3.4 Energy

This section describes and evaluates effects on energy resources such as electricity, natural gas, and transportation fuels that could result from construction and operation of the proposed project. The section describes the existing energy infrastructure serving the project site and energy consumption from existing uses; summarizes the federal, state, regional, and local laws and regulations related to energy demand and conservation; analyzes the potential impacts of the proposed project related to energy demand; and identifies potentially feasible measures that could mitigate significant impacts.

The information has been prepared in accordance with Public Resources Code (PRC) Section 21100(b)(3), CEQA Guidelines Section 15126.2(b), and CEQA Guidelines Appendix F. Section 15126.2(b) and Appendix F provide that an EIR should evaluate potential impacts of a proposed project as a result of the demand for energy during the project's construction and operational phases and encourage measures to avoid or reduce inefficient, wasteful, or unnecessary consumption of energy.

The analysis in this section was developed based on project-specific construction and operational features described in Chapter 2, *Project Description*, and Section 3.14, *Utilities and Service Systems*. The analysis also accounts for and is consistent with Section 3.6, *Greenhouse Gas Emissions*, and Section 3.13, *Transportation*.

3.4.1 Environmental Setting

State Energy Profile

Total energy usage in California was 7,881 trillion British thermal units (Btu) in 2017 (the most recent year for which these specific data are available), which equates to an average of 200 million Btu per capita per year. These figures place California second among the 50 states in total energy use and 48th in per-capita consumption. Of California's total energy usage, the breakdown by sector is roughly 40 percent transportation, 23 percent industrial, 19 percent commercial, and 18 percent residential. Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum-based fuel consumption is generally accounted for by transportation-related energy use.[1]

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, coal, and nuclear generation resources. Approximately 68 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 32 percent, is imported from the Pacific Northwest and the Southwest. In 2018, California's in-state electricity use was derived from natural gas (35 percent); coal (3 percent); large hydroelectric resources (11 percent); nuclear sources (9 percent); renewable resources that

[1] U.S. Energy Information Administration, California State Profile and Energy Estimates, updated February 21, 2019. Available at http://www.eia.gov/state/data.cfm?sid=CA#ConsumptionExpenditures. Accessed January 2020.

include geothermal, biomass, small hydroelectric resources, wind, and solar (31 percent); and unspecified sources (11 percent).[2]

Regional Setting

Electricity

Electricity, as a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of resources—including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources—into usable energy. The delivery of electricity involves a number of system components for distribution and use. Electricity is distributed through a network of transmission and distribution lines commonly called a power grid.

Energy capacity, or electrical power, is generally measured in watts (W), while energy use is measured in watt-hours. For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 watt-hours. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 watt-hours or 1 kilowatt-hour. On a utility scale, the capacity of a generator is typically rated in megawatts (MW), which is 1 million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours, which is one billion watt-hours.

Pacific Gas and Electric Company (PG&E) provides electrical and natural gas services to approximately 16 million people throughout its 70,000-square-mile service area, across central, coastal, and Northern California, an area bounded by Humboldt County to the north and Kern County to the south.[3] PG&E produces and purchases energy from a mix of conventional and renewable generating sources.

PG&E generates power from a variety of energy sources, including large hydropower (greater than 30 MW), natural gas, nuclear sources, and renewable resources, such as wind, solar, small hydropower (less than 30 MW), and geothermal sources. Approximately 39 percent of PG&E's 2018 electricity purchases were from renewable sources, which is 31 percent greater than the statewide percentage of electricity purchases from renewable sources.[4] In 2018, PG&E sold approximately 87,375,000 MWh to customers.[5] Refer to **Table 3.4-1** for a summary of electricity use.

[2] California Energy Commission, California Total Electricity System Power. Available at https://www.energy.ca.gov/almanac/electricity_data/total_system_power.html. Accessed January 2020.
[3] Pacific Gas and Electric Company, Company Profile. Available at https://www.pge.com/en_US/about-pge/company-information/profile/profile.page. Accessed January 2020.
[4] Pacific Gas and Electric Company, *2018 Power Content Label*, 2019. Available at https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2019/1019-Power-Content-Label.pdf. Accessed January 2020.
[5] Pacific Gas and Electric Company, *2018 Integrated Resource Plan*, August 1, 2018. Available at https://www.pge.com/pge_global/common/pdfs/for-our-business-partners/energy-supply/integrated-resource-planning/2018-PGE-Integrated-Resource-Plan.pdf. Accessed January 2020.

TABLE 3.4-1
EXISTING ANNUAL STATE AND REGIONAL ENERGY USE

Source	Amount
Electricity (State/PG&E)[a]	284,436,262 MWh / 87,375,000 MWh
Natural Gas (State/PG&E)[b]	12,327,096,996 MMBtu / 1,016,713,000 MMBtu
Gasoline (Statewide/Santa Clara County)[c]	15,471,000,000 gallons / 643,000,000 gallons
Diesel (Statewide/Santa Clara County)[c]	3,702,083,333 gallons / 100,000,000 gallons

NOTES:
MMBtu = million British thermal units; MWh = megawatt-hours; PG&E = Pacific Gas and Electric Company

SOURCES:
[a] California Energy Commission, California Energy Consumption Database, 2019. Available at https://ecdms.energy.ca.gov/; Pacific Gas and Electric Company, *2018 Integrated Resource Plan*, August 1, 2018. Available at https://www.pge.com/pge_global/common/pdfs/for-our-business-partners/energy-supply/integrated-resource-planning/2018-PGE-Integrated-Resource-Plan.pdf. Accessed January 2020.
[b] Pacific Gas and Electric Company, Supply and Demand Archives. Available at https://www.pge.com/pipeline/operations/cgt_supplydemand_search.page.
[c] California Energy Commission, 2018 California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2019. Available at https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed January 2020.

In San José, electricity is provided by San José Clean Energy (SJCE), a Community Choice Program organized under California law. SJCE purchases electricity directly from generators, which is then delivered by PG&E over its existing utility lines. Residents and businesses of San José are automatically enrolled in the GreenSource program, which provides 86 percent greenhouse gas (GHG) emissions–free electricity, or can elect to enroll in the "TotalGreen" program, which provides 100 percent GHG emissions–free electricity from entirely renewable sources. Customers can also opt out at any time and continue purchasing electricity from PG&E.

Electricity at distribution voltage (12.47 kilovolts [kV] and 4.16 kV) and sub-distribution voltage is currently provided to the project area by two substations: San José A and San José B. The San José A substation is located adjacent to Diridon Station within the project boundary, while San José B is located approximately one-quarter mile northeast of the project site, at Coleman Avenue between the Guadalupe River and State Route 87. PG&E is expected to provide electrical power for the proposed project at transmission voltage (115 kV) to a project area substation within the Southern Zone for District Infrastructure (described in Chapter 2, Section 2.8.6, *Central Utility Plants and District Utilities*).

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs and delivered through high-pressure transmission pipelines. Natural gas provides almost one-third of California's total energy requirements. Natural gas is measured in terms of both cubic feet and Btu.

PG&E provides natural gas transportation services to "core" customers and to "non-core" customers (industrial, large commercial, and natural gas–fired electric generation facilities) that are connected to its gas system in its service territory. Core customers can purchase natural gas

procurement service (natural gas supply) from either PG&E or non-utility third-party gas procurement service providers (referred to as "core transport agents"). When core customers purchase gas supply from a core transport agent, PG&E still provides gas delivery, metering, and billing services to those customers. When PG&E provides both transportation and procurement services, PG&E refers to the combined service as "bundled" natural gas service. Currently, more than 95 percent of core customers, representing nearly 80 percent of the annual core market demand, receive bundled natural gas service from PG&E.

PG&E does not provide procurement service to non-core customers, who must purchase their gas supplies from third-party suppliers. PG&E offers backbone gas transmission, gas delivery (local transmission and distribution), and gas storage services as separate and distinct services to its non-core customers. Access to PG&E's backbone gas transmission system is available for all natural gas marketers and shippers, as well as non-core customers. PG&E also delivers gas to off-system customers (i.e., outside of PG&E's service territory) and to third-party natural gas storage customers.

Transportation Energy

According to the California Energy Commission (CEC), transportation accounted for nearly 41.1 percent of total energy consumption in California during 2017.[6] In 2018, 15.4 billion gallons of gasoline and 3.7 billion gallons of diesel fuel were consumed in California.[7] Petroleum-based fuels currently account for more than 90 percent of transportation fuel use in California.[8]

The state is now working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, total gasoline consumption in California has declined. The CEC predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels.[9] According to fuel sales data from the CEC, fuel consumption in Santa Clara

[6] California Energy Commission, *Final 2019 Integrated Energy Policy Report*, January 2020, p. 42. Available at https://efiling.energy.ca.gov/getdocument.aspx?tn=231858. Based on the transportation sector accounting for 41.1 percent of the state's GHG emissions in 2017.

[7] California Energy Commission, 2018 California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2019. Available at https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed January 2020. Diesel is adjusted to account for retail (52 percent) and non-retail (48 percent) diesel sales. CEC-A15 results for diesel sales do not include non-retail diesel sales, which are 48 percent of total diesel sales. For purposes of this analysis, the 48 percent of non-retail diesel sales were accounted, and therefore, reported statewide diesel sales are higher than reported in the A15 results. Refer to footnote in the CEC-A15 results.

