Section 3.5
Energy

This section describes the environmental and regulatory setting for energy. It also describes impacts associated with energy that would result from implementation of the proposed San Rafael Transit Center Replacement Project (proposed project) and other build alternatives and mitigation for significant impacts, where feasible and appropriate. Impacts related to the No-Project Alternative are discussed in Chapter 5, Alternatives to the Project.

3.5.1 Existing Conditions

3.5.1.1 Regulatory Setting

Federal

As discussed in Sections 3.2, Air Quality, and 3.7, Greenhouse Gas Emissions, of this ~~Draft~~ Final Environmental Impact Report (EIR), the National Highway Traffic Safety Administration sets the Corporate Average Fuel Economy standards to improve average fuel economy (i.e., reduce fuel consumption) and reduce greenhouse gas (GHG) emissions generated by cars and light-duty trucks. The National Highway Traffic Safety Administration and the U.S. Environmental Protection Agency have proposed amendments to the current fuel efficiency standards for passenger cars and light-duty trucks and new standards for model years 2021 through 2026. Under the Safer Affordable Fuel-Efficient Vehicles Rule, current 2020 standards would be maintained through 2026. California, 22 other states, the District of Columbia, and two cities filed suit against the proposed action on September 20, 2019 (*California et al. v. United States Department of Transportation et al.,* 1:19-cv-02826, U.S. District Court for the District of Columbia). The lawsuit requests a "permanent injunction prohibiting defendants from implementing or relying on the preemption regulation" but does not stay its implementation during legal deliberations. Part 1 of the Safer Affordable Fuel-Efficient Vehicles Rule went into effect on November 26, 2019. Part 2 of the rule was finalized on March 30, 2020. The rule will decrease the stringency of the Corporate Average Fuel Economy standards 1.5 percent each year through model year 2026; the standards issued in 2012 would have required annual fuel efficiency increases of about 5 percent. California, 22 other states, and the District of Columbia filed a petition for review of the final rule on May 27, 2020.

State

California has adopted statewide legislation to address various aspects of climate change and GHGs, which often pertain directly or indirectly to energy resources and uses. This section is focused on state legislation that specifically mentions energy use or resources. For other state legislation mainly focused on GHG reduction and climate change, refer to Section 3.7, Greenhouse Gas Emissions, of this ~~Draft~~ Final EIR.

Assembly Bill 1493, Pavley Rules (2002, Amendments 2009)/Advanced Clean Cars (2011)

Known as Pavley I, Assembly Bill (AB) 1493 provided the nation's first GHG standards for automobiles. AB 1493 required the California Air Resources Board to adopt vehicle standards to lower GHG emissions from automobiles and light-duty trucks to the maximum extent feasible beginning in 2009. In 2012, strengthening of the Pavley standards (referred to previously as Pavley II but now referred to as the Advanced Clean Cars measures) was adopted for vehicle model years 2017 through 2025. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon in 2025. The increase in fuel economy will help lower the demand for fossil fuels.

California Energy Efficiency Standards for Residential and Nonresidential Buildings—California Green Building Standards Code (2011), Title 24 Updates

The California Green Building Standards Code (Part 11, Title 24), or CALGreen, was adopted as part of the California Building Standards Code (24 California Code of Regulations). CALGreen applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires energy- and water-efficient indoor infrastructure to be installed at all new projects beginning January 1, 2011. CALGreen also requires newly constructed building to develop a waste management plan and divert at least 50 percent of the construction materials generated during project construction.

The current 2019 Building Energy Efficiency Standards were adopted in 2019 and took effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy than homes constructed under the 2016 standards, while nonresidential buildings will use about 30 percent less energy. Later standards are expected to require zero net energy for new commercial buildings.

Executive Order B-16-12 (2012)

Executive Order (EO) B-16-12 orders state entities under the direction of the governor, including the California Air Resources Board, California Energy Commission, and California Public Utilities Commission (CPUC), to support rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Senate Bill 350, Chapter 547, Clean Energy and Pollution Reduction Act of 2015

Senate Bill (SB) 350 (DeLeon), also known as the Clean Energy and Pollution Reduction Act of 2015, was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions require the following by 2030: (1) a Renewables Portfolio Standard (RPS)[1] of 50 percent and (2) doubling of the statewide energy efficiency savings related to natural gas and electricity end uses (CEC 2020). In order to meet these provisions, the bill requires large utilities to develop and submit integrated resource plans that detail how the utilities will reduce GHG emissions and increase the use of clean energy resources while meeting customers' needs.

