipe should be installed in all new construction and remodeled buildings in anticipation of the future availability of recycled water.

H. Urban water conservation technologies such as low-flow toilets, efficient clothes washers, and more efficient water-using industrial equipment should be incorporated in all new construction and retrofitted in remodeled buildings.

I. Ground water treatment and brackish water desalination should be pursued when necessary to maximize locally available, drought-proof water supplies.

***Policy COS 10.3.1 Efficient Water Use.*** The City will do the following in support of efficient water use, and will encourage individuals, organizations, and other agencies to do likewise:

A. Landscaping:

1. Choose plants that are suitable for the climate and their intended function, with emphasis on use of native and drought-tolerant plants.
2. Prepare soils for water penetration and retention.
3. Design and operate suitable and efficient irrigation systems.
4. The City will encourage drought-tolerant landscaping, vegetable gardens and fruit trees in lieu of large expanses of lawn or other more water-demanding plantings.
5. Landscape maintenance: Landscaped areas will be properly designed for upkeep and replacement of low-flow irrigation fixtures and equipment.
6. Facilitate use of tertiary-treated water and seek to legalize use of grey water for non-potable household purposes.

*Circulation Element (CE)*

***Policy 1.7.1. Encourage Better Transportation Habits***. San Luis Obispo should: 1. Increase the use of alternative forms of transportation and depend less on the single-occupant use of vehicles; and 2. Ask the San Luis Obispo Regional Transportation Agency to establish an objective similar to #1 and support programs that reduce the interregional use of single-occupant vehicles and increase the use of alternative forms of transportation.

***Policy 1.7.2. Promote Alternative Forms of Transportation***. San Luis Obispo should: 1. Complete a network of bicycle lanes and paths, sidewalks and pedestrian paths within existing developed parts of the city by 2035, and extend the system to serve new growth areas; 2. Complete improvements to the city's transit system serving existing developed areas by 2035, and provide service to new growth areas; 3. Support the efforts of the County Air Pollution Control District to implement traffic reduction programs; and 4. Support and develop education programs directed at promoting types of transportation other than the single-occupant vehicle.

San Luis Obispo Municipal Code

***Title 13 - Public Services.*** Title 13 of the City Municipal Code provides regulations and standards for development within the City relating to public services, including water service, water conservation, sewers, underground utilities, and recycled water.

***Chapter 8.05, Mandatory Construction and Demolition Debris Recycling Program (Ordinance 1381).*** Chapter 8.05 of Title 8 of the City Municipal Code establishes the City's program for the mandatory recycling of construction and demolition debris. This program requires any applicant for a building or demolition permit complete and submit to the City for review and approval a recycling plan estimating the volume or weight of project construction and demolition debris and a plan for recycling of at least 50 percent of the weight of all debris.

San Luis Obispo Urban Water Management Plan (UWMP)

The City adopted its 2015 UWMP on June 14, 2016, which provides the State of California's Department of Water Resources an assessment of the City's present and future water resources needs. Specifically, this document provides water supply planning for a 25-year planning period in 5-year increments. Part of the recent amendment was the addition and enhancement of the Water Shortage Contingency Plan. The plan identifies water supplies for existing and future demands; quantifies water demands during the normal year, single-dry year and multiple-dry years; and identifies supply reliability under the three hydrological conditions. The UWMP document has been prepared in compliance with the requirements of the Urban Water Management Planning Act as amended in 2009.

City of San Luis Obispo Climate Action Plan

The City's Climate Action Plan, adopted by Resolution No. 10388 in 2012, is a strategic document, based on the idea that effective global solutions to climate change will largely be the result of collective action of local communities and governments. The Climate Action Plan enables the City to maintain local control of implementing state direction (AB 32 – the California Global Warming Solutions Act) to reduce GHG emissions to 1990 levels by 2020. GHG reduction strategies align with existing General Plan policies, and adoption of a Climate Action Plan is an "Other Important Objective" in the City's 2011-13 Financial Plan.

The Climate Action Plan proposes strategies to reduce GHG emissions from community-wide activities and government operations. Community-wide activities are broken down

into six focus areas: buildings, renewable energy, transportation and land use, water, solid waste, and parks and open space. Corresponding goals include: energy-efficient buildings, clean and renewable energy sources, improved transportation options, reduced water consumption, reduced waste, and maintenance and growth of the urban forest.

The City is currently engaged in the process of updating its Climate Action Plan to identify new measures and targets to achieve or exceed the State's GHG reduction targets identified for the year 2030 under SB 32. In addition, the City, in a City Council hearing held on September 18, 2018, declared its intent to adopt a target for achieving citywide carbon neutrality by the year 2035. The update to the Climate Action Plan will identified new measures and policies applicable to development within the City for reducing carbon emission from various sources, include energy consumption, to achieve this target.

Clean Energy Choice Program

The City is currently developing local amendments to the 2019 California Building Code to encourage all-electric new buildings. When paired with MBCP's carbon free electricity supply, all electric new buildings are carbon free and avoid health and safety issues associated with fossil fuels. At its meeting on Tuesday, September 3, 2019, the City Council approved the Clean Energy Choice Program, which involves ordinance amendments that take effect January 1, 2020. The City joins more than 50 other California communities currently considering ways to encourage cleaner buildings. Unlike some cities that are banning natural gas entirely, the proposed Clean Energy Choice Program will provide options to people who want to develop new buildings with natural gas. New projects wishing to use natural gas will be required to build more efficient and higher performing buildings and offset gas use by performing retrofits on existing buildings or by paying an in-lieu fee that will be used for the same purpose.