[8] California Energy Commission, *2016–2017 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program*, CDC-600-2015-014-CMF, May 2016. Available at https://ww2.energy.ca.gov/2015publications/CEC-600-2015-014/CEC-600-2015-014-CMF.pdf.

[9] California Energy Commission, *2017 Integrated Energy Policy Report*, CEC-100-2017-001-CMF, February 2018, p. 213. Available at https://efiling.energy.ca.gov/getdocument.aspx?tn=223205.

County was approximately 643 million gallons of gasoline and 100 million gallons of diesel fuel in 2018.[10] Refer to Table 3.4-1 for a summary of statewide fossil fuel consumption in 2018.

Local Setting

Baseline annual energy use on the project site includes mobile sources and energy usage associated with the existing on-site structures that would be removed and replaced with construction of the proposed project. The 81-acre project site currently contains approximately 100 individual parcels. The total floor area of buildings within the project site accounts for approximately 755,000 square feet, with many of the existing buildings vacant. Unbuilt parcels within the project site are generally used as surface parking lots. Refer to Chapter 2, *Project Description*, for a detailed discussion of existing and proposed land uses.

3.4.2 Regulatory Framework

Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA) serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, NECPA has been regularly updated and amended by subsequent laws and regulations. This law is the foundation of most federal energy requirements. NECPA established energy-efficiency standards for consumer products and includes a residential program for low-income weatherization assistance, grants and loan guarantees for energy conservation in schools and hospitals, and energy-efficiency standards for new construction. Initiatives in these areas continue today.

Energy Policy Act of 1992

The Energy Policy Act of 1992 was enacted to reduce U.S. dependence on foreign petroleum and improve air quality. This law includes several provisions intended to build an inventory of alternative-fuel vehicles in large, centrally fueled fleets in metropolitan areas. The Energy Policy Act of 1992 requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty alternative fuel vehicles capable of running on alternative fuels each year. Financial incentives are also included. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of alternative fuel vehicles. The Energy Policy Act of 1992 also requires states to consider a variety of incentive programs to help promote alternative-fuel vehicles.

Energy Policy Act of 2005

The Energy Policy Act of 2005 includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing,

[10] California Energy Commission, 2018 California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2019. Available at https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed January 2020. Diesel is adjusted to account for retail (52 percent) and non-retail (48 percent) diesel sales. CEC-A15 results for diesel sales do not include non-retail diesel sales, which are 48 percent of total diesel sales. For purposes of this analysis, the 48 percent of non-retail diesel sales were accounted, and therefore, reported countywide diesel sales are higher than reported in the A15 results. Refer to footnote in the CEC-A15 results.

tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), signed in 2007, strengthens the key energy management goals for the federal government and sets more challenging goals than the Energy Policy Act of 2005. The energy reduction and environmental performance requirements of Executive Order 13423 were expanded upon in Executive Order 13514 (Federal Leadership in Environmental, Energy, and Economic Performance), which was signed in 2009.

Corporate Average Fuel Economy Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (EPA) jointly administer the CAFE standards. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given to (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) the need for the nation to conserve energy.[11]

Fuel-efficiency standards for medium- and heavy-duty trucks have been jointly developed by EPA and NHTSA. The Phase 1 heavy-duty truck standards applied to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014–2018, and required a reduction in fuel consumption by 6 to 23 percent over the 2010 baseline, depending on the vehicle type.[12] EPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021–2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline, depending on the compliance year and vehicle type.[13]

In September 2019, EPA finalized the Safer Affordable Fuel-Efficient Vehicles Rule Part One: One National Program and announced its decision to withdraw the Clean Air Act preemption waiver granted to the State of California in 2013.[14]

Influence of the U.S. Department of Transportation, U.S. Department of Energy, and U.S. Environmental Protection Agency on Transportation Energy

On the federal level, the U.S. Department of Transportation, U.S. Department of Energy, and EPA have substantial influence over energy policies related to fuel consumption in transportation. Generally, federal agencies influence transportation energy consumption by establishing and

11 For more information on the CAFE standards, refer to https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy.

12 U.S. Environmental Protection Agency, *Fact Sheet: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles,* 2011.

13 U.S. Environmental Protection Agency, *Federal Register*/Vol. 81, No. 206/Tuesday, *Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2*, October 25, 2016. Available at https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf.

14 U.S. Environmental Protection Agency and National Highway Traffic Safety Administration, *One National Program Rule on Federal Preemption of State Fuel Economy Standards*, 2019. Available at https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100XI4W.pdf. Accessed January 16, 2020.

enforcing fuel economy standards for automobiles and light trucks, and by funding projects for energy-related research and development for transportation infrastructure.

State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) is a state agency created by a constitutional amendment to regulate privately owned utilities providing telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation services, and in-state moving companies. The CPUC is responsible for assuring that California utility customers have safe, reliable utility services at reasonable rates, while protecting utility customers from fraud. The CPUC regulates the planning and approval for the physical construction of electric generation, transmission, and distribution facilities, and the local distribution pipelines for natural gas.[15]

California Energy Commission

The CEC is the primary energy policy and planning agency in California. Created by the California Legislature in 1974, the CEC has five major responsibilities: (1) forecast future energy needs and keep historical energy data; (2) license thermal power plants 50 MW or larger; (3) promote energy efficiency through appliance and building standards; (4) develop energy technologies and support renewable energy; and (5) plan for and direct the state response to energy emergencies.

Senate Bill 1389

Senate Bill (SB) 1389 (PRC Sections 25300–25323) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the electricity, natural gas, and transportation fuel sectors in California, and to provide policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state economy; and protect public health and safety (PRC Section 25301(a)).

The 2017 Integrated Energy Policy Report provides the results of CEC assessments on a variety of energy issues facing California:

- Energy efficiency;
- Strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan;
- Building energy efficiency standards;
- The impact of drought on California's energy system;
- Achieving 50 percent renewables by 2030;
- The California Energy Demand Forecast;
- The Natural Gas Outlook;

[15] California Public Utilities Commission, California Public Utilities Commission website. Available at http://www.cpuc.ca.gov/. Accessed January 2020.

- The Transportation Energy Demand Forecast;
- Alternative and Renewable Fuel and Vehicle Technology Program benefits updates;
- An update on electricity infrastructure in Southern California;
- An update on trends in California sources of crude oil;
- An update on California nuclear plants; and
- Other energy issues.

California Global Warming Solutions Act of 2006

In 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (codified in the California Health and Safety Code, Division 25.5), which focused on reducing GHG emissions in California to 1990 levels by 2020. Under Health and Safety Code Division 25.5, the California Air Resources Board (CARB) has the primary responsibility for reducing GHG emissions in California; however, AB 32 also tasked the CEC and CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, Governor Jerry Brown signed SB 32 and its companion bill, AB 197. SB 32 and AB 197 amended Health and Safety Code Division 25.5 and established a new climate pollution reduction target of 40 percent below 1990 levels by 2030, with provisions to ensure that the benefits of state climate policies reach into disadvantaged communities. Refer to Section 3.6, *Greenhouse Gas Emissions*, for additional details regarding these statutes.

Senate Bills 1078, 107, and 100, and Executive Order S-14-08

The State of California adopted standards to increase the percentage of electricity that retail sellers, including investor-owned utilities and community choice aggregators, must provide from renewable resources.[16] The standards are referred to as the Renewables Portfolio Standard (RPS). The legislation requires utilities to increase the percentage of electricity obtained from renewable sources to 33 percent by 2020 and 50 percent by 2030.

On September 10, 2018, Governor Brown signed SB 100, which further increased the California RPS and requires retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030. SB 100 also specifies that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by December 31, 2045.

CPUC and the CEC jointly implement the RPS program. The responsibilities of the CPUC are to: (1) determine annual procurement targets and enforce compliance; (2) review and approve the renewable energy procurement plan of each investor-owned utility; (3) review contracts for RPS-eligible energy; and (4) establish the standard terms and conditions used in contracts for eligible

[16] SB 1078 (Chapter 526, Statutes of 2002); SB 107 (Chapter 464, Statutes of 2006); Executive Order S-14-08.

renewable energy.[17] Refer to Section 3.6, *Greenhouse Gas Emissions*, for additional details regarding this program.

California Building Standards Code (Title 24, Parts 6 and 11)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations [CCR] Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020.[18] The 2019 Title 24 standards include requirements for solar photovoltaic systems in all new homes, requirements for newly constructed healthcare facilities that were previously not included, the encouragement of demand response and light-emitting diode (LED) technology for both residential and nonresidential buildings, and the use of more efficient air filters to trap hazardous particulates.[19]

The current (2019) version of the California Green Building Standards Code (CCR Title 24, Part 11), commonly referred to as the CALGreen Code, became effective on January 1, 2020.[20] The 2016 CALGreen Code includes mandatory measures for non-residential development related to site development, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality.[21] Most changes to the mandatory measures, compared to the previous 2013 CALGreen Code, were related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. For example, several energy-related definitions that were added or revised affect electric vehicle (EV) chargers and charging, and hot water recirculation systems. For new multifamily dwelling units, the residential mandatory measures were revised to provide additional EV charging requirements, including quantity, location, size, single EV space, multiple EV spaces, and identification. For non-residential mandatory measures, Table 5.106.5.3.3 of the CALGreen Code, identifying the number of required EV charging spaces, has been revised in its entirety. Refer to Section 3.6, *Greenhouse Gas Emissions*, for additional details regarding these standards.