[1] The RPS is one of California's key programs for promoting renewable energy use within the state. The program sets forth continuous procurement of renewable energy for load-serving entities within California (CEC 2020).

Senate Bill 100—The 100 Percent Clean Energy Act of 2018 (2018)

SB 100 builds on SB 350, the Clean Energy and Pollution Reduction Act of 2015. SB 100 increases the 2030 RPS target set in SB 350 to 60 percent and requires an RPS of 100 percent by 2045.

Local

Pacific Gas and Electric Integrated Resource Plan

Pacific Gas and Electric Company (PG&E) adopted the 2018 Integrated Resource Plan (IRP) on August 1, 2018, to provide guidance for serving the electricity and natural gas needs of residents and businesses within its service area while fulfilling regulatory requirements (PG&E 2018). The IRP contains the following objectives that are relevant to the proposed project:

- **Clean Energy**: In 2017, PG&E delivered nearly 80 percent of its electricity from GHG-free resources and 33 percent of its electricity from RPS-eligible renewable resources, such as solar, wind, geothermal, biomass, and small hydro.
- **Reliability**: PG&E's IRP analysis includes PG&E's contribution to system and local reliability, in compliance with CPUC's resource adequacy requirements.
- **Affordability**: PG&E's IRP analysis selects resources to meet the state's clean energy and reliability goals and provides a system average rate forecast in compliance with CPUC's requirements for investor-owned utilities.

Marin Clean Energy Integrated Resource Plan

Marin Clean Energy (MCE) adopted the 2020 IRP on October 3, 2019, to provide near-term, mid-term, and long-term guidance for serving the electricity and natural gas needs of its customers within its service area while fulfilling regulatory requirements (MCE 2019). The IRP contains the following planning policies that are relevant to the proposed project:

- Reduce GHG emissions and other pollutants associated with the electric power sector through increased use of renewable, GHG-free, and low-GHG energy sources.
- Maintain competitive electric rates and increase control over energy costs through management of a diversified resource portfolio.
- Benefit the local economy by offering competitive electricity rates and customer programs and investing in infrastructure, energy, and workforce development programs within MCE's service area.
- Help customers reduce energy consumption and electric bills by supporting and administering enhanced customer energy efficiency, cost-effective distributed generation, and other demand-side programs.
- Enhance system reliability through investments in supply- and demand-side resources.

~~City of San Rafael General Plan 2020~~

~~*The City of San Rafael General Plan 2020* (City of San Rafael 2016) provides a vision for long-range physical and economic development of the City of San Rafael (City), provides strategies and specific implementing actions, and establishes a basis for judging whether specific development proposals~~

~~and public projects are consistent with the City's plans and policy standards. *The City of San Rafael General Plan 2020* contains a Circulation Element and a Sustainability Element, which include policies related to energy resources. The following policies are applicable to energy:~~

~~**Circulation Element**~~

~~**C-10. Alternative Transportation Mode Projects.** Encourage and support projects, such as the Highway 101 High Occupancy Vehicle Gap Closure Project, that benefit alternatives to the single occupant automobile.~~

~~**C-11. Alternative Transportation Mode Users.** Encourage and promote individuals to use alternative modes of transportation, such as regional and local transit, carpooling, bicycling, walking and use of low-impact alternative vehicles. Support development of programs that provide incentives for individuals to choose alternative modes.~~

~~**Goal 25.** It is the goal of San Rafael to have a sustainable community; one that balances the needs of the environment, economy, and a diverse society.~~

~~**Sustainability Element**~~

~~**SU-3. Alternative Fuel and Fuel Efficient Vehicles.** Promote the use of alternative fuel and fuel efficient vehicles.~~

~~**SU-4. Renewable Energy.** Increase the supply of renewable energy sources. Promote and encourage residences to be resource, energy and water efficient by creating incentives and removing obstacles to promote their use.~~

~~**SU-5. Reduce Use of Non-Renewable Resources.** Reduce dependency on non-renewable resources.~~

~~**SU-6. Resource Efficiency in Site Development.** Encourage site planning and development practices that reduce energy demand, support transportation alternatives and incorporate resource- and energy-efficient infrastructure.~~

~~**Goal 26.** It is the goal of San Rafael to have municipal operations that are highly resource efficient and anticipate the effects of climate change.~~

~~Draft~~ San Rafael General Plan 2040

The City ~~is in the process of updating the *City of San Rafael General Plan 2020* with~~ adopted ~~the~~ *San Rafael General Plan 2040* in August 2021. The following goals and policies are included in the Conservation and Climate Change and Mobility Elements of ~~the~~ *San Rafael General Plan 2040* (City of San Rafael 2021).