## 3.14.3 Environmental Impact Analysis

### 3.14.3.1 Thresholds for Determining Significance

Thresholds are based upon Appendix G of the State CEQA Guidelines. Implementation of the Project would have significant adverse impacts on utilities if the Project would:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;

b) Not 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 inadequate 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; or
e) Not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Implementation of the Project would have significant adverse impacts on energy if the Project would:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

### 3.14.3.2 Impact Assessment Methodology

Existing and forecasted capacities of public and private utility service providers were obtained from the General Plan WWME (2018), 2015 UWMP (2016), Wastewater Master Plan (2015), Wastewater Collection System Infrastructure Renewal Strategy (2015), Recycled Water Master Plan (2017), the City's Water Resources Status Report (2018), the Sewer System Management Plan Update (2019), and reports including a Project-specific Water Supply Assessment (WSA) performed by RRM Design Group (2019) for the Project (see Appendix K) and reviewed/approved by the City's Utilities Department. The General Plan WWME and coordination with the City's Utilities Department provided additional information used to establish levels of significance for water supply and distribution, and sewer system impacts.

Energy resource information is based on energy use data reported by the CEC, Caltrans, estimated energy demands for the Project based upon California Emissions Estimator Model (CalEEMod) v. 2016.3.2 modeling results (see Appendix D), and energy conservation goals and policies established in the City's Climate Action Plan (2012).[2]

This analysis evaluates the adequacy of existing and planned utility infrastructure to serve the proposed Project. Projected increased demands for public and private utility service resulting from the proposed Project were calculated using local demand factors from adopted City plans and policies or energy demand and conservation standards. Project demand for water, wastewater, and solid waste are based on demand factors found within the General Plan, as well as information provided within the Project-specific WSA. Water demand for the proposed Project site was compared to water available for allocation within the City and wastewater generation was compared to available capacity at the City's WRRF and supporting infrastructure such was sewer mains and lift stations. Energy providers for the Project (PG&E, MBCP, and SoCal Gas) also serve much larger service areas. Demand estimations for natural gas and electricity are based on CalEEMod results (Appendix D) and associated use factors. Impacts related to stormwater management infrastructure, site hydrology, and drainage/storage capacity are addressed in Section 3.8, *Hydrology and Water Quality* and are therefore, not addressed further in this section.

### 3.14.3.3 Project Impacts and Mitigation Measures

This section discusses utility and energy impacts associated with the construction and operation of the Project. Utility and energy impacts associated with the Project are summarized in Table 3.14-6.

[2] The City is currently updating the Climate Action Plan; see also, Section 3.3, *Air Quality and Greenhouse Gas Emissions*.

**Table 3.14-6. Summary of Project Impacts**

| Utility Impacts | Mitigation Measures | Residual Significance |
|---|---|---|
| UT-1. The Project would require the expansion of utility infrastructure to serve new development, including water, sewer, natural gas, and electricity into the site; the construction of which could cause environmental effects. | MM AQ-1<br>MM BIO-1<br>MM CR-3<br>MM CR-4<br>MM CR-5<br>MM HAZ-1<br>MM HYD-1<br>MM HYD-2<br>MM NO-1<br>MM NO-2<br>MM NO-3<br>MM NO-4<br>MM TRANS-1<br>MM UT-1 | Less than Significant with Mitigation |
| UT-2. Project-related increases in water use would increase demand for the City's potable water supply. | None required | Less than Significant |
| UT-3. Project-generated wastewater would contribute to demand for wastewater collection facilities and remaining available and planned capacity of the City's WRRF. | MM UT-2 | Less than Significant with Mitigation |
| UT-4. The Project would generate additional solid waste for disposal at the Cold Canyon Landfill. | None required | Less than Significant |
| UT-5. The Project would result in an increase of energy consumption and requirement for additional energy resources. | None required | Less than Significant |

**Impact UT-1 The Project would require the expansion of utility infrastructure to serve new development, including water, sewer, natural gas, and electricity into the site; the construction of which could cause environmental effects (Less than Significant with Mitigation).**

The Project would install new underground infrastructure and connections to provide associated utility services to the Project site (refer to Figure 2-13 and Figure 2-14). Potential onsite construction would include trenching for utility installation, transport of pipes and other material to the site, and associated increases in construction-related traffic. Onsite trenching could impact sensitive biological or subsurface cultural resources, lead to increased erosion and possible sedimentation, and generate noise. Offsite trenching would occur along LOVR and may adversely affect traffic, cause delays or congestion, and generate air emissions. These impacts are further described below; construction impacts are also evaluated throughout this EIR for affected resource areas.

The proposed water and wastewater lines would tie into the City's water supply, including potable and recycled water, and wastewater collection systems, both located along LOVR adjacent to the Project site's northeastern boundary (refer to Section 2.4.4, *Utilities and Services*). The proposed water and wastewater lines would follow the Project's proposed street alignments with lateral connections to proposed buildings and would be installed concurrent with roadway construction during Phase 1 of the Project. Individual lateral connections to proposed building would be installed during vertical construction activities of Phases 2 through 4.

The proposed gravity wastewater lines within the Project site would transport flows to the existing 18-inch gravity wastewater main located along the southern shoulder of LOVR. Flows would then be conveyed south to the Calle Joaquin lift station, and then through the existing force main to a gravity sewer main that crosses U.S. 101 to the Laguna lift station and ultimately to the WRRF. The proposed water lines would convey potable water to Project buildings from the City's water distribution system located approximately 75 feet east of the Specific Plan area boundary.

Construction of this system of water and wastewater lines would potentially require trenching and disturbance of agricultural grazing land and potential wetland and riparian habitats, along with potential for erosion, sedimentation, air quality, and GHG emissions associated with construction. One of these proposed water mains would cross the Froom Creek corridor near the eastern edge of the Project site. For the Madonna Froom Ranch portion of the Project site, the gravity lines would follow the proposed Local Road "A" connection with LOVR at the Auto Park Way intersection, which would result in grading and construction across wetlands within the LOVR ditch (see Section 3.4, *Biological Resources*). The gravity lines within the Villaggio portion of the Project site would cross portions of Drainage 2 and 3 and serpentine grassland habitats and then cross Froom Creek with potential construction impacts to sensitive habitats (refer to Section 3.4, *Biological Resources* and Section 3.7, *Hydrology and Water Quality)*. Utility line construction could also impact unknown subsurface archaeological resources (see Section 3.5, *Cultural and Tribal Cultural Resources*). Construction of these lines would generate noise and traffic along LOVR, as discussed within Section 3.9, *Noise*, and Section 3.13, *Transportation and Traffic*. This construction would also have the potential to release hazardous materials contamination into proximate sensitive areas or surface waters, as discussed in Section 3.7, *Hazards, Hazardous Materials, and Wildfire*.