A discussion of the consistency of the proposed project with the requirements of the CALGreen Code and Title 24 is provided under Impact EN-2 below.

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17 California Public Utilities Commission, RPS Program Overview, 2020. Available at http://www.cpuc.ca.gov/RPS_Overview/. Accessed January 2020.

18 California Energy Commission, 2019 Building Energy Efficiency Standards, 2020. Available at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency. Accessed January 2020.

19 California Energy Commission, 2019 Building Energy Efficiency Standards, 2020. Available at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency. Accessed January 2020.

20 As adopted by the San José City Council in October 2019, the 2019 California Building Standards Codes, including CALGreen, do not apply to already filed building permits. The new codes do, however, apply to projects that have filed for planning permits but not building permits.

21 California Building Standards Commission, *Guide to the 2016 California Green Building Standards Code Nonresidential*, 2017.

Assembly Bill 1493

The transportation sector accounts for more than half of carbon dioxide (CO_2) emissions in California. AB 1493 (commonly referred to as the Pavley regulations), enacted on July 22, 2002, requires CARB to set GHG emissions standards for new passenger vehicles, light-duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009–2016 and Phase II established standards for model years 2017–2025.[22,23] Refer to Section 3.6, *Greenhouse Gas Emissions*, for additional details regarding this regulation.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to diesel particulate matter emissions (13 CCR Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure prohibits diesel-fueled commercial vehicles from idling for more than 5 minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Airborne Toxic Control Measure for Stationary Compression Ignition Engines

In 2004, CARB adopted an Airborne Toxic Control Measure to reduce public exposure to emissions of diesel particulate matter and criteria pollutants from stationary diesel-fueled compression ignition engines (17 CCR Section 93115). The measure applies to any person who owns or operates a stationary compression ignition engine in California with a rated brake horsepower greater than 50, or to anyone who either sells, offers for sale, leases, or purchases a stationary compression ignition engine. This measure outlines fuel and fuel additive requirements; emissions standards; recordkeeping, reporting and monitoring requirements; and compliance schedules for compression ignition engines.

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with 0.25 percent in 2011 and culminating in a 10 percent total reduction in 2020. Petroleum importers, refiners, and wholesalers can either develop their own low-carbon fuel products or buy LCFS credits from other companies that develop and sell low-carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

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22 California Air Resources Board, Clean Car Standards—Pavley, Assembly Bill 1493. Available at http://www.arb.ca.gov/cc/ccms/ccms.htm. Last reviewed January 11, 2017. Accessed March 27, 2019.

23 U.S. Environmental Protection Agency, *EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017–2025 Cars and Light Trucks*, August 2012.

Truck and Bus Regulation

In addition to limiting exhaust from idling trucks, in 2008 CARB approved the Truck and Bus Regulation to reduce the emissions of oxides of nitrogen and particulate matter from existing diesel vehicles operating in California (13 CCR Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. This regulation will be implemented in phases, with full implementation by 2023.

CARB also promulgated emissions standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installing diesel soot filters and encouraging the retirement, replacement, or repowering of older, dirtier engines with newer emissions-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.[24]

California Air Resources Board Advanced Clean Trucks Program

On June 25, 2020, CARB adopted the Advanced Clean Trucks rule, which requires truck manufacturers to transition from diesel vehicles to electric zero-emission vehicles beginning in 2024, with the goal of reaching 100 percent zero-emission vehicles by 2045. The goal of the legislation is to help California meet its climate targets of a 40 percent reduction in GHG emissions and a 50 percent reduction in petroleum use by 2030, and an 80 percent reduction in GHG emissions by 2050.

Truck manufacturers will be required to sell zero-emission vehicles as an increasing percentage of their annual sales from 2024 through 2035. Companies with large distribution fleets (50 or more trucks) will be required to report information about their existing fleet operations in an effort to identify future strategies for increasing zero-emission fleets statewide.[25]

Zero-emission vehicles are two to five times more energy efficient than diesel vehicles, and the Advanced Clean Trucks rule will reduce GHG emissions with the co-benefit of reducing dependence on petroleum fuels.

[24] Cummins Inc., *Cummins Tier-4-Final Field Test Showed 10% Lower Fuel Consumption*, 2014. Available at https://cumminsengines.com/cummins-tier-4-final-field-test-program. Accessed January 2020.

[25] California Air Resources Board, Advanced Clean Trucks Rule Fact Sheet, 2020. Available at https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-trucks-fact-sheet. Accessed July 2020.

California Air Resources Board Advanced Clean Car Program

The Advanced Clean Cars emissions-control program, approved by CARB in 2012, is closely associated with the Pavley regulations.[26] The program requires a greater number of zero-emissions vehicle models for years 2015 through 2025, to control smog, soot, and GHG emissions. This program includes the Low-Emissions Vehicle regulations to reduce emissions of criteria air pollutants and GHGs from light- and medium-duty vehicles; and the Zero-Emissions Vehicle regulations, which require manufacturers to produce an increasing number of pure zero-emissions vehicles (battery and fuel cell electric vehicles) and include the provision to produce plug-in hybrid electric vehicles between 2018 and 2025. The increase in low- and zero-emissions vehicles will result in a decrease in the consumption of non-renewable fuels such as gasoline and diesel.

Sustainable Communities and Climate Protection Act of 2008 (SB 375)

Signed into law on October 1, 2008, SB 375 supplements the GHG emissions reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, CARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations. The target reductions for the Bay Area are a regional reduction of per-capita CO_2 emissions from cars and light-duty trucks by 7 percent by 2020 and by 15 percent by 2035, compared to a 2005 baseline. The Association of Bay Area Governments (ABAG) addresses these goals in *Plan Bay Area*, which identifies Priority Development Areas near transit options to reduce use of on-road vehicles.

California Environmental Quality Act

Under CEQA (PRC Section 21100(b)(3)), EIRs are required to discuss the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. If the analysis of a proposed project shows that the project may result in significant environmental effects due to the wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, then the EIR must identify mitigation measures to address that energy use. This analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include project size, location, orientation, equipment use, and any renewable energy features that could be incorporated into the project (CEQA Guidelines Section 15126.2(b)).

CEQA Guidelines Appendix F lists the energy-related topics that should be analyzed in the EIR, and more specifically identifies the following topics for consideration in the evaluation of energy impacts in an EIR, to the extent the topics are applicable or relevant to the proposed project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.

[26] California Air Resources Board, Clean Car Standards—Pavley, Assembly Bill 1493. Available at http://www.arb.ca.gov/cc/ccms/ccms.htm. Last reviewed January 11, 2017. Accessed March 27, 2019.

- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base-period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.[27]

The effects of the project relevant to each of these issues are addressed in this section.

Regional

Plan Bay Area 2040

The Metropolitan Transportation Commission (MTC) is the federally recognized Metropolitan Planning Organization for the nine-county Bay Area, which includes Santa Clara County and the city of San José. On July 18, 2013, *Plan Bay Area* was jointly approved by ABAG's Executive Board and the MTC. The plan includes the region's Sustainable Communities Strategy, as required under SB 375, and the 2040 Regional Transportation Plan. The Sustainable Communities Strategy lays out how the region will meet GHG reduction targets set by CARB. CARB's current targets call for the region to reduce per-capita vehicular GHG emissions 10 percent by 2020 and 19 percent by 2035 from a 2005 baseline.[28]

A central GHG emissions reduction strategy of *Plan Bay Area* is to concentrate future growth in Priority Development Areas and Transit Priority Areas. To be eligible for designation as a Priority Development Area, an area must be within an existing community, near existing or planned fixed transit or served by comparable bus service, and planned for more housing. A Transit Priority Area is an area within one-half mile of an existing or planned major transit stop such as a rail transit station, a ferry terminal served by transit, or the intersection of two or more major bus routes.[29] The project site is located in both a Priority Development Area and a Transit Priority Area.

On July 26, 2017, the MTC adopted *Plan Bay Area 2040*, a focused update that builds upon the growth pattern and strategies developed in the original *Plan Bay Area*, but with updated planning assumptions that incorporate key economic, demographic, and financial trends since the original plan was adopted.[30]

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27 CEQA Guidelines Appendix F(II)(C).

28 California Air Resources Board, *SB 375 Regional Greenhouse Gas Emissions Reduction Targets*. Available at https://www.arb.ca.gov/cc/sb375/finaltargets2018.pdf. Accessed January 2020.

29 Metropolitan Transportation Commission and Association of Bay Area Governments, *Plan Bay Area*, adopted July 18, 2013. Available at http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf. Accessed January 2020.

30 Metropolitan Transportation Commission and Association of Bay Area Governments, *Plan Bay Area*, adopted July 18, 2013. Available at http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/Plan_Bay_Area.pdf. Accessed January 2020.