Goal C-4: Sustainable Energy Management. Use energy in a way that protects the environment, addresses climate change, and conserves natural resources.

- **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 non-renewable resources.
- **Policy C-4.5: Resource Efficiency in Site Development.** Encourage site planning and development practices that reduce energy demand and incorporate resource- and energy-efficient infrastructure.

Goal M-3: Cleaner Transportation. Coordinate transportation, land use, community design, and economic decisions in a way that reduces greenhouse gas emissions, air and water pollution, noise, and other environmental impacts related to transportation.

- **Policy M-3.5: Alternative Transportation Modes.** Support efforts to create convenient, cost-effective alternatives to single passenger auto travel. Ensure that public health, sanitation, and suer safety is addressed in the design and operation of alternative travel modes.

San Rafael Climate Change Action Plan 2030

The *San Rafael Climate Change Action Plan 2030* (CCAP 2030), adopted in 2019, includes goals, policies, and strategies to reduce the City's GHG emissions, in compliance with AB 32 and SB 375. CCAP 2030 was adopted with the purpose of reducing GHGs community-wide to achieve a reduction target of 40 percent below 1990 emission levels by 2030. The City has identified GHG reduction measures in the transportation, energy, waste, water and wastewater, and land use sectors, coupled with state and exiting local actions, to reduce GHG emissions (City of San Rafael 2019). GHG emissions largely involve energy consumption (i.e., fossil-fuel usage); therefore, a reduction in GHG emissions would also equate to a reduction in energy consumption.

The following GHG reduction measures are applicable to energy:

LCT-C5. Public Transit. Support and promote public transit by taking the following actions:

- Work Marin Transit and Golden Gate Transit to maximize ridership through expansion and/or improvement of transit routes and schedules.
- Work with SMART, TAM, employers and others to provide first and last mile programs to maximize utilization of the train, including shuttle buses.
- Support the development of an attractive and efficient multi-modal transit center and provide safe routes to the transit center that encourage bicycle and pedestrian connections.
- Support a "yellow school bus" program and student use of regular transit to reduce school traffic.
- Encourage transit providers, including school buses, to use renewable diesel as a transition fuel and to purchase electric buses whenever replacing existing buses.

EE-M3. Energy Conservation. Reduce energy consumption through behavioral and operational changes.

- Establish energy efficiency protocols for building custodial and cleaning services and other employees, including efficient use of facilities, such as turning off lights and computers, thermostat use, etc.
- Incorporate energy management software, electricity monitors, or other methods to monitor energy use in municipal buildings.
- Investigate 9/80 work schedule for City facilities where feasible and where facilities can be shut down entirely.

RE-C2. GHG-Free Electricity. Encourage residents and businesses to switch to 100 percent renewable electricity (MCE Deep Green, MCE Local Sol, and PG&E Solar Choice) through engagement campaigns and partner agency incentives and work with MCE Clean Energy to assure that it reaches its goal to provide electricity that is 100 percent GHG-free by 2025.

RE-C3. Building and Appliance Electrification. Promote electrification of building systems and appliances that currently use natural gas, including heating systems, hot water heaters, stoves, and clothes dryers.

3.5.1.2 Environmental Setting

Energy resources in California include natural gas, electricity, water, wind, oil, coal, solar, geothermal, and nuclear resources. Energy production and energy use both result in the depletion of nonrenewable resources, such as oil, natural gas, and coal, and emissions of pollutants.

