4.15 ENERGY

This section discusses energy use resulting from implementation of the proposed project and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency. An Energy Analysis[1] was prepared for the proposed project. This report was utilized in the analysis provided in this section, and is provided as Appendix L in this Environmental Impact Report (EIR). Additionally, the Energy Analysis was peer reviewed.[2] The energy use analysis in this section is based on information from the California Emissions Estimator Model (CalEEMod) Version 2022.1, as included in Appendix A of the Energy Analysis.

4.15.1 Setting

The following discussion provides an overview of existing energy usage on site.

4.15.1.1 Electricity

Electricity is a manmade resource. The production of electricity requires the consumption or conversion of energy resources (including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources) into energy. Electricity is used for a variety of purposes (e.g., lighting, heating, cooling, and refrigeration, and for operating appliances, computers, electronics, machinery, and public transportation systems).

According to the most recent data available, in 2021, California's electricity was generated primarily by natural gas (37.9 percent), renewable sources (33.6percent), large hydroelectric (9.2 percent), nuclear (9.3 percent), coal (3.0 percent), and other unspecified sources. Total electric generation in California in 2021 was 277,764 gigawatt-hours (GWh), up 2 percent from the 2020 total generation of 272,576 GWh.[3]

The City of San Rafael receives its electricity from the Pacific Gas and Electric Company (PG&E). The project site is within the service territory of PG&E and MCE Community Choice Energy. According to the California Energy Commission (CEC), total electricity consumption in the PG&E service area in 2021 was 78,588 gigawatt-hours (GWh) or 78,587,869,096 kilowatt-hours (kWh).[4] Of this total, Marin County consumed 1,347 GWh or 1,347,566,471 kWh.[5]

1 Dudek. 2023. *Northgate Town Square Project Energy Analysis.* August.

2 LSA Associates, Inc. 2023. *Peer Review of the Northgate Town Square Project Air Quality and Greenhouse Gas Emissions Technical Report and Energy Analysis Memorandum.* March.

3 California Energy Commission (CEC). 2022a. 2021 Total System Electric Generation. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation (accessed August 2023).

4 California Energy Commission (CEC). 2022. Electricity Consumption by Entity. Website: http://www.ecdms.energy.ca.gov/elecbyutil.aspx (accessed August 2023).

5 California Energy Commission (CEC). 2022. Electricity Consumption by County. Website: http://www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed August 2023).

4.15.1.2 Natural Gas

Natural gas is a non-renewable fossil fuel. Fossil fuels are formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over millions of years. Natural gas is a combustible mixture of hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas is found in naturally occurring reservoirs in deep underground rock formations. Natural gas is used for a variety of uses (e.g., heating buildings, generating electricity, and powering appliances such as stoves, washing machines and dryers, gas fireplaces, and gas grills).

Natural gas consumed in California is used for electricity generation (45 percent), residential uses (21 percent), industrial uses (25 percent), and commercial uses (9 percent). California continues to depend on out-of-state imports for nearly 90 percent of its natural gas supply.[6]

PG&E is the natural gas service provider for San Rafael. According to the CEC, total natural gas consumption in the PG&E service area in 2021 was 4,467 million therms (4,467,074,766 therms).[7] Total natural gas consumption in Marin County in 2021 was 67.9 million therms.[8]

4.15.1.3 Petroleum/Transportation Energy

Petroleum is also a non-renewable fossil fuel. Petroleum is a thick, flammable, yellow-to-black mixture of gaseous, liquid, and solid hydrocarbons that occurs naturally beneath the earth's surface. Petroleum is primarily recovered by oil drilling. It is refined into a large number of consumer products, primarily fuel oil, gasoline, and diesel.

The average fuel economy for light-duty vehicles (autos, pickups, vans, and sport utility vehicles [SUVs]) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.9 mpg in 2020.[9] Federal and State fuel economy standards require the continued increase of fuel efficiency in passenger and commercial fleets. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline consumed by light-duty cars, pickup trucks, and SUVs. According to the most recent data available, total gasoline consumption in California was 319,514 thousand barrels or 1,613.5 trillion British thermal units (BTU) in 2021.[10] Of the total gasoline

6 California Energy Commission (CEC). 2021c. Supply and Demand of Natural Gas in California. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california (accessed August 2023).

7 California Energy Commission (CEC). 2022a. Gas Consumption by Entity. Website: http://www.ecdms.energy.ca.gov/gasbyutil.aspx (accessed August 2023).