While not directly related to reduced energy consumption, *Plan Bay Area 2040*'s GHG reduction targets have energy implications, including the reduction of VMT, which effectively reduces consumption of fossil fuels by transportation sources.

Local

Envision San José 2040 General Plan

The *Envision San José 2040 General Plan* (General Plan) contains goals and policies related to the City's commitment to sustainability. The City's sustainability goals include improvements to energy efficiency, renewable energy generation, and building design aimed at overall energy reduction. The following policies are directly related to energy and are relevant to the proposed project:

Policy MS-1.1: Demonstrate leadership in the development and implementation of green building policies and practices. Ensure that all projects are consistent with or exceed the City's Green Building Ordinance and City Council Policies as well as State and/or regional policies which require that projects incorporate various green building principles into their design and construction.

Policy MS-2.2: Encourage maximized use of on-site generation of renewable energy for all new and existing buildings.

Policy MS-2.3: Utilize solar orientation, (i.e., building placement), landscaping, design, and construction techniques for new construction to minimize energy consumption.

Policy MS-2.8: Develop policies which promote energy reduction for energy-intensive industries. For facilities such as data centers, which have high energy demand and indirect greenhouse gas emissions, require evaluation of operational energy efficiency and inclusion of operational design measures as part of development review consistent with benchmarks such as those in EPA's EnergyStar Program for new data centers.

Policy MS-2.11: Require new development to incorporate green building practices, including those required by the Green Building Ordinance. Specifically target reduced energy use through construction techniques (e.g., design of building envelopes and systems to maximize energy performance), through architectural design (e.g., design to maximize cross ventilation and interior daylight) and through site design techniques (e.g., orienting buildings on sites to maximize the effectiveness of passive solar design).

Policy MS-3.1: Require water-efficient landscaping, which conforms to the State's Model Water Efficient Landscape Ordinance, for all new commercial, institutional, industrial, and developer-installed residential development unless for recreation or other area functions.

Policy MS-3.3: Promote the use of drought tolerant plants and landscaping materials for nonresidential and residential uses.

Policy MS-14.3: Consistent with the California Public Utilities Commission's California Long Term Energy Efficiency Strategic Plan, as revised and when technological advances make it feasible, require all new residential and commercial construction to be designed for zero net energy use.

Policy MS-14.4: Implement the City's Green Building Policies (see Green Building Section) so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, and passive solar building design and planting of trees and other landscape materials to reduce energy consumption.

Policy MS-14.5: Consistent with State and Federal policies and best practices, require energy efficiency audits and retrofits prior to or at the same time as consideration of solar electric improvements.

Policy MS-15.9: Train City code enforcement and development review staff in state-of-the-art Heating, Ventilation, and Air Conditioning (HVAC) and insulation industry standards, best practices, and resources to ensure buildings are constructed in compliance with those industry standards and best practices.

Policy TR-1.4: Through the entitlement process for new development fund needed transportation improvements for all modes, giving first consideration to improvement of bicycling, walking and transit facilities. Encourage investments that reduce vehicle travel demand.

Policy TR-2.8: Require new development where feasible to provide on-site facilities such as bicycle storage and showers, provide connections to existing and planned facilities, dedicate land to expand existing facilities or provide new facilities such as sidewalks and/or bicycle lanes/paths, or share in the cost of improvements.

Policy TR-3.3: As part of the development review process, require that new development along existing and planned transit facilities consist of land use and development types and intensities that contribute toward transit ridership. In addition, require that new development is designed to accommodate and to provide direct access to transit facilities.

Climate Smart San José

The City of San José adopted its *Climate Smart San José* plan in 2018. The General Plan's goals and policies serve as a foundation for the plan, which provides additional analysis, recommendations, and corresponding metrics. The plan creates a measurable pathway to meeting the City's GHG emission reduction targets and has the co-benefit of reducing energy consumption. Listed below are the plan's nine key strategies:

- **1.1:** Transitioning to a renewable energy future and providing clean electricity that supplies the entire city.
- **1.2:** Embracing our Californian climate means creating an urban landscape, in our homes and public places, that is not just low water use, but attractive and enjoyable.
- **2.1:** Densifying our city in focused growth areas increases walkability and cycling and also makes our neighborhoods more vibrant, distinctive, and enjoyable.
- **2.2:** Making our homes energy efficient and fully electric can make them affordable for our families and more comfortable to live in.
- **2.3:** New technology can enable clean, electric, and personalized mobility choices that make it convenient to move between any two points in the city.

- **2.4:** Developing integrated, accessible public and active transport infrastructure reduces the dependency on the car to move within the city.
- **3.1:** Creating local jobs in our city makes it possible for our residents to work close to where they live, saving time, money, and gas spent commuting.
- **3.2:** Making our commercial buildings high-performance and siting them close to transit lowers water and energy use.
- **3.3:** Moving commercial goods through our city efficiently with new technology and practices.

City of San José Reach Code

The City of San José has adopted a reach code, which is a building code that is more advanced than those required by the state. Reach codes that support energy efficiency, electrification, and renewable energy can save energy and reduce GHG emissions. In September 2019, the San José City Council approved a building reach code ordinance that encourages building electrification and energy efficiency, requires solar readiness on non-residential buildings, and requires EV readiness and installation of EV equipment.

In October 2019, the City Council approved an ordinance (Ordinance No. 30330) prohibiting natural gas infrastructure in new detached accessory dwelling units, single-family, and low-rise multifamily buildings. This new ordinance supplements the reach code ordinance.

Municipal Code Chapter 17.845

The City of San José adopted Municipal Code Chapter 17.845, also known as Ordinance No. 30330, in November 2019. Chapter 17.845 prohibits natural gas infrastructure in newly constructed single-family dwellings, low-rise residential buildings (three stories or less), and detached accessory dwelling units. This requirement became effective on January 1, 2020.[31]

3.4.3 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, an energy impact would be significant if implementing the proposed project would:

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

Approach to Analysis

This section describes the data, assumptions, and methodology used to calculate energy use and assess potential impacts of the proposed project.

[31] City of San José, Ordinance No. 30330, 2019. Available at https://records.sanjoseca.gov/Ordinances/ORD30330.pdf.

Project Construction

Project construction would consume energy from transportation fuels (e.g., diesel and gasoline) used for haul trucks, heavy-duty construction equipment, construction workers traveling to and from the project site, electricity consumed to power the construction trailers (lights, electronic equipment, and heating and cooling), and any electrically driven construction equipment. Natural gas would not be used during construction.

Construction activities could vary substantially from day to day, depending on the phase and specific type of construction activity and the number of workers and vendors who would travel to the project site. This analysis considered these factors and provides the estimated maximum construction energy consumption for the purposes of evaluating the associated impacts on energy resources.

Construction fuel use was forecasted by applying mobile-source emission factors derived from CARB's Emission Factors (EMFAC2017) database for on-road equipment and CARB's OFFROAD2017 for off-road equipment to the construction equipment expected to be used for each phase of project development. Construction equipment and hours are consistent with the emissions modeling described in Section 3.1, *Air Quality*, and Section 3.6, *Greenhouse Gas Emissions*.

As described in Chapter 2, *Project Description*, this analysis conservatively assumes that construction would begin in 2021 and continue through 2031 (for a total of 11 years). Actual phased implementation could be constrained by external factors such as construction staging for the BART Downtown extension, and thus could extend over a longer period. The development schedule could also be affected by market forces. The specific type of construction work would also vary by phase, but would generally consist of the following sequence for each of the three phases:

1. Demolition and site clearance
2. Excavation and soils removal (and remediation, as needed)
3. Foundation and/or basement level/garage work; utilities and sub-surface infrastructure
4. Vertical construction
5. Surface street/right-of-way work
6. Streetscape and open space improvements

Phase 1 would be the most intensive of the three construction phases, representing approximately 45 percent of total construction by area, and the annual average energy use from Phase 1 was used as a conservative estimate of the project's maximum annual energy use. Because the individual phase-out schedule of each existing use is not known, the analysis also conservatively assumes that all existing uses would operate through Phase 1 construction. The energy consumption from existing uses was added to the overall construction energy consumption.

If, for various site planning, financial, or other reasons, the onset of construction were to be delayed to a later date than assumed in the analysis, construction impacts would be similar to or less than those analyzed. A more energy-efficient construction equipment and vehicle fleet mix would be expected in the future, because the In-Use Off-Road Diesel-Fueled Fleets Regulation and Advanced Clean Trucks Program implemented by CARB require construction equipment

fleet operators to phase in less-polluting, more fuel-efficient heavy-duty equipment and trucks over time.[32]

Electricity

Electricity use during project construction was estimated for the temporary construction offices, for construction equipment that would use electricity as an alternative to diesel fuel (e.g., aerial lifts, air compressors, concrete saws), and for the tunnel-boring machine for the utility corridor (i.e., the "utilidor"). (See Section 3.1, *Air Quality*, for a detailed description of construction equipment and fuel type.) The CalEEMod emissions model, described further in Section 3.6, *Greenhouse Gas Emissions*, was used to estimate project emissions of criteria air pollutants and GHGs, as well as electricity, natural gas, and water use. The same model used for the air quality and GHG analyses in this EIR was also used for estimating energy use.