Construction of underground utilities including gas and electrical utilities would also include excavation and trenching within the Project site to install subterranean pipelines, gas lines, and electrical conduits. Construction of gas and electrical utilities would occur in conformance with the Uniform Plumbing Code and City standards and would be subject to review and approval of proposed utility plans by the City Utilities Department as a standard regulatory requirement.

Construction of proposed new utilities to serve the Project would have the potential to disturb biological and cultural resources, adversely affect hydrology and water quality, and generate hazardous materials, noise, traffic, and air emissions, which would be *potentially significant*. Construction mitigation measures to reduce these impacts are discussed in relevant resource sections (i.e., Section 3.3, *Air Quality and Greenhouse Gas Emissions*, Section 3.4, *Biological Resources*, Section 3.5, *Cultural and Tribal Cultural Resources*, Section 3.7, *Hazards, Hazardous Materials, and Wildfire,* Section 3.8, *Hydrology and Water Quality*, Section 3.10, *Noise*, and Section 3.13, *Transportation and Traffic*).

Mitigation Measures

*MM AQ-1 shall apply.*

*MM BIO-1 shall apply.*

*MM CR-2 shall apply.*

*MM CR-3 shall apply.*

*MM CR-4 shall apply.*

*MM HAZ-1 shall apply.*

*MM HYD-1 shall apply.*

*MM HYD-2 shall apply.*

*MM NO-1 shall apply.*

*MM NO-2 shall apply.*

*MM NO-3 shall apply.*

*MM NO-4 shall apply.*

*MM TRANS-1 shall apply.*

*MM UT-1* *The Applicant shall amend the FRSP to require that the size, location, and alignment of all on- and offsite water supply, recycled water, wastewater, and energy infrastructure shall be subject to review and approval by the City's Public Works and Utilities Departments. The Applicant shall be responsible for constructing all required onsite and offsite utility improvements, as well as for repaving of damaged roadways.*

**Plan Requirements and Timing.** The Applicant is required to implement the above standard mitigation measures prior to approval of grading and the final VTM. City staff shall ensure the above measures are incorporated into the Final FRSP and building plans prior grading and recordation of the final VTM.

**Monitoring.** City staff shall ensure measures are on all Project plans. City staff shall work with the Applicant to ensure that these requirements are implemented.

Residual Impacts

Mitigation required above would ensure utility installation would avoid significant impacts to onsite natural resources (e.g., horizontal directional drilling below wetland areas to avoid disturbance, onsite monitoring for cultural resources), minimize risk of hazardous materials release, and control construction traffic, noise, and air emissions. MM UT-1 would ensure Project utilities are engineered consistent with City standards. With implementation of mitigation measure MM UT-1, as well as construction-related mitigation measures for air quality, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, and transportation and traffic, residual impacts would be *less than significant with mitigation*.

**Impact UT-2 Project-related increases in water use would increase demand for the City's potable water supply (Less than Significant).**

Though construction of the Project would result in demand for water supplies for fugitive dust control, establishment of vegetation for habitat replacement and creation, and other purposes, this water is likely to be trucked from offsite or pumped from the existing groundwater well onsite. This water is not anticipated to come from the City's existing water supply and is not considered as part of the Project's impact on the City's potable water supply. The proposed Project during operation would increase water demand within the City.

The Project's WSA estimated a Project-created water demand using the 1999 City of San Luis Obispo Water Use Factors based on a breakdown of land uses (Table 3.14-7). The WSA estimated an indoor potable water demand of 134.6 AFY. The WSA estimated outdoor water demand at 39.59 AFY based on mapping of the proposed irrigated water use zones to determine outdoor irrigation recycled water demands; the Project proposes to irrigate all landscaping with recycled water (see Appendix K). Using the WSA-estimated total indoor water demand for the proposed land uses and the WSA-estimated outdoor irrigation water demand values, the total water demand of the Project is estimated at approximately 174.18 AFY.

This analysis additionally assumes the Project would require approximately 62.25 AFY of recycled water, as indicated by the WSA and associated City Water Use Factors. The Project's indoor water demand, outdoor water demand, and recycled water demand result in a total cumulative demand of 236.48 AFY of demand.

The estimated long-term Project-generated demand for potable water of 236.48 AFY would be 10 percent of the City's 2,271 AFY of available water. Therefore, the City would have potable water supply capacity to serve the Project (Table 3.14-8), including consideration for dry years and multiple dry years (drought), as depicted by Table 3.14-5.

According to Tables 5 and 6 of the City's *2017 Recycled Water Master Plan*, the City has a short-term and long-term surplus of recycled water Considering the Project's estimated recycled demand for 62.25 AFY of recycled water[3], available surplus recycled water, sufficient supplies exist to service the proposed Project. The City continues to monitor recycled water storage constraints and treatment plant limitations to ensure an adequate recycled water supply would be available to all City recycled water customers.

Consistent with Ahwahnee Water Principles and the City's General Plan, COSE Policy 10.2.2, the Project would use recycled water for irrigation of the Project site's landscaping and habitat restoration areas. Based on these water demand projections, there would be a sufficient supply of water to meet the Project's needs, and impacts would be *less than significant*.

[3] The City's *2017 Recycled Water Master Plan* included an estimate of the recycled water demand from the Froom Ranch Specific Plan area as approximately 60 acre -feet per year.