8 California Energy Commission (CEC). 2022b. Gas Consumption by County. Website: http://www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed August 2023).

9 United States Department of Transportation (DOT). Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles. Website: https://www.bts.gov/content/average-fuel-efficiency-us-light-duty-vehicles (accessed August 2023).

10 A British thermal unit is defined as the amount of heat required to raise the temperature of 1 pound of water by 1°F.

consumption, 302,881 thousand barrels or 1,529.5 trillion BTU were consumed for transportation.[11] Based on fuel consumption obtained from EMFAC2021, approximately 11.17 million gallons of diesel and approximately 106.6 million gallons of gasoline will be consumed from vehicle trips in Marin County in 2023.

4.15.1.4 Regulatory Framework

Federal and State agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation (DOT), the United States Department of Energy (DOE), and the United States Environmental Protection Agency (EPA) are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. On the State level, the California Public Utilities Commission (CPUC) and the CEC are two agencies with authority over different aspects of energy.

The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies and serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy.

The CEC is the State's primary energy policy and planning agency. The CEC forecasts future energy needs, promotes energy efficiency, supports energy research, develops renewable energy resources, and plans for/directs the State response to energy emergencies. The applicable federal, State, regional, and local regulatory framework is discussed below.

4.15.1.5 Federal Regulations

National Highway Traffic Safety Administration (NHTSA) Corporate Average Fuel Economy (CAFE) Standards. On March 31, 2022, the NHTSA finalized the CAFE standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024–2025 and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gas between model years 2030 to 2050.

4.15.1.6 State Regulations

Assembly Bill 1575, Warren-Alquist Act. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted Assembly Bill (AB) 1575 (also known as the Warren-Alquist Act), which created the CEC. The statutory mission of the CEC is to forecast future energy needs, license power plants of 50 megawatts (MW) or larger, develop energy technologies and renewable energy

[11] United States Energy Information Administration (EIA). 2021. California State Profile and Energy Estimates. Table F3: Motor gasoline consumption, price, and expenditure estimates, 2021. Website: eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=CA (accessed August 2023).

resources, plan for and direct State responses to energy emergencies, and, perhaps most importantly, promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code (PRC) Section 21100(b)(3) and *State CEQA Guidelines* Section 15126.4 to require EIRs to include, where relevant, mitigation measures proposed to minimize the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F to the *State CEQA Guidelines*. Appendix F assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *State CEQA Guidelines* also states that the goal of conserving energy implies the wise and efficient use of energy and the means of achieving this goal, including (1) decreasing overall per capita energy consumption; (2) decreasing reliance on fossil fuels such as coal, natural gas, and oil; and (3) increasing reliance on renewable energy sources.

Senate Bill 1389, Energy: Planning and Forecasting. In 2002, the State Legislature passed Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan every 2 years for electricity, natural gas, and transportation fuels for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles (ZEVs) and their infrastructure needs, and encouragement of urban designs that reduce vehicle miles traveled (VMT) and accommodate pedestrian and bicycle access.

In compliance with the requirements of SB 1389, the CEC adopts an Integrated Energy Policy Report every 2 years and an update every other year. The most recently adopted report includes the *2023 Integrated Energy Policy Report.*[12] The *Integrated Energy Policy Report* covers a broad range of topics, including decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, updates on Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast. The *Integrated Energy Policy Report* provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs.

Renewable Portfolio Standard. SB 1078 established the California Renewable Portfolio Standards program in 2002. SB 1078 initially required that 20 percent of electricity retail sales be served by renewable resources by 2017; however, this standard has become more stringent over time. In 2006, SB 107 accelerated the standard by requiring that the 20 percent mandate be met by 2010. In April 2011, SB 2 required that 33 percent of electricity retail sales be served by renewable resources by 2020. In 2015, SB 350 established tiered increases to the Renewable Portfolio Standards of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. In 2018, SB 100 increased the

[12] California Energy Commission (CEC). 2023. *2023 Integrated Energy Policy Report*. California Energy Commission. Docket Number: 23-IEPR-01.

requirement to 60 percent by 2030 and required that all the State's electricity come from carbon-free resources by 2045. SB 100 took effect on January 1, 2019.[13]