The construction offices were assumed to be two 2,500-square-foot trailers and energy consumption was modeled using the CalEEMod land use category for "General Office." Electricity demand by construction equipment was estimated using default horsepower and load factors from CalEEMod and hours of operation per day and is consistent with the methodology described in Section 3.1, *Air Quality*.[33] The total horsepower-hours were then converted to kilowatt-hours, using a standard conversion factor.[34] The electricity demand under existing baseline conditions was then subtracted from the construction electricity use to determine the net electricity use during construction of the proposed project.

Transportation Fuels

Transportation fuels would be consumed for transportation of construction workers and materials to and from the project site, and operation of construction equipment on the project site throughout the three construction phases.

Fuel consumption by on-site heavy-duty construction equipment was calculated based on the equipment mix estimated by the project applicant and usage factors provided in the CalEEMod construction output files included in Appendix C1. The total horsepower was then multiplied by fuel usage estimates per horsepower-hours from the CARB off-road vehicle (OFFROAD) model.[35]

Fuel consumption by construction on-road worker, vendor, and delivery/haul trucks was calculated using the trip rates and distances consistent with the air quality and GHG emissions modeling worksheets and CalEEMod construction output files. Total VMT for these on-road vehicles were then calculated for each type of construction-related trip and divided by the corresponding county-specific miles per gallon factor, using CARB's EMFAC2017 model. The model was used to calculate fuel consumed based on the total annual VMT for each vehicle type.

[32] California Air Resources Board, *In-Use Off-Road Diesel-Fueled Fleets Regulation*, 2011, revised October 2016.
[33] South Coast Air Quality Management District, *CalEEMod Users Guide Appendix D: Default Data Tables*, October 2017.
[34] Iowa State University, *Energy Measurements and Conversions*, 2008.
[35] California Air Resources Board, *Off-Road Diesel Emission Factor Update for NO_X and PM*, 2017.

A combination of CalEEMod-assumed trip lengths and client-provided specific trip lengths was used for worker commutes, vendor and concrete trucks, and haul truck trips. Consistent with CalEEMod, construction worker trips were assumed to include a mix of light-duty gasoline automobiles and light-duty gasoline trucks. Construction vendor trucks were assumed to be a mix of medium-heavy-duty and heavy-duty diesel trucks, and concrete and haul trucks were assumed to be heavy-duty diesel trucks. Fuel consumption under baseline conditions was then subtracted from construction fuel consumption to determine the net fuel consumption during construction of the proposed project. Refer to Appendix F1 for detailed energy calculations.

The energy usage required for construction of the proposed project was estimated based on the number and types of equipment that would be used during all three construction phases by assuming a conservative estimate of construction activities (i.e., maximum daily equipment usage levels). Energy for construction worker commuting trips was estimated based on the predicted number of workers for the various phases of construction and the estimated VMT based on the conservative values in the CalEEMod and EMFAC2017 models. The assessment also includes a discussion of the proposed project compliance with relevant energy-related regulatory requirements and incorporation of design features discussed in Section 3.6, *Greenhouse Gas Emissions*, that would minimize the amount of energy usage during construction. These measures are also discussed in Chapter 2, *Project Description*, and Section 3.1, *Air Quality*.

The estimated fuel economy for heavy-duty construction equipment was based on fuel consumption factors from the CARB OFFROAD emissions model, a state-approved model for estimating emissions from off-road heavy-duty equipment. The estimated fuel economy for haul trucks, vendor trucks, concrete trucks, and worker commute vehicles was based on fuel consumption factors from CARB's EMFAC2017 emissions model, a state-approved model for estimating emissions from on-road vehicles and trucks.

Operation

Operational energy impacts were assessed based on the increase in energy demand compared to baseline conditions described in Section 3.4.1, *Environmental Setting*. The assumptions used here are the same as those used in Section 3.6, *Greenhouse Gas Emissions*. Therefore, operational energy associated with existing conditions was subtracted from energy associated with the total operations of the project to calculate the net energy consumed by the proposed project. Within the CalEEMod software, building electricity and natural gas usage rates were adjusted to account for prior Title 24 Building Energy Efficiency Standards for the existing uses.[36]

As stated above, the net change in operational energy demand was based on the difference between the existing-condition energy demand and the energy demand of the proposed project at full buildout. The following discusses only the methodology for the new operations at the project site; the methodology for determining energy usage from the baseline conditions is described above.

[36] California Air Resources Board, *CalEEMod Users Guide*, 2016, Appendix E, Section 5. Factors for the prior Title 24 standard are extrapolated based on the technical source documentation.

Electricity

Electrical power for the proposed project is expected to be provided by SJCE or PG&E at transmission voltage (115 kV) to a project area substation in the Southern Zone for District Infrastructure. The 115 kV electricity would be stepped down at the substation to 12.47 kV or 21 kV and distributed to the various buildings on the project site through new on-site distribution lines (i.e., a "microgrid"). Modifications to three PG&E substations for the transmission infrastructure (such as protection services) would be required, and a new electrical switching station would be installed. The project is also considering the addition of up to two central utility plants to efficiently manage utility infrastructure in a centralized location. Refer to Chapter 2, *Project Description*, for details on the existing and planned utility infrastructure.

The project's estimated electricity demand was analyzed relative to the state's existing and planned energy supplies in 2030 (the closest projected year to the project buildout year)[37] to determine whether PG&E would be able to meet the proposed project's energy demands. Annual consumption of electricity (including electricity usage associated with the supply and conveyance of water) from operation of the proposed project was calculated using demand factors provided in CalEEMod and adjusted for project compliance with the 2019 Title 24 building energy efficiency standards, which went into effect on January 1, 2020. In addition, the project's energy demand was analyzed relative to PG&E's maximum peak demand of 19,245 MW.[38]

A total of 656 EV charging stations, or 10 percent of total parking spaces (increasing to 15 percent or 984 parking spaces with Mitigation Measure AQ-2g incorporated), would be installed on the project site in underground or aboveground parking structures.[39] Electricity demand from the charging stations was estimated by multiplying the number of spaces, days of operation, charge hours per day, and charging station capacity, resulting in the total annual electricity.

Electricity demand from water use associated with operation of the proposed project was calculated using CalEEMod and the electrical intensity factors for water supply and distribution. Water-related energy intensities in CalEEMod are based on the CEC report *Refining Estimates of Water-Related Energy Use in California*.[40]

Natural Gas

The proposed project's residential uses, office buildings, and all but 20,000 square feet of restaurant kitchens would not use natural gas, so operational natural gas demand would be generated by the active uses (which include restaurants) and mobile sources, which are described in greater detail under *Transportation Fuels*, below. Natural gas combustion emissions for

37 California Energy Commission, *California Energy Demand 2018–2030 Revised Forecast*, January 2018.
38 California Independent System Operator, *2018–2019 Transmission Plan*, March 29, 2019. Available at http://www.caiso.com/Documents/ISO_BoardApproved-2018-2019_Transmission_Plan.pdf. Accessed January 2020.
39 Electric vehicle charging stations were estimated as 10 percent of the total planned parking spaces pursuant to the City of San José's Reach Code ordinances, which require a minimum of 10 percent of parking spaces be equipped for electric charging.
40 California Energy Commission, *Refining Estimates of Water-Related Energy Use in California, PIER Final Project Report*, CEC-500-2006-118, December 2006.

cooking in 20,000 square feet of restaurant kitchens were estimated using energy use rates from the U.S. Energy Information Administration's Commercial Buildings Energy Consumption Survey and emission factors from the Climate Registry. The project's estimated natural gas demand was analyzed relative to the state's existing and planned energy supplies in 2030 (the closest projected year to the proposed project buildout year)[41] to determine whether PG&E would be able to meet projected energy demand. Natural gas demand generated under existing conditions was calculated using demand factors provided in CalEEMod and subtracted from the project's natural gas demand to obtain the net annual natural gas demand.

Transportation Fuels

Energy demand from employees, vendors and suppliers, and visitors traveling to and from the project site was estimated based on the predicted number of trips to and from the project site taken from the analysis in Section 3.13, *Transportation*, and the estimated GHG emissions for the proposed project.

Based on the proposed project's annual mobile-source GHG emissions, gasoline and diesel consumption rates were calculated using the county-specific vehicle fleet mixes in EMFAC2017 and a standard conversion factor from GHG emissions to gallons of fossil fuels (i.e., gasoline, diesel, and natural gas). Supporting calculations are provided in Appendix F2.

LEED Neighborhood Development Gold Certification Requirements

The development program is divided into multiple blocks of various land uses such as offices, residential units, district systems and logistics, limited-term corporate accommodations, retail, hotel, and event space. These blocks would result in energy use from electricity, natural gas, water use, and wastewater generation. As required by AB 900, at least one building would be certified Leadership in Energy and Environmental Design (LEED) Gold in each phase. The project applicant has further committed to constructing all office buildings to LEED Gold standards. In addition, the project would comply with the City's New Construction Green Building Requirements. Although the exact emission reduction strategies that would be used to secure LEED certification are not known at this time, the project would integrate Low Impact Development, transportation demand management, energy efficiency, water conservation, and other green building practices.