## Table 3.14-7. Estimated Water Demand from Project WSA based on City Water Use Factors

| Areas | Quantity and Units | Water Use Factor (AFY)[1] | Outdoor Water Demand (AFY) | Indoor Water Demand (AFY) | Total Water Demand Estimation (AFY) |
|---|---|---|---|---|---|
| **MADONNA FROOM RANCH** | | | | | |
| Housing (R-3 attached townhomes) | 130 dwellings | 0.3 | 0 | 39.0 | 39.0 |
| Apartments (R-4 multi-family/ affordable) | 44 apartments | 0.18 | 3.1 | 4.8 | 7.9 |
| Commercial – Retail | 30,000 sf | 0.06 | 0.5 | 1.3 | 1.8 |
| Hotel (with restaurant) | 120 rooms | 0.43 | 15.5 | 36.1 | 51.6 |
| Basin Planting | 2.8 acres | ** | ** | ** | ** |
| Parks, Trails, Parkways, and Open Space (including creek planting) | 11.3 acres | ** | ** | ** | ** |
| **Subtotal** | | | 19.1 | 81.2 | 100.3 |
| **VILLAGGIO** | | | | | |
| Independent Living (standalone residential units) | 61 dwellings | 0.3 | 0 | 18.3 | 18.3 |
| Garden, Village Suite and Standard Apartment Units (senior) | 305 apartments | 0.1 | 12.2 | 18.3 | 30.5 |
| Assisted Living Units (senior apartments) | 38 apartments | 0.1 | 1.5 | 2.3 | 3.8 |
| Memory Care and Skilled Nursing (beds) | 51 occupants | 0.08 | 1.63 | 2.45 | 4.08 |
| Commercial – Mixed Use Occupancy | 51,500 sf | 0.06 | 0.93 | 2.16 | 3.09 |
| Maintenance Office | 5,300 sf | 0.032 | 0.05 | 0.12 | 0.17 |
| Restaurants | 8,000 sf | 1.32 | 3.17 | 7.39 | 10.56 |
| Fitness Facility with Pool | 13,000 sf | 0.26 | 1.01 | 2.37 | 3.38 |
| Common Area Landscaping | 15.6 acres | ** | ** | ** | ** |
| **Subtotal** | | | 20.49 | 53.39 | 73.88 |
| **Total (AFY)** | | | 39.59 | 134.59 | 174.18[2] |

Source: Water Supply Assessment 2019; see Appendix K.
[1]Water Use Factors from the 1999 City of San Luis Obispo Water Use Factors.
[2]Does not reflect total potable water demand, nor total demand for the Project. The indoor domestic demands were calculated using the City's water use factors percentage of indoor water use to determine the domestic water use since landscape water is proposed to be irrigated with recycled water for all uses.
** values indicate a recycled water use separate from potable water use.
AFY = acre-feet/year sf = square feet

## Table 3.14-8. City Water Supply Availability and Froom Ranch Water Usage

| City Primary Water Supply | City Water Usage | City Primary Water Supply Available | Froom Ranch Specific Plan use (calculated by use factors) |
|---|---|---|---|
| 7,496 AFY | 5,225 AF in 2018 | 2,271 AFY | 236.48 AFY |

AFY = acre-feet/year

**Impact UT-3 Project-generated wastewater would contribute to demand for wastewater collection facilities and remaining available and planned capacity of the City's WRRF (Less than Significant with Mitigation).**

Using wastewater generation factors provided by the General Plan LUE and indoor water demand estimates from 3.14-7, the Project is estimated to generate from 85,689 gpd and 120,154 gpd of new wastewater flows to the City's sewer system and the WRRF, resulting in an incremental increase to wastewater flows Citywide (see Table 3.14-9).

**Table 3.14-9. Wastewater Projections Resulting from the Project.**

| Specific Plan Proposed Development[1] | Quantity | Land Use Type[2] | Wastewater Generation Factor[2] | Wastewater Flow |
|---|---|---|---|---|
| **VILLAGGIO** | | | | |
| **Independent Living Units** | 366 units | Multi-Family | 105 gallons/unit/day | 38,430 gpd |
| **Assisted Living Units** | 38 units | Single-Family | 150 gallons/unit/day | 5,700 gpd |
| **Health Care Units** | 51 beds | Single-Family | 150 gallons/unit/day | 7,650 gpd |
| **Health Care Administration Building** | 85,078 sf | Office | 54 gallons/1,000 sf/day | 4,594 gpd |
| **Ancillary Uses** | 84,078 sf | Commercial | 60 gallons/1,000 sf/day | 5,045 gpd |
| **Villaggio Subtotal** | | | | **61,419 gpd** |
| **MADONNA FROOM RANCH** | | | | |
| **Medium-High Density Residential** | 130 units | Multi-Family | 105 gallons/unit/day | 13,650 gpd |
| **High Density Residential** | 44 units | Multi-Family | 105 gallons/unit/day | 4,620 gpd |
| **Hotel with Restaurant** | 70,000 sf | Commercial | 60 gallons/1,000 sf/day | 4,200 gpd |
| **Other Commercial** | 30,000 sf | Commercial | 60 gallons/1,000 sf/day | 1,800 gpd |
| **Madonna Froom Ranch Subtotal** | | | | **24,270 gpd** |
| **Grand Total** | | | | **85,689 gpd** |

gpd = gallons per day
[1]Refer to Table 2-2 for summary list of proposed development
[2]City of San Luis Obispo LUCE EIR 2014a Table 4.16-7.

Wastewater generated at the Project site would be conveyed to the Calle Joaquin lift station, through a force main north to the Laguna lift station, and then conveyed to the City's WRRF for treatment. As discussed above, the Calle Joaquin lift station does not experience

capacity issues and is capable of accommodating Project flows. However, the City notes the gravity main that extends under U.S. 101 to the Laguna lift station currently experiences capacity issues and needs replacement in order to accommodate new development within the service area of this lift station, particularly the recently approved San Luis Ranch development (Personal communication with Jennifer Metz, City of San Luis Obispo Utilities Department, May 2019). Operation of the Project and associated new wastewater flows to this lift station would contribute towards existing capacity constraints, resulting in need for upsizing the gravity main under U.S. 101.

According to the City's Utilities Department, in 2018 the City's WRRF treated an average of 3.3 MGD wastewater of its 5.1 MGD design capacity, during dry-weather conditions. The Project would contribute additional wastewater to the WRRF, beginning in 2022 with operation of the Lower Area of Villaggio. Since the WRRF has ample service capacity, the Project's contribution would not exceed dry-weather wastewater treatment capacity. Further, as discussed below, improvements to capacity treatment facilities at the WRRF are underway.