Title 24, California Building Code. Energy consumption by new buildings in California is regulated by the Building Energy Efficiency Standards, embodied in Title 24 of the California Code of Regulations (CCR), known as the California Building Code (CBC). The CEC first adopted the Building Energy Efficiency Standards for Residential and Non-Residential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. In 2010, the California Building Standards Commission (CBSC) adopted Part 11 of the Title 24 Building Energy Efficiency Standards, referred to as the California Green Building Standards Code (CALGreen Code). The CALGreen Code took effect on January 1, 2011. The CALGreen Code is updated on a regular basis, with the most recent update consisting of the 2022 CALGreen Code standards that became effective January 1, 2023. The CALGreen Code established mandatory measures for residential and non-residential building construction and encouraged sustainable construction practices in the following five categories: (1) planning and design, (2) energy efficiency, (3) water efficiency and conservation, (4) material conservation and resource efficiency, and (5) indoor environmental quality. As further discussed in the Regional Regulations section below, the City has also adopted reach codes which go beyond the State code requirements for certain building requirements.

California Energy Efficiency Strategic Plan. On September 18, 2008, the CPUC adopted California's first Long-Term Energy Efficiency Strategic Plan, presenting a roadmap for energy efficiency in California. The Plan articulates a long-term vision and goals for each economic sector and identifies specific near-term, mid-term, and long-term strategies to assist in achieving those goals. The plan also reiterates the following four specific programmatic goals known as the "Big Bold Energy Efficiency Strategies" that were established by the CPUC in Decisions D.07-10-032 and D.07-12-051:

- All new residential construction will be zero net energy (ZNE) by 2020.[14]
- All new commercial construction will be ZNE by 2030.
- 50 percent of commercial buildings will be retrofitted to ZNE by 2030.
- 50 percent of new major renovations of State buildings will be ZNE by 2025.

Plan Bay Area 2050. Plan Bay Area 2050 is a State-mandated, integrated long-range transportation and land use plan. As required by SB 375, all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of a Regional Transportation Plan (RTP). In the San Francisco Bay Area (Bay Area), the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing to meet greenhouse gas (GHG) reduction targets set by the California Air Resources Board (CARB). Plan Bay Area 2050 connects the elements of housing, the economy, transportation, and the environment through 35 strategies that will make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. In the short-term, the plan's Implementation Plan identifies more than 80 specific

[13] California Public Utilities Commission (CPUC). 2019. Renewables Portfolio Standard (RPS) Program. Website: https://www.cpuc.ca.gov/rps (accessed August 2023).

[14] Achievement of this goal was determined not yet to be feasible in time for the 2019 Building Energy Efficiency Standards (effective 2020), but State regulators continue to take steps toward this goal.

actions for the MTC, ABAG, and partner organizations to take over the next 5 years to make headway on each of the 35 strategies.

4.15.1.7 Local Regulations

City of San Rafael General Plan 2040. Policies pertaining to energy are addressed in multiple chapters of the General Plan.[15] The Conservation and Climate Change Element, Land Use Element, and Mobility Element include policies regarding energy that focus on non-renewable resources, electricity, gas and petroleum products, and emphasize the various regulations and technologies that apply to energy conservation. The following policies are applicable to the proposed project:

> **Policy LU-1.3: Land Use and Climate Change.** Focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the GHG emissions associated with motor vehicle trips and support the City's climate action goals.
>
> **Policy C-3.4: Green Streets.** Design streets and infrastructure so they are more compatible with the natural environment, mitigate urban heat island effects, and have fewer negative impacts on air and water quality, flooding, climate, and natural habitat.
>
> **Policy C-3.8: Water Conservation.** Encourage water conservation and increased use of recycled water in businesses, homes, and institutions. Local development and building standards shall require the efficient use of water.
>
> **Policy C-3.9: Water-Efficient Landscaping.** Encourage—and where appropriate require—the use of vegetation and water-efficient landscaping that is naturalized to the San Francisco Bay region and compatible with water conservation, fire prevention and climate resilience goals.
>
> **Policy C-4.1: Renewable Energy.** Support increased use of renewable energy and remove obstacles to its use.
>
> **Policy C-4.2: Energy Conservation.** Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.
>
> **Policy C-4.3: Managing Energy Demand.** Reduce peak demands on the electric power grid through development of local sources, use of battery storage, deployment of "smart" energy and grid systems that use technology to manage energy more efficiently, and public education.
>
> **Policy C-4.4: Sustainable Building Materials.** Encourage the use of building materials that reduce environmental impacts and the consumption of nonrenewable resources.