[41] California Gas and Electric Utilities, *2018 California Gas Report*, pp. 101–103. While the estimated life of the proposed project would be 30 years, comparison to the analyzed first full operational year of 2024 provides a conservative analysis as supply projections for electricity and natural gas increase in future years.

Impact Analysis

Impact EN-1: The proposed project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. ***(Less than Significant)***

Construction

During construction of the proposed project, energy would be consumed in the form of electricity for powering the construction trailers (lights, electronic equipment, and heating and cooling), powering electric equipment, and powering the tunnel boring machine for the utilidor. Natural gas would not be used. Project construction would also consume energy in the form of petroleum-based fuels used by off-road construction vehicles and equipment on the project site, for travel by construction workers to and from the site, and for delivery and haul truck trips (e.g., hauling of demolished and excavated material to off-site reuse and disposal facilities).

Table 3.4-2 summarizes the estimated annual average consumption of electricity, natural gas, gasoline fuel, and diesel fuel during Phase 1 of project construction. Note that construction energy use is presented as an annual average of construction activities. Phase 1 would be the most intensive of the three construction phases, representing approximately 45 percent of total construction by area; therefore, the annual average energy use from Phase 1 was used as a conservative estimate of the project's maximum annual energy use. Because the individual phase-out schedule of each existing use is not known, the analysis conservatively assumes that all existing uses would operate through Phase 1 construction. The energy consumption from existing uses is added to the overall construction energy consumption, as shown in Table 3.4-2.

Electricity

During construction of the proposed project, electricity would be used to power lighting, heating, and cooling in the construction trailers; electric equipment (including all aerial lifts, air compressors, concrete saws, and sweepers/scrubbers); and the tunnel boring machine. Transmission electricity would be delivered by PG&E to the project site via existing electrical lines that connect to the project site. Once built, the project's later phases of construction may draw power from either PG&E or private on-site distribution lines in the utilidor that would run throughout the site as a combination of direct-bury utility trenches, utilities within basement parking garages, and underground tunnel structures.

TABLE 3.4-2
ANNUAL ENERGY USE DURING PROJECT CONSTRUCTION

	Annual Average Quantity during Construction[a]	
Energy Type	**Project Energy Usage[b]**	**Unit of Measure**
Electricity		
Existing Uses	5,095	MWh
Off-Road Equipment	2,212	MWh
Construction Office	65	MWh
Total Annual Electricity	**7,372**	**MWh**
Natural Gas		
Existing Uses	8,842	MMBtu
Construction	0	MMBtu
Total Annual Natural Gas	**8,842**	**MMBtu**
Gasoline		
Existing Uses	1,751,600	Gallons
On-Road Construction Equipment	202,756	Gallons
Off-Road Construction Equipment	0	Gallons
Total Annual Gasoline	**1,954,356**	**Gallons**
Diesel		
Existing Uses	313,704	Gallons
On-Road Construction Equipment	212,448	Gallons
Off-Road Construction Equipment	487,007	Gallons
Total Annual Diesel	**1,013,160**	**Gallons**

NOTES:
MMBtu = million British thermal units; MWh = megawatt-hours
Detailed calculations are provided in Appendix F1.
[a] Totals may not add up due to rounding of decimals.
[b] Existing use operations are conservatively assumed to continue through Phase 1 of project construction. Therefore, the existing energy use is added to the energy use from project construction.
SOURCES: Data compiled by Environmental Science Associates in 2020; CalEEMod, 2020; EMFAC, 2017

As shown in Table 3.4-2, annual average electricity usage during construction would be approximately 2,277 MWh and the existing electricity usage at the project site is approximately 5,095 MWh annually, for a total of 7,372 MWh of electricity. Although there would be a temporary increase in electricity consumption at the site during construction, the electricity consumption would be within the supply and infrastructure capabilities of PG&E (47,986 gigawatt-hours net energy for 2018).[42] The electricity demand at any given time would vary throughout the construction period based on the construction activities being performed, and would cease upon completion of construction. Electricity use from construction would be short-term, limited to the working hours, used for necessary construction-related activities, and would represent a small fraction of the proposed project's net annual operational electricity. Furthermore, the electricity

[42] Pacific Gas and Electric Company, *2018 Integrated Resource Plan*, August 1, 2018, p. 45. Available at https://www.pge.com/pge_global/common/pdfs/for-our-business-partners/energy-supply/integrated-resource-planning/2018-PGE-Integrated-Resource-Plan.pdf. Accessed January 2020.

used for off-road light construction equipment, including all aerial lifts, air compressors, concrete saws, and sweepers/scrubbers, would have the effect of reducing construction-related emissions of air pollutants and GHGs compared to traditional diesel-powered equipment. Therefore, impacts from construction-related demand for electricity would be **less than significant** and would not result in the wasteful, inefficient, and unnecessary consumption of energy.

Natural Gas

As stated above, construction activities, including the construction of new buildings and facilities, would not consume natural gas. Existing uses on the project site could continue to use natural gas totaling 8,842 million British thermal units (MMBtu) for operations during Phase 1 of construction. However, the demand for natural gas would not increase over existing conditions and therefore would remain within the supply and infrastructure capabilities of PG&E. Therefore, **no impact** would occur from construction-related demand for natural gas, and the project would not result in the wasteful, inefficient, and unnecessary consumption of natural gas for construction.

Transportation Energy

Table 3.4-2 reports the amount of petroleum-based transportation energy that could potentially be consumed annually during construction of the proposed project, based on the conservative set of assumptions provided in Appendix F1. The current annual demand associated with use of the project site is approximately 1,751,600 gallons of gasoline and 313,704 gallons of diesel fuel. During project construction, on- and off-road vehicles would consume an estimated annual average of approximately 202,756 gallons of gasoline and 699,455 gallons of diesel. The combination of operation of existing uses and Phase 1 construction would consume 1,954,356 gallons of gasoline and 1,013,160 gallons of diesel. For informational purposes only, and not for the purpose of determining significance, total fuel usage during existing operations and Phase 1 project construction would represent approximately 0.01 percent of the state's 2018 annual on-road gasoline-related energy consumption and 0.03 percent of its 2018 annual diesel fuel-related energy consumption,[43] as shown in Appendix F1.

Transportation fuels (gasoline and diesel) are produced from crude oil, which can be domestic or imported from various regions around the world. Based on current proven reserves, crude oil production would be sufficient to meet more than 50 years of worldwide consumption.[44] The proposed project would comply with CAFE fuel economy standards, which would result in more efficient use of transportation fuels (lower consumption). Vehicles used for project-related trips would also comply with AB 1493 and the LCFS, which are designed to reduce vehicular GHG emissions, but would also result in additional fuel savings.

Construction of the proposed project would use fuel-efficient equipment consistent with federal and state regulations, such as fuel-efficiency regulations in accordance with CARB's Pavley Phase II standards; the anti-idling regulation in accordance with 13 CCR Section 2485; and fuel

[43] California Energy Commission, 2018 California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2019. Available at https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed January 2020.

[44] BP Global, *Oil Reserves*. Available at https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/oil.html. Accessed January 2020.

requirements for stationary equipment in accordance with 17 CCR Section 93115 (concerning Airborne Toxic Control Measures). Project construction would also comply with state measures to reduce the inefficient, wasteful, and unnecessary consumption of energy, such as petroleum-based transportation fuels. While these regulations are intended to reduce construction emissions, compliance with the anti-idling and emissions regulations discussed above would also result in fuel savings from the use of more fuel-efficient engines. Further, the proposed project has committed to using Tier 4 equipment, and this commitment was reflected in the emissions modeling and energy consumption calculations. Mitigation Measure AQ-2a in Section 3.1, *Air Quality*, considers alternative fuels and best available emissions control techniques that could further reduce energy consumption and emissions. Because of the uncertainty of the technology, these reductions were not quantified.

In addition, the project proposes to divert mixed construction and demolition debris to City-certified construction and demolition waste processors, using City-certified waste haulers, to achieve a waste diversion standard that is higher than the requirement of 75 percent identified in the City's Construction and Demolition Diversion Program (Chapter 9, Part 5 of the San José Municipal Code). Diverting mixed construction and demolition debris would reduce truck trips to landfills, which are typically located some distance away from city centers, and would increase the amount of waste recovered (e.g., recycled, reused) at material recovery facilities, thereby further reducing fuel consumption for transportation. Based on these project features, the emissions modeling and energy analysis assumes that 84 percent of waste would be diverted.

As analyzed above, construction would use energy for on-site activities, for construction worker travel, and to transport construction materials and demolition debris to and from the project site. Idling restrictions and the use of cleaner, energy-efficient equipment would result in relatively less fuel combustion and energy consumption. Thus, the proposed project's construction-related energy use would be minimized. Therefore, construction of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy, and construction-related impacts would be **less than significant**.

Operations

During operation of the proposed project, energy would be consumed for multiple purposes, including stationary sources such as HVAC (including pumps, chillers, and cooling towers associated with on-site district utilities [central utility plants], lighting, EV charging, and emergency generators). Energy would also be consumed during proposed project operations for water usage, solid waste disposal, and vehicle trips.

Table 3.4-3 summarizes the project's on- and off-site annual operational energy use after buildout. On- and off-site energy use associated with existing uses on the site are netted out of the annual totals, which are compared to state and county totals for informational purposes.