The 2015 WRRF Facilities Plan addresses upgrades of the WRRF in response to stricter discharge limits required by the Central Coast RWQCB to increase dry-weather wastewater treatment capacity to serve the City's population at General Plan buildout, and to replace existing aging facilities at the end of their service life. Construction of the WRRF upgrade will be initiated in late 2019, and the WRRF's capacity will increase to 5.4 MGD upon completion (City of San Luis Obispo 2019). These pending WRRF upgrades would increase capacity to handle dry-weather flow anticipated under full buildout of the City General Plan and improve the facilities capabilities in treating wet-weather flow.

During wet-weather conditions, the Project would incrementally exacerbate the existing deficiency of the WRRF to process and treat peak flows that can exceed 20 MGD under existing conditions. While peaks in wastewater flow may result in permit violations and release of effluent to San Luis Obispo Creek, the Project's contribution of 85,689 gpd to 120,154 gpd to this existing issue is nominal.

Any wastewater pipe installed as part of the Project would be consistent with City standards for new pipeline material and sizing to adequately convey Project's wastewater effluent to the WRRF; the City has not experienced inflow and infiltration issues in newer construction; therefore, the Project is not likely to exacerbate the cause of current wet-weather peak flows as a result of inflow and infiltration. Further, to help offset the effects of wastewater generation, new development is required to pay development impact fees to

the City for the connection to a public sewer. As the Project would require the connection to the City collection system, the Applicant would be subject to development impact fees implemented by the City for utility services to offset any impacts to capacity at the City's WRRF. Payment of these fees as a condition for Project approval would ensure that the Applicant pays a fair share of costs associated with the wastewater infrastructure needed to serve the Project and ensure adequate WRRF capacity to serve the development.

While the City's WRRF has capacity to serve the Project and mandatory compliance with existing regulations and fee programs would address the Project's contribution to increases in wastewater treatment, impacts associated with the generation of new wastewater flows and the inadequate capacity of the system to serve the Project are considered *potentially significant.*

Mitigation Measures

*MM UT-2* *The Applicant shall pay fair share costs for replacement of the Laguna lift station or construction of capacity improvements through negotiation of a private reimbursement agreement with the City.*

**Plan Requirements and Timing.** Negotiation of a private reimbursement agreement with the City will fulfil the Project's fair share financial obligation towards construction of necessary capacity improvements or replacement of the Laguna lift station. Appropriate fees shall be negotiated with the City. Payment of fees shall be required prior to issuance of building permits for each development phase.

**Monitoring.** The City shall approve the private reimbursement agreement and verify that the Applicant contributes appropriate fair share fees as approved by the City.

Residual Impact

Implementation of MM UT-2 requiring payment of fees to fund the cost of improvements to the Laguna lift station would compensate for the Project's contribution to capacity issues at the Laguna lift station. Residual impacts would be *less than significant with mitigation.*

**Impact UT-4 The Project would generate additional solid waste for disposal at the Cold Canyon Landfill (Less than Significant).**

Non-organic solid waste generated by the Project from future residents, employees, and visitors would be collected and hauled by San Luis Garbage Company to the Cold Canyon Landfill for management and disposal, including recycling. Organic waste generated by the Project would be hauled to the Kompogas Organic Recycling Plant. Expansion of the Cold Canyon Landfill was approved in 2013, increasing capacity from 1,620 to 2,050 tons per day. As of 2015, the Cold Canyon Landfill had 14,500,000 cy of capacity remaining out of its total maximum permitted capacity of 23,900,000 cy, which means that the landfill had approximately 60.7 percent available capacity remaining (CalRecycle 2018). The landfill has an anticipated closure date of 2040; therefore, it is expected that Cold Canyon Landfill has adequate capacity to accommodate the Project's solid waste disposal demands. The Project would contribute an estimated 6.7 tons per day of solid waste (Table 3.14-10). Based on these daily solid waste projections, the Project would contribute approximately 0.3 percent of the potential daily waste capacity of Cold Canyon Landfill. Anticipated increases in waste generated at the Project site would therefore comprise a nominal portion of excess capacity of existing solid waste facilities.

Long-term waste disposal impacts are also minimized by including facilities for the collection and storage of recyclables in the new development. Under the FRSP, Villaggio would include a centralized trash compactor and perform its own trash pick-up and recycling from independent living housing units, assisted units, and other ancillary facilities within the development. This waste would then be collected by San Luis Garbage Company, which implements various strategies and measures for achieving reductions in the solid waste diversion stream to achieve a 75 percent reduction in solid waste by 2020, pursuant SB 341 and City Climate Action Plan strategy WST 1. Significant reductions in the community waste stream generated by the Project would be accomplished through mandatory compliance with Chapter 8.05 of Title 8 of the City Municipal Code, which requires a solid waste reduction plan for recycling discarded construction material be prepared to reduce waste generated from Project construction. Given waste produced by the Project would not substantially affect the landfill's capacity or ability to comply with federal, state, or local regulations. Therefore, impacts regarding the generation of solid waste by the Project would be *less than significant*.

**Table 3.14-10. Estimated Solid Waste Production**

| Waste Generation Source | Proposed Uses | Quantity (# of Units) | Waste Generation Factor | Waste Generation (lbs/day) |
|---|---|---|---|---|
| **VILLAGGIO** | | | | |
| Multi-family | Independent Living Units | 366 units | 8.6 lb/day/unit | 3,147.6 |
| Nursing/Retirement Home | Assisted Living Units | 38 units | 5 lb/person/day[1] | 190 |
| Hospital | Health Care Units | 51 beds | 16 lb/bed/day[1] | 816 |
| Office | Administration Building and Ancillary Uses | 85,078 sf | 0.006 lb/sf/day | 510.5 |
| Commercial Sector (Commercial Retail) | Ancillary Uses | 84,078 sf | 0.046 lb/sf/day | 3,867.6 |
| **Subtotal** | | | | 8,531.7 |
| **MADONNA FROOM RANCH** | | | | |
| Multi-family | Medium-High Density Residential | 130 units | 8.6 lb/day/unit[3] | 1,118 |
| Multi-family | High Density Residential | 44 units | 5.31 lb/day/unit[4] | 233.6 |
| Service Sector (Other Services) | Hotel with Restaurant | 70,000 sf | 3.12 lb/100 sf/day | 2,184 |
| Commercial Sector (Commercial Retail) | Other Commercial | 30,000 sf | 0.046 lb/sf/day | 1,380 |
| **Subtotal** | | | | 4,915.6 |
| **Estimated Total Waste Generation (lbs per day)** | | | **13,447.3** | |
| **Estimated Total Waste Generation (lbs per year)** | | | **4,908,264.5** | |
| **Estimated Total Waste Generation (tons per day)** | | | **6.7** | |
| **Estimated Total Waste Generation (tons per year)** | | | **2,454.1** | |