City of San Rafael Climate Change Action Plan. In 2006, the City of San Rafael (City) was one of the early signatories to the United States Conference of Mayors Climate Protection Agreement, committing the City to working towards meeting the goals of the Kyoto Protocol. The City Council

[15] City of San Rafael. 2021. *General Plan 2040.* August. Website: https://www.cityofsanrafael.org/gp-2040-document-library/ (accessed August 2023).

adopted San Rafael's first San Rafael Climate Change Action Plan (CCAP) on April 20, 2009, which was developed by a 14-member Green Ribbon Committee along with volunteer subject matter experts. It set goals of a 25 percent reduction of GHGs by 2020, and an ambitious 80 percent reduction by 2050 to meet targets set by the State of California.

As of 2019, the City met the State target of 15 percent reduction of GHGs as well as a local 25 percent stretch goal. In the meantime, the State issued new interim targets for 2030 (i.e., 40 percent reduction of GHGs below 1990 levels). In 2017, the City convened a 20-member Climate Action Working Group to revise the CCAP toward these new 2030 targets. The result is the Climate Change Action Plan 2030 (CCAP 2030),[16] which was approved by the City Council on May 20, 2019. CCAP 2030 includes a variety of regulatory, incentive-based, and voluntary strategies that are expected to reduce emissions from both existing and new development in San Rafael.

City of San Rafael Municipal Code. In December 2022, the San Rafael City Council approved a reach code ordinance, codified as Chapter 12.245.020, Amendments, of the City's Municipal Code. The amendments prohibit new fuel gas and oil piping in new construction unless for use in emergency electrical generation when required by the code, commercial kitchens for preparing food, commercial laundries for laundry, or in an approved industrial process. Furthermore, at the discretion of the building official, the building official may approve fuel gas in new construction or expand fuel gas in existing construction when replacing with electric has been demonstrated to be technically infeasible or has a disproportionate cost to the project, thereby causing an insurmountable hardship.

Furthermore, the updated code requires the installation of electric vehicle infrastructure greater than the State code requirements. For single-family homes and duplexes, the City's code requires new construction to have the capacity, wiring, and equipment so that it would be easy for a homeowner to install the charger of their choice. For multifamily dwellings, it requires 100 percent of parking spaces attributed to tenants to be equipped with low-power Level 2 charger infrastructure with receptacles for charging at lower speeds, providing the flexibility to more easily add the charging equipment in the future. A total of 15 percent of those spaces are required to have a Level 2 charger installed. For non-residential new construction, the City's code matches the State's Tier 1 requirements, which require 35 percent of parking spaces to be EV Ready with low-Level 2 infrastructure, 10 percent EV Capable (meaning only the conduit installed), and 10 percent installed fully with Level 2 chargers.

4.15.2 Impacts and Mitigation Measures

This section analyzes the potential of the proposed project to result in impacts related to energy. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with implementation of the proposed project and identifies mitigation measures, as appropriate.

[16] City of San Rafael. 2019. *Climate Change Action Plan 2030.* May. Website: https://www.cityofsanrafael.org/climate-change-action-plan/ (accessed August 2023).

4.15.2.1 Significance Criteria

Implementation of the proposed project would have a significant impact related to energy if it would:

Threshold 4.15.1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

Threshold 4.15.2: Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

4.15.2.2 Project Impacts

This section analyzes potential project-specific impacts related to energy use.

Threshold 4.15.1: Energy Use. The proposed project includes a development plan that includes a mix of commercial and residential land uses. Implementation of the proposed project would increase the demand for energy through day-to-day operations and fuel consumption associated with project construction. However, the existing uses at the proposed project site also currently demand energy. The one-time construction energy demand and the operational net change in energy demand are evaluated below.

Construction. Project construction would require energy resources primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, and generators.

Electricity. The electricity demand at any given time would vary throughout the proposed project construction period based on the construction activities being performed and would cease upon completion of construction. When not in use, electric equipment would be powered off to avoid unnecessary energy consumption. The electricity used for construction activities would be temporary and minimal, would be within the supply and infrastructure service capabilities of PG&E and MCE, and it would not require additional local or regional capacity. Therefore, because energy use during construction would be temporary and would not be wasteful or inefficient, impacts would be **less than significant**.

Natural Gas. Natural gas is not anticipated to be required during proposed project construction because construction of new buildings and facilities typically does not consume natural gas. Peak energy demand specifically applies to electricity. Because natural gas and petroleum are liquid, these energy resources do not have the same constraints as electricity supply. Nonetheless, if any natural gas is needed, it would be sufficiently served by the existing supply from PG&E and would not require additional local or regional capacity. Any minor amounts of natural gas that may be consumed as a result of construction would be

temporary and negligible and would not have an adverse effect; therefore, this impact would be **less than significant**.[17]

Petroleum. Off-road equipment used during construction of the proposed project would primarily rely on diesel fuel, as would vendor trucks involved in delivery of materials to the individual parcels, haul trucks exporting demolition material, and haul trucks importing or exporting soil, tree debris, and other materials to and from the proposed project site. In addition, construction workers would travel to and from the proposed project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel in gasoline-powered light-duty vehicles.