As shown in Table 3.4-3, the proposed project's annual net new energy demand would be approximately 215,895 MWh of electricity, 1,214 MMBtu of natural gas, 4,420,874 gallons of gasoline, and 1,034,778 gallons of diesel.

TABLE 3.4-3
TOTAL ANNUAL ENERGY USE DURING PROJECT OPERATION (PROJECT BUILDOUT)

Source	Electricity (MWh/yr)	Natural Gas (MMBtu/yr)[a,b]	Gasoline (gal)	Diesel (gal)
Existing Annual Use	**5,095**	**8,842**	**1,751,600**	**313,704**
Project				
Total Annual Building Energy—Buildout[c]	229,055	2,410	—	—
Solar Array[d]	(12,436)	—	—	—
EV Charging	4,437	—	—	—
Emergency Generators	—	—	—	78,165
Wastewater Treatment Plant[e,f]	(65)	—	—	—
Mobile Sources[g]	—	7,646	6,172,474	1,270,318
Project Total Annual Use	**220,990**	**10,056**	**6,172,474**	**1,348,483**
Net Total Annual Use (Project Buildout—Existing)	**215,895**	**1,214**	**4,420,874**	**1,034,778**
Statewide Annual Use	**284,436,262**	**12,327,096,996**	**15,471,000,000**	**3,702,083,333**
% of State Total	**0.08%**	**0.00001%**	**0.03%**	**0.03%**
Countywide Annual Use	**16,708,080**	**440,030,822**	**643,000,000**	**100,000,000**
% of Santa Clara County Total	**1.3%**	**0.0003%**	**0.69%**	**1.03%**

NOTES:
EV = electric vehicle; gal = gallons; MMBtu/yr = million British thermal units; MWh/yr = megawatts per year
All mobile-source fuel consumption calculated using fleet mixes, vehicle types, fuel efficiencies, and fuel types from EMFAC2017.
a EMFAC2017 includes natural gas vehicles, which are incorporated into natural gas totals in this table.
b Natural gas consumption includes consumption of natural gas through vehicles that would access the project site.
c Building energy totals account for the conservative approach of assuming individual cooling/heating units for buildings and do not assume use of the district-wide thermal network.
d Solar generation estimated using the total photovoltaic (PV) capacity of 7.8 megawatts (MW) inputted into the PVWatts solar tool. The PVWatts tool accounts for different environmental factors such as daily sunlight, angle of solar panels, the geographical location of the site, and panel efficiency ratings. Available online at https://pvwatts.nrel.gov/. For detailed assumptions, refer to Appendix F2.
e The wastewater treatment electricity savings derive from the project treating and distributing wastewater at its on-site plant rather than pumping wastewater off-site for treatment and distribution. Electricity used by the on-site wastewater treatment plant is incorporated as part of the total building energy. For assumptions and calculations, refer to Appendix 2F.
f If an on-site wastewater treatment plant is not constructed and the project instead uses the regional wastewater treatment facility, electricity usage would increase by 65 MWh per year.
g The mobile-source energy use reported here does not include reductions associated with Mitigation Measure AQ-2h, Enhanced Transportation Demand Management Program and, therefore, overstates mobile source energy consumption for the proposed project with mitigation.

SOURCES:
Data compiled by Environmental Science Associates in 2020.
CalEEMod, 2020.
EMFAC, 2017.
California Energy Commission, California Energy Consumption Database, 2019. Available at https://ecdms.energy.ca.gov/.
California Energy Commission, California Annual Retail Fuel Outlet Report Results (2018), available online at https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html.

Electricity

Assuming compliance with 2019 Title 24 standards and applicable 2019 CALGreen Code requirements, at buildout the proposed project would result in a projected net increase in the annual demand for electricity totaling approximately 215,895 MWh. In addition to complying with the CALGreen Code, the proposed project would incorporate project design features necessary to achieve the LEED for Neighborhood Development (ND) Gold certification level as

well as LEED Gold for office buildings. Mitigation Measure GR-2 would ensure the implementation of these design features.

Renewable energy, coming entirely from wind, accounted for 48 percent of SJCE's overall energy mix in 2018.[45] Thus, electricity provided to meet the project's energy demand would include some mix of renewable energy. Based on data collected by the CEC's California Energy Consumption Database, the state's total electricity consumption for 2018 (the latest data available) was 284,436,262 MWh of electricity and Santa Clara County's total electricity consumption for 2018 was 16,708,080 MWh.[46] As such, the project-related net increase in annual electricity consumption, 215,895 MWh, would represent approximately 0.08 percent of statewide electricity and 1.3 percent of countywide electricity. Furthermore, statewide energy demand for 2030 (the closest projected year to the proposed project's opening year) is estimated at 326,026,000 MWh.[47] The project's future energy use would represent about 0.007 percent of future state consumption, and would be within projected electricity supplies.

With regard to peak-load conditions, the state's grid system experienced an annual high peak of 46,424 MW on July 5, 2018. On the same day, PG&E experienced a peak annual demand of 19,245 MW.[48] In comparison, the proposed project would consume a net increase of 215,895 MWh on an annual basis; assuming 12 hours of active electricity demand per day, that would be equivalent to approximately 49.3 MW at buildout (peak demand assuming 4,380 hours per year of active electricity demand).[49]

This estimate also conservatively excludes the benefits of improvements in demand response attributable to the Title 24 energy standards, which would further reduce peak demand. The Title 24 Building Energy Efficiency Standards include measures that encourage load shifting and demand response. Title 24 energy use performance standards are based on the time-dependent valuation of energy, which uses the value of the electricity or natural gas used at every hour of the year to incentivize load shifting off of the peak. The proposed project would not have a substantial impact on the peak- and base-period demands for electricity or other forms of energy. Therefore, the project's operational electricity consumption would have a negligible effect on peak-load conditions of the power grid.

The district-wide thermal network would be consistent with the City's Climate Smart Plan, enabling the project to be combustion-free by providing heating and cooling only through electric equipment. Equipment would be selected to comply with Title 24 Building Energy Efficiency Standards and would support achievement of a LEED ND Gold rating for the project.

As described previously, the proposed project would incorporate a variety of energy and water conservation measures and features to reduce energy usage and minimize energy demand, as evidenced by the reduced contribution of the proposed project to overall sales between 2018 and

45 San José Community Energy, 2018 Power Content Label, 2019. Available at https://www.energy.ca.gov/sites/default/files/2020-01/2018_PCL_San_Jose_Clean_Energy.pdf.
46 California Energy Commission, *California Energy Demand 2018–2030 Revised Forecast*, January 2018.
47 California Energy Commission, *California Energy Demand 2018–2030 Revised Forecast*, January 2018.
48 California Independent System Operator, *2018–2019 Transmission Plan*, March 29, 2019. Available at http://www.caiso.com/Documents/ISO_BoardApproved-2018-2019_Transmission_Plan.pdf. Accessed January 2020.
49 Calculated as follows: 165,822 MWh / 4,380 hours = 37.9 MW.

2030. Therefore, with the incorporation of these measures and features, operation of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of electricity, and the impact would be **less than significant**.

Natural Gas

With compliance with 2019 Title 24 standards and applicable CALGreen Code requirements, at buildout, the proposed project would use natural gas primarily for mobile source fuel and for cooking in up to 20,000 square feet of new project commercial kitchen space and would generate an estimated net increase in the on-site annual demand for natural gas totaling approximately 1,214 MMBtu. Building energy natural gas use for the proposed project would be less than from the existing uses. The proposed project would not provide natural gas in residential uses, office buildings, or the remainder of the retail uses.

As discussed above, in addition to complying with applicable regulatory requirements regarding energy conservation (e.g., California Building Energy Efficiency Standards and the CALGreen Code), the proposed project would incorporate design features to further reduce energy use. In addition, the project would implement project design features and Mitigation Measure GR-2 as described in Section 3.6, *Greenhouse Gas Emissions*, which includes achievement of the LEED ND Gold certification level.

In the 2018 California Gas Report, PG&E accounts for anticipated regional demand based on various factors, including growth in employment by economic sector, growth in housing and population, and increasingly demanding state goals for reducing GHG emissions. PG&E accounts for an increase in employment and housing from 2018 to 2035. The proposed project would add jobs within the PG&E region and would be consistent with the growth projections set forth in the 2018 California Gas Report.[50]

Furthermore, the 2018 California Gas Report estimates that the future supply of natural gas within the PG&E planning area will be approximately 1,177,147,000 MMBtu.[51] As stated above, the proposed project's annual net increase in demand for natural gas is estimated to be approximately 1,214 MMBtu. Thus, the proposed project would account for approximately 0.0001 percent of the forecasted annual consumption in the PG&E planning area; would fall within PG&E's projected consumption for the area; and would be consistent with PG&E's anticipated regional demand from population or economic growth.[52] Therefore, with incorporation of the project design features described above, operation of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of natural gas, and the impact would be **less than significant**.

Transportation Energy

During operation, project-related vehicle use would consume petroleum-based fuels for vehicular travel to and from the project site. The project site is located in a Priority Development Area and

[50] California Gas and Electric Utilities, *2018 California Gas Report*, p. 38.
[51] California Gas and Electric Utilities, *2018 California Gas Report*, p. 59.
[52] Note that although actual operations would only occur for part of 2024, the energy analysis assumes a full year of operations to present a conservative estimate, because energy efficiencies will increase in subsequent years, thus reducing energy consumption from the same activities.