[1]CalRecycle estimates 5 lb/person/day for nursing/retirement home waste generation, and 16 lb/bed/day for hospitals. As the assisted living component lies within this range, the conservative estimate is used for this analysis.
[3]Utilized highest "Multi-family" generation factor to ensure a conservative analysis.
[4]Utilized second-highest "Multi-family" generation factor to align the estimated generation in comparison to the Medium-High Density Residential proposed use.
Source: CalRecycle 2013a; 2013b; 2013c.

**Impact UT-5 The Project would result in an increase of energy consumption and requirement for additional energy resources (Less than Significant).**

Electricity and Natural Gas Consumption

Implementation of the proposed Project would result in the commitment of additional energy resources, including consumption of natural gas and electricity through operation of the Project. As provided in Appendix D, operation of the proposed Project is estimated to generate a new demand for 128,574.7 therms per year (therms/yr) of natural gas and

5,289.7 megawatt-hours per year (MWh/yr) of electricity (Table 3.14-11) based on CalEEMod modeling results.

**Table 3.14-11. Estimated Project Electricity and Natural Gas Demands**

| Land Use | Area/Quantity | Estimated Electricity Use (MWh/yr)[1] | Natural Gas Demand (therms/yr)[2] |
|---|---|---|---|
| **VILLAGGIO** | | | |
| Independent Living Units | 366 units | 1,661.5 MWh/yr | 37,327.8 therms/yr |
| Congregate Care (Assisted Living and Health Care Units) | 89 units | 367.4 MWh/yr | 7,689.1 therms/yr |
| Administration Building and Ancillary Uses (wellness center, restaurants, theater, etc.) | 169,748 sf | 581.7 MWh/yr | 34,083.8 therms/yr |
| **Subtotal** | | **2,610.6 MWh/yr** | **79,100.7 therms/yr** |
| **MADONNA FROOM RANCH** | | | |
| Medium-High Density Residential | 130 units | 565.3 MWh/yr | 13,258.5 therms/yr |
| High Density Residential | 44 units | 191.3 MWh/yr | 4,487.5 therms/yr |
| Hotel with Restaurant | 70,000 sf | 533.4 MWh/yr | 31,017.0 therms/yr |
| Other Commercial | 30,000 sf | 320.7 MWh/yr | 711.0 therms/yr |
| Other Parking Areas | 274,000 sf | 1,068.4 MWh/yr | 0 |
| **Subtotal** | | 2,679.1 MWh/yr | 49,474.0 therms/yr |
| **Total** | | **5,289.7 MWh/yr** | **128,574.7 therms/yr** |

[1] 1,000 megawatt-hours (MWh) = 1 gigawatt-hours (GWh)
[2] 1 therm = 100 thousand British Thermal Units (BTU)
Source: See Appendix D, CalEEMod Worksheets, Section 5.0 Energy Details.

The City's Clean Energy Choice Program will be effective in 2020 and will apply to Project implementation. Under the City's recently adopted Clean Energy Choice Program, the Project would be encouraged to provide all-electric buildings and paired with MBCP's carbon free electricity supply. It is possible the natural gas demands estimated for the Project could convert to electricity demands; however, it is unknown at this time if this conversion would be feasible for the Project or if the mix of energy sources would potentially change through design and approval of the development projects for Villaggio and Madonna Froom Ranch. Therefore, the energy demand estimates provided in Table 3.14-11 are representative of overall Project energy demands, including natural gas. It is expected that the natural gas buildings will be required to be more efficient and higher performing buildings and offset gas use by performing retrofits on existing buildings or by paying an in-lieu fee that will be used for the same purpose.

Fuel Consumption

*Construction Diesel Fuel*

During the five-year Project construction period, diesel fuel would be required to power heavy construction equipment and trucks. The total construction fuel consumption is calculated as the sum of total estimated fuel consumption for each piece of equipment used in each phase of construction. To calculate total fuel consumption for specific equipment, Section 3.0, *Construction Detail* in the CalEEMod Worksheets located in Appendix D provides detailed construction phasing, construction equipment used in each phase, total number of days worked, equipment horsepower, equipment load factor, and equipment quantities based on typical construction equipment and default model assumptions. Total fuel consumption is then based on a fuel consumption factor of 0.05 gallons per horsepower per hour (gal/hp/hr) for diesel engines as derived from the South Coast Air Quality Management District CEQA Handbook Table A9-3E.[4]

The total fuel to be required during construction of the Project is estimated to be 502,347.2 gallons (Table 3.14-12). Refer to detailed calculations of Project Construction Fuel Consumption in Appendix D.

**Table 3.14-12. Estimated Project Construction Fuel Consumption**

| Phase | Fuel Consumption from Construction Equipment (Gallons) | Fuel Consumption from Construction Vehicle Trips (Gallons) | Totals (Gallons) |
|---|---|---|---|
| **Phase I** | 111,495.1 | 14,509.6 | 126,004.7 |
| **Phase II** | 116,778.8 | 65,195.3 | 181,974.1 |
| **Phase III** | 99,297.6 | 38,489.5 | 137,787.1 |
| **Phase IV** | 40,721.0 | 15,860.3 | 56,581.3 |
| **Grand Total** | **368,292.5** | **134,054.7** | **502,347.2** |

Source: Appendix D.