The estimated diesel fuel usage from construction equipment, haul trucks, and vendor trucks and the estimated gasoline fuel usage from worker vehicles are shown in Table 4.15.A. Attachment A in Appendix L lists the assumed equipment usage and vehicle trips.

Table 4.15.A: Total Proposed Project Construction Petroleum Demand

Energy Type	Total Energy Consumption (gallons)
Diesel Fuel	364,313
Gasoline	139,482

Source: *Northgate Town Square Project Energy Analysis* (Dudek 2023).

Construction associated with the development under Phase 1 is estimated to consume a total of approximately 90,961 gallons of gasoline and 231,885 gallons of diesel. Under Phase 2, construction is estimated to consume a total of approximately 48,521 gallons of gasoline and 132,428 gallons of diesel. In total, proposed project construction fuel consumption would total approximately 139,482 gallons of gasoline and 364,313 gallons of diesel.

Notably, the proposed project would be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation, as recently amended effective October 1, 2023: (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets; (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits); (5) requires phase-out of the oldest and dirtiest engines starting January 1, 2024; (6) requires procurement and use of renewable diesel (R99 or R100) starting January 1, 2024, with limited exceptions; and (7) requires contracting entities to obtain valid

[17] While no natural gas is anticipated to be used during construction because construction equipment is typically diesel fueled, the possibility of natural gas use is acknowledged in the event a natural gas-fueled piece of equipment is used. However, as noted previously, all equipment was assumed to be diesel fueled in CalEEMod.

Certificates of Reported Compliance for all listed contractors and subcontractors for contract work where vehicles subject to the Off-Road Regulation will operate. The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology requirements.

Overall, the proposed project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy efficient than at comparable construction sites in the region or State. Therefore, because energy use during construction would be temporary and would not be wasteful or inefficient, impacts would be **less than significant**.

Operation. Energy use consumed by the project as proposed during operation would be associated with commercial natural gas use, commercial and residential electricity consumption, and fuel used for commercial and residential vehicle trips associated with the project. Mitigation Measure GHG-1, as further discussed in Section 4.11, Greenhouse Gas Emissions, would prohibit the use of natural gas fire pits as part of the proposed project, but natural gas would still be utilized as a part of the operation of proposed commercial kitchens. Energy consumption was estimated in the Energy Analysis for the project using default energy intensities by land use type in CalEEMod (for calculations, see Attachment A of Appendix L).

Electricity. Project operation would require electricity for multiple purposes including, but not limited to, building heating, ventilation, and air conditioning (HVAC), lighting, appliances, and electronics. Additionally, the supply, conveyance, treatment, distribution and disposal of water and wastewater would indirectly result in electricity usage. CalEEMod was used to estimate the project's electricity uses (see Attachment A of Appendix L for calculations). Default electricity solar generation rates in CalEEMod were used based on the proposed land use and climate zone. Notably, the proposed project's residential development would be all electric to support the City's goals, including the City's CCAP, and natural gas usage would be prohibited in the residential development, as well as in the commercial developments with the exception of being allowed for use in commercial kitchens. The proposed project would meet the EV charging requirements of CalGreen Tier 2 standards. Additionally, renewable power generation would be incorporated into the project site via solar panels that would be located on top of residential buildings and the existing parking structure, and would provide power to the common areas of the proposed project.

CCR Title 24 serves to enhance and regulate California's building standards. The project would meet the 2022 California Building Energy Efficiency Standards (24 CCR, Part 6) at a minimum. The project's operational energy emissions assumed the default assumptions in CalEEMod Version 2022.1.1.16, which is based on the 2019 consumption estimates from the CEC's 2018-2030 Uncalibrated Commercial Sector Forecast (Commercial Forecast), and the energy use from residential land uses is based on the 2019 Residential Appliance Saturation Survey (RASS). According to these estimates, the buildout of Phase 1 would consume approximately 11,946,526 kWh per year (kWh/yr) during operation, and buildout of Phase 2 would consume an additional 110,781 kWh/yr for a project total of approximately 12,057,307 kWh/yr. Under