Transit Priority Area, which designate the site as an area for future growth due to transit access and proximity to job centers, shopping districts, and other services. The site is also adjacent to Diridon Station, a central passenger rail hub that is served by Caltrain, the Altamont Corridor Express, Santa Clara Valley Transportation Authority (VTA) light rail, the Amtrak Capitol Corridor, and the Amtrak Coast Starlight. In addition, Diridon Station is currently served by bus lines including local and express VTA bus lines, the DASH Downtown Area Shuttle, Monterey-Salinas Transit, Santa Cruz Metro, Amtrak Thruway Bus, Greyhound Lines, Megabus, and employer shuttles. Additionally, as of spring 2020, BART service to Diridon Station is anticipated to begin in approximately 2030 as a subsurface extension of the BART line to Berryessa Station in East San José.

The proposed project would place a mix of land uses including residential, office, and retail uses close to Diridon Station, thereby minimizing VMT and vehicle trips. The vehicle fleet that would be used by project employees and visitors would consist primarily of light-duty automobiles and light-duty trucks, which are subject to fuel-efficiency standards. Other trips to the project site would include trips associated with residential uses, the hotel, corporate accommodations, conferences, and logistics. Most of these trips would also be subject to fuel-efficiency standards and/or compliance with anti-idling regulations for medium- and heavy-duty vehicles.

As reported in Table 3.4-3, the project's mobile sources would result in an annual net increase in petroleum-based fuel usage of approximately 4,420,874 gallons of gasoline and 1,034,778 gallons of diesel. Based on the California Energy Commission's *California Annual Retail Fuel Outlet Report*, residents and employees statewide consumed 15,471,000,000 gallons of gasoline and 3,702,083,333 gallons of diesel. Santa Clara County consumed 643,000,000 gallons of gasoline and approximately 100,000,000 gallons of diesel fuel in 2018.[53] The proposed project would account for 0.03 percent of statewide consumption for both gasoline and diesel, and for 0.69 percent and 1.03 percent of countywide consumption of gasoline and diesel, based on the available county fuel sales data for the year 2018.

Transportation fuels (gasoline and diesel) are produced from crude oil, which can be domestic or imported from various regions around the world. Based on current proven reserves, crude oil production would be sufficient to meet more than 50 years of worldwide consumption.[54] Fuels used for vehicle trips resulting from the proposed project would be required to comply with CAFE fuel economy standards, which would result in more efficient use of transportation fuels (lower consumption). Vehicles used for project-related vehicle trips would also comply as applicable with AB 1493 and the LCFS, which are designed to reduce vehicular GHG emissions, but would also result in additional fuel savings.

The proposed project would support statewide efforts to improve transportation energy efficiency and reduce transportation energy consumption with respect to private automobiles. As discussed in detail in Section 3.9, *Land Use*, the proposed project's design and characteristics would be

[53] California Energy Commission, 2018 California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2019. Available at https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed January 2020.

[54] BP Global, Oil Reserves. Available at https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/oil.html. Accessed January 2020.

consistent with and would not conflict with the goals of *Plan Bay Area 2040*. As discussed in Impact EN-2, the mixed-use design of the proposed project would increase the density of an infill site served by a variety of transit options.

Further, the project energy analysis presented in Table 3.4-3, takes a conservative approach and does not include reductions associated with the enhanced transportation demand management program (see Mitigation Measure AQ-2h in Section 3.1, *Air Quality*). With implementation of Mitigation Measure AQ-2h, energy use from mobile sources would be reduced below the values presented herein.

For the reasons described above, the proposed project would reduce operational transportation fuel demand, consistent with and not in conflict with state, regional, and City goals. Therefore, operation of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy, and the impact would be **less than significant**.

Mitigation: None required.

Impact EN-2: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. *(Less than Significant)*

CALGreen Code and Title 24

The proposed project would be designed in a manner that would be consistent with relevant energy conservation plans designed to encourage development resulting in the efficient use of energy resources. The proposed project would comply with CALGreen Code and Title 24 requirements to reduce energy consumption by implementing energy-efficient building designs, reducing indoor and outdoor water demands, providing EV charging spaces, and installing energy-efficient appliances and equipment.

The proposed project would be designed to obtain a LEED ND Gold level of certification and LEED Gold certification for office buildings. While the exact energy reduction strategies that would be used to secure this certification are not known at this time, the project would integrate low-impact development, transportation demand management, energy efficiency, water conservation, and other green building practices.

Building-level design details for the proposed project are still being refined; therefore, specific green building strategies to obtain LEED certification for each proposed building have not been fully identified. The strategies and measures identified in the project's AB 900 application demonstrate that the project would meet LEED ND Gold certification, which requires that at least one building in each phase be certified LEED Gold, consistent with AB 900 certification. The project applicant has further committed to constructing all office buildings to LEED Gold standards. In addition, the project would comply with the City's New Construction Green Building Requirements.

The LEED scorecards would be key components of the proposed project's Basis of Design documentation required for compliance with the Title 24 commissioning requirements and the

LEED collaborative design requirements. Compliance with LEED requirements would be demonstrated in a two-step process; a first submittal would occur at the completion of design and the second would occur when construction is complete. The credit strategies identified on the LEED scorecard would be monitored and approved through each design submittal.

The proposed project would implement LEED efficiency strategies and incorporate water conservation, energy conservation, and other features consistent with the CALGreen Code, Title 24, and City sustainability goals. As a result, the proposed project would not conflict with or obstruct a state plan for renewable energy or energy efficiency. Thus, the impact would be **less than significant**.

Plan Bay Area 2040

As discussed in Section 3.6, *Greenhouse Gas Emissions*, and Section 3.9, *Land Use,* the proposed project would be consistent with *Plan Bay Area 2040,* the Bay Area's sustainable communities strategy developed pursuant to SB 375. *Plan Bay Area 2040* outlines the Bay Area's strategies for meeting the region's SB 375 goals. This includes the goals of (1) reducing per-capita CO_2 emissions from cars and light-duty trucks, and (2) providing sufficient housing for the entire region's projected population growth, regardless of income.

Overall, the proposed project would be consistent with the goals and policies of *Plan Bay Area 2040* because the project site is an infill site accessible to transit and the project would support reductions in VMT to and from the project site by including a comprehensive transportation demand management program. Although *Plan Bay Area 2040* is not technically an energy efficiency plan, consistency with the plan has energy implications, including the reduction of VMT, which would reduce GHG emissions and fossil fuel consumption from travel to and from the project site. For these reasons, the impact would be **less than significant**.

Climate Smart San José

As discussed in Section 3.6, *Greenhouse Gas Emissions*, the proposed project would be consistent with the goals and strategies of *Climate Smart San José,* the City's plan for reducing air pollution, conserving water, and creating a stronger and healthier community. *Climate Smart San José* builds on the 15-year Green Vision sustainability plan by charting a path to achieve the GHG emissions reductions contained in the international Paris Agreement on Climate Change.

The proposed project includes multiple green features under the LEED ND Gold certification that align with the goals of *Climate Smart San José* to transition to renewable energy, increase density, accommodate new technologies, and create local jobs sited near public transit. The proposed project would include a 7.8 MW solar photovoltaic array to generate renewable energy and a district-wide thermal network, enabling the project to be combustion-free by providing heating and cooling only through electric equipment, other than natural gas that would be used for cooking in up to 20,000 square feet of commercial kitchen space. The project would also co-locate a mix of different land uses to promote walking, biking, and alternative forms of transit, and would designate a minimum of 10 percent of total parking spaces as EV charging spaces. Furthermore, the project site is near a number of different public transit options that could reduce the number of vehicles traveling to and from the site. Therefore, the proposed project would support the goals of *Climate Smart San José*, and the impact would be **less than significant**.

Envision San José 2040 General Plan

As discussed in detail in Section 3.6, *Greenhouse Gas Emissions*, the proposed project would be consistent with the General Plan's major strategies. The General Plan centers on 14 major strategies that outline the City's plan for growth and taking on a growing environmental and economic leadership role. The project's LEED ND commitments would promote energy conservation, water conservation, waste diversion, and environmental leadership through design aspects such as solar photovoltaic, public transit accessibility, and co-location of land uses that create a walkable network. Therefore, the proposed project would be consistent with the General Plan, and the impact would be **less than significant**.

Mitigation: None required.

Cumulative Impacts

Impact C-EN-1: The proposed project would not result in a cumulatively considerable contribution to a significant energy impact. *(Less than Significant)*

The geographic area for cumulative energy impacts is the state of California. Past, present, and future development projects contribute to the state's energy impacts. If a project is determined to have a significant energy impact, it is concluded that the impact would be cumulatively considerable. As discussed under Impacts EN-1 and EN-2, the proposed project would not result in significant energy impacts or conflict with or obstruct a state or local plan for energy efficiency. The proposed project, therefore, would not have a cumulatively considerable contribution to a significant cumulative energy impact. As a result, this impact would be **less than significant**.

Mitigation: None required.