*Operational Vehicle Fuel Consumption*

Operation of the Project would result in the daily consumption of vehicle fuel for Project trips. As provided in Section 3.13, *Transportation and Traffic*, operation of the Project is anticipated to result in the generation of an additional 46,894 daily VMT, or approximately 5.5 percent of the City's estimated 851,939 daily VMT in 2014 and 0.5 percent of the City's estimated 8,016,501 daily VMT for the year 2035 (City of San Luis Obispo 2014a;

[4] The South Coast Air Quality Management CEQA Handbook details on diesel engine fuel consumption rates represent the best available information on and remain relevant for typical diesel engines.

SLOCOG 2010). Compared to average per capita VMT, the Project would result in higher daily VMT per capita than the City, County, and state (Table 3.14-13). Using vehicle fleet mix data provided in Appendix D and average fuel economy information provided by the Bureau of Transportation Statistics, the Project-generated annual VMT would result in the consumption of approximately 2,548.8 gallons of fuel per day, or an estimated 927,763.2 gallons per year (Table 3.14-14). Refer to Section 3.13, *Transportation and Traffic* for additional discussion regarding Project VMT.

**Table 3.14-13. Per Capita Vehicle Miles Traveled**

| | Population (2018) | Total Daily VMT | Daily VMT per capita |
|---|---|---|---|
| **City** | 46,548 | 851,939 | 18.3 |
| **County** | 281,101 | 8,016,501 | 28.5 |
| **State** | 39,557,045 | 930,958,904 | 23.5 |
| **Proposed Project** | 1,231 | 46,894 | 38.1 |

Source: Appendix J; SLOCOG 2010; City of San Luis Obispo 2014; U.S. Census Bureau 2018, 2019.

**Table 3.14-14. Estimated Operational Fuel Consumption**

| Vehicle Type | Percent of Vehicle Trips[1] | Daily VMT | Average Fuel Economy (miles/gallon)[2] | Total Daily Fuel Consumption (gallons) |
|---|---|---|---|---|
| **Passenger Cars** | 58.9 | 27,620.6 | 23.3 | 1,185.4 |
| **Light/Medium Duty Vehicles** | 34.1 | 15,990.9 | 17.1 | 935.1 |
| **Heavy Duty Vehicles/Other** | 6.6 | 3,095.0 | 7.3 | 424.0 |
| **Motorcycles** | 0.4 | 187.5 | 43.4 | 4.3 |
| **Total** | **100%** | **46,894** | **--** | **2,548.8** |

[1] Percentage of Vehicle Trips and Fleet Mix information provided in Table 4.4, *Fleet Mix* of Appendix D.
-Passenger Cars is the sum of the light-duty-auto fleet mix trip percentage column.
-Light/Medium Duty Vehicles is the sum of the LDT1, LDT2, and MDV fleet mix trip percentage columns.
LDT = light-duty truck; MDV = medium-duty vehicle
-Heavy Duty Vehicles/Other is the sum of the LHD1, LHD2, MHD, HHD, and bus fleet mix trip percentage columns.
LHD = light-heavy-duty; MHD = medium-heavy-duty; HHD – heavy-heavy-duty
Motorcycles is the sum of the MCY fleet mix trip percentage column. MCY = motorcycle
[2] Average fuel economy based on average 2014 U.S. vehicle fuel efficiency (mpg) from Table 4-12: Average Light Duty Vehicle, Long Wheel Base Fuel Consumption and Travel, and Table 4-13: Single-Unit 2-Axle 6-Tire or More Truck Fuel Consumption and Travel of the *National Transportation Statistics*.
Source: Appendix D, CalEEMod Worksheets, Section 4.2. *Trip Summary Information*; Bureau of Transportation Statistics 2016.

Energy Assessment

Operation of the proposed Project would result in the demand for approximately 128,574.7 therms/yr of natural gas, 5,289.7 MWh/yr of electrical supplies, and 927,763.2 gallons/yr of vehicle fuel. Further, construction of the Project is anticipated to result in the total

consumption of an additional 502,347.2 gallons of fuel over a five-year construction period. Based on existing energy demands and capacity of service providers, estimated operational demand for electricity and natural gas as part of the Project would represent less than 0.001 percent of PG&E's and SoCal Gas' total 2018 energy demands for the County. Further, additional vehicle fuel demand under operation of the Project would result in an increase in statewide fuel demand by less than 0.001 percent.

The Project's estimated per capita electricity and natural gas demands would be below City, regional and statewide demands (Table 3.14-15). Based on this comparisons of the Project's electricity and natural gas demands with statewide, regional, and City demand, the proposed Project is not expected to result in the use of a large amount of electricity or natural gas in an unnecessary, wasteful, or inefficient manner, nor would it affect regional supplies or peak/base periods of demand as the estimated energy demand is typical for a Project of this size, and would result in a negligible increase in Citywide and regional demands. The Project would be served by existing utility providers and infrastructure and would not necessitate the expansion of existing facilities or construction of new energy generation or transmission facilities beyond the onsite facilities proposed as part of the Project to serve the new development.

**Table 3.14-15. Comparison of Total and Per Capita Electricity and Natural Gas Demands**

| | | Total | | Per Capita | |
|---|---|---|---|---|---|
| | Population | Natural Gas Demand (therms/yr) | Electricity Demand (MWh/yr) | Natural Gas Demand (therms/yr) | Electricity Demand (MWh/yr) |
| **City**[1] | 46,548 | 9,586,861 | 239,580.9 | 205.9 | 5.1 |
| **County** | 281,101 | 83,787,570 | 1,778,503.6 | 298.1 | 6.3 |
| **State** | 39,557,045 | 12,571,045,750 | 288,613,480.2 | 317.8 | 7.3 |
| **Proposed Project** | 1,231 | 128,574.7 | 5,289.7 | 104.4 | 4.3 |

[1]Electricity and natural gas demands for the City represent demands as of 2016.
Source: CEC 2018; U.S. Census Bureau 2019b; City of San Luis Obispo 2019b.