existing baseline conditions, approximately 9,213,642 kWh are consumed per year. As such, upon project implementation, electricity demand at the project site would increase by 2,732,884 kWh/yr with buildout of Phase 1 and 2,843,665 kWh/yr after buildout of Phase 2. However, as noted in the Energy Analysis, the energy use estimates are based on existing buildings and residences and are not representative of those constructed in compliance with energy efficiency requirements of the latest Title 24 Building Energy Efficiency Standards. Per Appendix D, Technical Source Documentation for Emissions Calculations, of the CalEEMod Version 2022.1 User Guide, "the default energy consumption estimates provided in CalEEMod based on the Commercial Forecast and RASS are very conservative, overestimating expected energy use compared to what would be expected for new buildings subject to the latest Energy Code with more stringent energy efficiency measures."

Furthermore, the energy demand calculations included in the Energy Analysis do not take into account all of the proposed energy-saving project design features that would result in exceedances of the code requirements, including the implementation of the City's reach codes and sustainability measures such as implementing energy-efficient lighting. As such, the operational electricity use of the proposed project would likely be more efficient than what is estimated through this analysis, and would potentially be lower than the calculations presented above. The proposed project would comply with the 2022 CALGreen Code mandatory standards, and the reach codes adopted by the City which go beyond the State code requirements. Proposed new development would be constructed using energy-efficient modern building materials and construction practices, and the proposed project also would use new modern appliances and equipment in accordance with the Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608). As detailed in Section 4.11, Greenhouse Gas Emissions, the City's CCAP 2030 includes a checklist of requirements for building sustainability measures, including energy efficiency measures, which the proposed project would comply with.

PG&E and MCE Community Choice Energy are the private utilities that would supply the proposed project's electricity services. In 2021, a total of 50 percent of PG&E's delivered electricity came from renewable sources, including solar, wind, geothermal, small hydroelectric, and various forms of bioenergy. PG&E reached California's 2020 renewable energy goal in 2017 and is positioned to meet the State's 60 percent by 2030 renewable energy mandate set forth in SB 100. In addition, PG&E plans to continue to provide reliable service to its customers and upgrade its distribution systems as necessary to meet future demand. MCE Community Choice Energy provides renewable energy at competitive prices, and would be an option for future tenants to enroll in at the proposed project site.

In summary, although electricity consumption would increase at the proposed project site due to project buildout, the proposed project would support the City's goals, including all electric development . Building sustainability features, in compliance with CCR Title 24 and the City's CCAP 2030 requirements, would ensure that the proposed project buildings are energy efficient. Electricity supplied by PG&E and MCE Community Choice Energy would provide electricity from renewable energy sources in compliance with State goals mandated in SB 100. Expected energy consumption during proposed project operations would be consistent with, or less than, typical usage rates for residential and commercial uses.

Additionally, through the implementation of the proposed project, there would be a net decrease in commercial land use square footage, thus leading to a reduction of energy usage. For these reasons, electricity consumption of the proposed project would not be considered inefficient, wasteful, or unnecessary, and impacts would be **less than significant**.

Natural Gas. As previously discussed, City regulations would prohibit the installation of natural gas infrastructure in all residential buildings included as part of the proposed project, and all the residential buildings would be all-electric. An electric fuel source would be provided for space heating, water heating, cooking, and clothes drying.

As proposed, the commercial uses would include natural gas use for cooking as a part of restaurant operations. Under existing baseline conditions, it is estimated that approximately 9,063,757 thousand British thermal units (kBTU) are consumed on site per year. As proposed, buildout of Phase 1 would result in consumption of approximately 3,976,405 kBTU of natural gas per year, while buildout of Phase 2 would result in consumption of approximately 5,964,608 kBTU per year (Appendix I, Attachment A). As such, upon project implementation, natural gas demand at the proposed project site would decrease by 5,087,351 kBTU per year with buildout of Phase 1 and would decrease by 3,099,149 kBTU per year with buildout of Phase 2. Because there would be a decrease in natural gas consumption compared to existing conditions, the natural gas consumption of the project, as proposed, would not be considered inefficient or wasteful, and impacts would be **less than significant**

In addition, implementation of Mitigation Measure GHG-1 would require that the proposed project prohibit the inclusion of natural gas fire pits as part of the project design. This would further reduce projected natural gas consumption for the project.

Petroleum. During operations, the majority of fuel consumption resulting from the proposed project would involve the use of motor vehicles traveling to and from the proposed project site, as well as fuels used for alternative modes of transportation that may be used by residents, employees, visitors, and guests of the proposed project.

Petroleum fuel consumption associated with motor vehicles traveling to and from the proposed project site is a function of the operational VMT. Based on the calculations included in the Energy Analysis, the annual VMT attributable to buildout of Phase 1 is expected to be 51,428,573, and the operations of the proposed project in Phase 1 would result in the consumption of an estimated 1,890,974 gallons of gasoline per year and 83,284 gallons of diesel per year from vehicles traveling to and from the proposed project site, or 1,974,258 gallons of petroleum per year. Phase 2 buildout is expected to result in total project VMT of 35,761,945 per year, resulting in an estimated 1,312,788 gallons of gasoline per year and 56,183 gallons of diesel per year from vehicles traveling to and from the proposed project site, or 1,368,971 gallons of petroleum per year.

Under existing baseline conditions at the proposed project site, the existing shopping center is estimated to result in 57,944,797 VMT per year. An estimated 2,225,708 gallons of gasoline and 89,797 gallons of diesel are consumed per year under existing conditions from vehicles

traveling to and from the proposed project site, or 2,315,505 gallons of petroleum per year. As such, total buildout of the proposed project, as expected to occur by year 2040, would lead to a decrease in petroleum consumption of 912,920 gallons of gasoline per year and 33,614 gallons of diesel per year, or 946,534 gallons of total petroleum per year, due to the decreased number of vehicles traveling to and from the proposed project site.

Over the lifetime of the proposed project, the fuel efficiency of the vehicles being used by the residents, visitors, employees, and guests of the proposed project is expected to increase, plus an increased use of all-electric vehicles. As such, the amount of gasoline consumed as a result of vehicular trips to and from the project site during operation would decrease over time. As discussed above, there are numerous regulations in place that require and encourage increased fuel efficiency. For example, the CARB has adopted a new approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and ZEVs in California. Additionally, in response to SB 375, the CARB has adopted the goal of reducing per capita GHG emissions from 2005 levels by 10 percent by the year 2020 and 19 percent by the year 2035 for light-duty passenger vehicles in the MTC and ABAG planning area. This reduction would occur by reducing VMT through the integration of land use planning and transportation. As such, operation of the proposed project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

An important reason that the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy is that it would bring multifamily housing to a site that is both a Priority Development Area under Plan Bay Area 2050 and—except for its northwesternmost corner—a Transit Priority Area. The proposed project site is a designated Priority Development Area and Transit Priority Area because it is well served by passenger rail and bus services. Therefore, it is expected that residents, visitors, guests, and employees may use transit or non-vehicular modes of transportation to travel to and from the proposed project site. The Marin Transit system serves the project location and operates several routes with transit stops adjacent to the proposed project site, which provides local and regional public transit within the proposed project area, including one bus stop that directly serves the proposed project site. The proposed project area is also served by the Sonoma–Marin Area Rail Transit (SMART) rail system, with a train station located at 3801 Civic Center Drive, which is within 0.5 mile of the proposed project site to the east. Furthermore, use of transit and non-vehicular modes of transportation is anticipated to increase over time as local and regional plans and policies facilitating increased use and development of transit and non-vehicular transportation modes are implemented. Section 4.11, Greenhouse Gas Emissions, summarizes some of these plans and policies, including Plan Bay Area 2050, which was adopted by MTC and ABAG in October 2021.

Additionally, project-specific sustainable design features would include EV charging electric infrastructure consistent with State and local requirements as identified at the time of plan check submittal. Such features include on-site bicycle storage and preferential parking for low-emission/fuel-efficient vehicles and carpools/vanpools for residents, visitors, guests, and employees. The proposed project design would also allow for pedestrian circulation in

the proposed project site by employing design features that improve the landscape and streetscape, making the area more pedestrian friendly. Increased EV use would reduce petroleum use and increase electricity use; however, unlike petroleum, electricity is a cleaner and potentially renewable energy source.

In summary, implementation of the proposed project would result in a decrease in petroleum use during operation compared to existing baseline conditions. Additionally, the proposed project would include a variety of features that are expected to reduce the number of vehicles traveling to and from the site during operation. When viewed on a regional scale, the proposed project is an urban infill project located within a large population center that serves an existing demand for a mix of commercial and residential land uses. When compared with new development projects sited on previously undeveloped land and away from population centers, infill projects are generally expected to involve fewer VMT during operation. Given these considerations, the petroleum consumption associated with the proposed project would not be considered inefficient or wasteful, and impacts would be **less than significant.**

Renewable Energy Potential. As included in the Energy Analysis and as part of the proposed project's design process, the project applicant considered how the proposed project could increase its reliance on renewable energy sources to meet its energy demand. Renewable energy sources that were considered for their potential to be used to power the proposed project and that would be consistent with the CEC's definition of eligible renewables include biomass, geothermal, solar, wind, and small hydroelectric facilities.