As shown in Table 3.14-15 above, the Project's per capita electricity demand for natural gas is 49.3 percent less than the 2016 City average, 65.0 percent less than the regional average, and 67.1 percent less than the state average. Electrical demand per capita for the proposed Project is 15.7 percent less than the 2016 City average, 31.7 percent less than the County average, and 41.1 percent less than the state average.

As described in Section 2.0, *Project Description* and Section 3.9, *Land Use and Planning,* the Project would be required to implement and be consistent with existing energy design

standards at the local and state level. The Project would be subject to energy conservation requirements in the California Building Standards Code (Title 24), California Energy Code (Part 6) and CALGreen. Adherence to state code requirements would ensure new energy efficient requirements of Title 24 would be incorporated into the Project, including, but not limited to, installation of efficient appliances and space-conditioning equipment, lighting controls, and development of solar ready buildings. In addition to standard required energy conservation requirements, the Project includes a range of policies and programs that would proactively reduce the construction and operational energy demand of future development of the site, further reducing the Project's potential to result in the wasteful or inefficient use of energy resources, and promote the conservation of energy and fuel (refer to Section 2.4.2.2, *Sustainability Initiatives*). However, it should be noted that energy efficiency improvements provided by these goals, policies, and regulations cannot be quantified for the Project due to the nature of the FRSP as a program document and lack of detail regarding proposed infrastructure and energy efficiency designs.

Based on the above, the demand for energy under the Project is anticipated to be lower than City, County and state average energy demands, and the Project would generally be more efficient than proximate existing uses. When considering the potential for the Project to result in greater conservation of electricity, natural gas, and transportation fuel supplies through the implementation of proposed Project design features not quantified above, the proposed Project's potential to result in adverse impacts on energy resources and conservation is very low. The Project design features and measures listed in Section 4.7 of the Draft FRSP which would improve energy conservation include: requiring orientation of buildings to maximize solar exposure to improve daylighting and overall energy efficiency; adherence to energy efficient design in conformance with the California Building Code with the goal to be Net Zero GHGs in 2020; use of energy efficient appliances and lighting; use of sustainable building materials; and installation of photovoltaic collectors. The Project would also be required to comply with federal, state, and local regulations, pertaining to improved energy efficiency and conservation in both Project construction and operation, further reducing the Project's potential to result in wasteful or inefficient use of energy resources.

In addition, various mitigation measures identified in other sections of this EIR would have the secondary effect of reducing Project energy demands. For instance, MM AQ-3 through -6 require the Project to implement measures which would reduce Project VMT and energy demands. Applicable measures for reducing VMT and associated transportation fuel demands from MM AQ-3 and -6 include, but are not limited to, development of park-and-

ride lots, subsidizing vanpool programs, funding bicycle facility improvements, rideshare programs, provision of senior shuttle services, and car share programs. Applicable measures for reducing electricity and natural gas demands from MM AQ-5 include achievement of 100 percent carbon neutrality consistent with the City's 2035 carbon neutrality target and mandatory requirements for and exceedance of Title 24 Part 11 (CalGreen) minimum standards for all proposed commercial and health-care facilities. These measures are intended to reduce Project energy demands to the maximum extent feasible for the proposed Project and demonstrate commitment to reducing energy demands and the use of energy supplies in as efficient a manner as possible. Therefore, the direct impacts to energy resources and conservation are considered *less than significant.*

### 3.14.3.4 Cumulative Impacts

Implementation of the Project would result in an increased demand for water supply, wastewater treatment, solid waste management, and energy supplies (e.g., electricity, gas, transportation fuel). Other than wastewater treatment, all existing utilities systems have sufficient capacity to provide service to the Project site, as well as to future development under the City General Plan buildout. Implementation of this Project and other proposed or current projects listed in Table 3.0-1 would increase the cumulative demand on utilities; however, these projects would be required to comply with standards for adequate utilities set forth in the City's General Plan, would be subject to City planning and review processes, and would be required to pay development impact fees to offset any contribution to cumulative impacts from utility infrastructure needs and service capacities. As such, and as indicated by the LUCE Update EIR, with implementation of Project-specific mitigation, the Project would not result in any significant or adverse cumulative effects on the supply of water and solid waste. The Project, along with other cumulative development within the City and region, would be required to comply with state and City requirements for implementing energy efficiency measures and help the City achieve carbon neutrality by 2035, which would help to reduce inefficient or wasteful use of energy supplies within existing and future development within the City.

For cumulative impacts to wastewater collection and treatment, the WRRF's capacity to process and treat up to 5.4 MGD of wastewater would be sufficient for flows generated by the Project and the City at General Plan buildout, including the cumulative projects identified in Table 3.0-1, under dry-weather conditions. Under wet-weather conditions, cumulative development could exacerbate the deficiency of the WRRF to process and treat peak flows that can exceed 20 MGD. Since peaks in wastewater flow may result in permit

violations and release of effluent to San Luis Obispo Creek, the contribution of the Project's wastewater plus effluent generated from future pending projects could be cumulatively considerable. However, as described above, any new pipes installed by cumulative projects would be consistent with City standards, including the requirement for seamed sewer lines, and therefore would not result in a considerable contribution to the wet-weather issues that cause peak wet-weather flows due to inflow and infiltration. The WRRF Upgrade Project which would increase capacity to handle both wet-weather and dry-weather flows would help to alleviate the impact of cumulative development on the WRRF's capacity to sufficiently treat the City's wastewater to meet RWQCB standard and avoid periodic spills into San Luis Obispo Creek.

Further, a gravity sewer main to the Laguna lift station serving the southwestern portions of the City (including the Project site) currently experiences capacity issues. Cumulative development within this portion of the City, including the San Luis Ranch development, would contribute towards exceedance of capacity of the wastewater collection system. However, the Project, along with other cumulative development approved within the City and which would be served by this infrastructure, would be required to pay its fair share towards the upsizing of the gravity sewer main.

With implementation of Project-specific mitigation, mandatory compliance with existing regulations and policies, and expansion of the WRRF facility, cumulative impacts to utilities and energy resources, or as a result of installation or expansion of utility infrastructure, are considered *less than significant with mitigation*.