As a result of this analysis, the proposed project includes solar power, which would be provided by solar panels installed on top of all residential buildings and the existing parking structures, while the retail buildings would be solar ready. Battery storage would be provided in the apartment-style residential buildings. As solar power technology improves in the future and regulations require additional solar, it is reasonable to assume that additional solar power may be provided to the proposed project site. In addition, the proposed project does not preclude installation of additional battery storage in the future.

Summary. As explained above, the proposed project would use renewable energy on site as determined to be feasible and would not result in wasteful, inefficient, or unnecessary consumption of energy resources (including electricity, natural gas, or petroleum) during construction or operation. Impacts would be less than significant.

Threshold 4.15.2: Conflict with a State or Local Plan. The proposed project would be subject to and would comply with, at a minimum, the 2022 California Building Energy Efficiency Standards (i.e., CCR Title 24, Part 6). Part 6 of Title 24 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 11 of Title 24 sets forth voluntary and mandatory energy measures that are applicable to the project under the CALGreen Code, and the City has adopted reach codes that go beyond the State's mandatory measures. As discussed above, the proposed project would result in an increased demand for electricity during operation and a temporary demand for petroleum during construction; however, compared to existing conditions, the proposed project would result in

decreased demand for natural gas and petroleum during operation under both the Phase 1 and full project buildout under Phase 2. In addition, the proposed project would support the City's goals, including the City's CCAP 2030, because the residential development would be 100 percent electric, and the commercial developments would also preclude the use of natural gas, except in commercial kitchens. The proposed project would also be consistent with the strategies of the City's CCAP 2030 by including solar power that is generated on site, EV charging stations, bicycle amenities, site connectivity, and a connection to the SMART Marin Civic Center station. Additionally, the proposed project would meet or exceed CALGreen Code Tier 2 Voluntary Standards for EV charging. As such, the proposed project would meet and exceed the applicable requirements for energy efficiency.

Furthermore, the City joined MCE, a Community Choice Aggregate that residents can opt into in order to ensure that electricity usage would come from renewable resources (e.g., water, wind, and solar). Customers have three electricity options to choose from: MCE Light Green, which is 61 percent renewable energy; MCE Deep Green, which is 100 percent renewable energy (50 percent from wind and 50 percent from solar); and MCE Local Sol, which is 100 percent renewable energy (100 percent from solar). Understanding the diverse needs of the community, projects can change the service by selecting one of MCE's options. Under each option, the proposed project would include renewable energy as part of the power content mix and would be consistent with the City's renewable energy commitment.

Because the proposed project would comply with and exceed the existing energy standards and regulations, the proposed project would result in a **less than significant** impact associated with the potential to conflict with energy standards and regulations.

4.15.2.3 Cumulative Impacts

The proposed project would have a significant effect on the environment if it, in combination with other projects, would contribute to a significant cumulative impact related to energy.

Development of cumulative projects within the PG&E service area, which encompasses 70,000 square miles, would result in a substantial increase in electricity and natural gas demand as well as an increase in the consumption of fuel for vehicles. Although the proposed project would result in a net increase in demand for electricity, implementation of the proposed project would not result in the construction of new electric or natural gas infrastructure beyond what has already been assumed and will be included in PG&E's regional forecasts.

Cumulative projects that could exacerbate the proposed project's impacts include any projects that could result in wasteful, inefficient, or unnecessary use of energy. However, cumulative projects would be required by the City's Department of Building Inspection to conform to current federal, State, and local energy conservation standards, including the California Energy Code Building Energy Efficiency Standards (CCR Title 24, Part 6), the CALGreen Code (CCR Title 24, Part 11), and SB 743. As a result, the proposed project, in combination with other reasonably foreseeable projects, would not cause a wasteful use of energy or other non-renewable natural resources. In addition, the proposed project would not conflict with State or local plans for renewable energy or energy efficiency. Therefore, the energy demand and use associated with the proposed project and cumulative projects would not substantially contribute to a cumulative impact on existing or

proposed energy supplies or resources, and cumulative impacts on energy resources would be **less than significant**.