State Energy Resources and Use

California's diverse portfolio of energy resources produced 2,408.2 trillion British thermal units (BTUs)[2] in 2018 (U.S. Energy Information Administration 2020a). Excluding offshore areas, the state ranked seventh in the nation in crude oil production in 2018 (the most recent year for which data are available), producing the equivalent of 965.3 trillion BTUs (U.S. Energy Information Administration 2020b). Other energy sources in the state include natural gas (228.9 trillion BTUs), nuclear (190.4 trillion BTUs), and biofuel (35.5 trillion BTUs) (U.S. Energy Information Administration 2020a, 2020b).[3] In addition, because of the mild Mediterranean climate and strict conservation requirements for energy efficiency, California has lower energy consumption rates than most parts of the United States. According to the U.S. Energy Information Administration, California consumed approximately 7,966.6 trillion BTUs of energy in 2018 (U.S. Energy Information Administration 2020c). California's per-capita energy consumption of 201.9 million BTUs is one of the lowest in the country and ranked 48th in the nation as of 2018 (U.S. Energy Information Administration 2020d).

In 2018, natural gas accounted for the majority of energy consumption (2,207.4 trillion BTUs, or 28 percent), followed by gasoline (1,716.3 trillion BTUs or 21 percent); renewable energy, including nuclear electric power, hydroelectric power, biomass, and other renewables (1,344.9 trillion BTUs, or 17 percent); distillates and jet fuel (1,260.5 trillion BTUs, or 16 percent); and interstate electricity (865.7 trillion BTUs, or 11 percent), with the remaining 7 percent coming from a variety of other sources (U.S. Energy Information Administration 2020e). Of the natural gas consumed, commercial uses consumed approximately 12 percent, followed by residential uses (20 percent) and industrial uses (36 percent), among many other uses (U.S. Energy Information Administration 2020f).

The transportation sector consumed the greatest quantity of energy (3,170.0 trillion BTUs, or 40 percent), followed by the industrial (1,848.2 trillion BTUs, or 23 percent), commercial (1,509.2 trillion BTUs, or 19 percent), and residential (1,439.2 trillion BTUs, or 18 percent) sectors (U.S. Energy Information Administration 2020c).

Per-capita energy consumption, in general, is declining because of improvements in energy efficiency and designs. However, despite this reduction in per-capita energy use, the state's total overall energy consumption (i.e., non-per-capita energy consumption) is expected to grow over the next several decades as a result of increases in population, jobs, and vehicle miles traveled (VMT).

Regional Energy Resources and Use

PG&E provides natural gas and electricity services to the vast majority of Northern California, including the City of San Rafael and the project area. PG&E's service extends north to south from

[2] One BTU is the amount of energy required to heat 1 pound of water by 1 degree Fahrenheit at sea level. BTU is a standard unit of energy that is used in the United States and is on the English system of units (foot-pound-second system).

[3] No coal production occurs in California.

Eureka to Bakersfield and east to west from the Sierra Nevada to the Pacific Ocean. PG&E purchases gas and power from a variety of sources, including other utility companies. PG&E also obtains energy supplies from power plants and natural gas fields in Northern California. PG&E operates a grid distribution system that channels all power produced at the various generation sources into one large energy pool for distribution throughout the service territory. PG&E provides all of the natural gas and electric infrastructure in south San Francisco. PG&E has two plan options, known as Solar Choice options, in addition to its base plan, which gives customers the option to purchase energy from solar resources. The first Solar Choice option provides up to 50 percent of a customer's energy from solar resources, while the other option provides up to 100 percent of customer's energy from solar resources.

MCE is Marin County's official electricity provider. MCE's power comes from a mix of various sources, including solar, wind, geothermal, biomass and biowaste, and hydroelectric generation resources. MCE delivers power to its customers via existing PG&E utility infrastructure.[4] MCE allows customers to choose between three different electricity product operations: Light Green (60 percent renewable resources as electricity sources), Deep Green (100 percent renewable resources from solar and wind power as renewable electricity sources) and Local Sol (100 percent renewable resources from solar power as electricity sources) (MCE 2020).

In Marin County, a total of 68.6 million therms of natural gas were consumed in 2018 (the most recent year for which data are available). In 2018, natural gas in Marin County was consumed primarily by the residential sector (72 percent), followed by the non-residential sector (28 percent) (CEC n.d.). In 2018, Marin County consumed a total of 1,329.2 million kilowatts of electricity. In Marin County, electricity was consumed primarily by the non-residential sector (51 percent), followed by the residential sector (49 percent) (CEC n.d.). Electricity usage for different land uses varies substantially by the type of uses in a building, the types of construction materials used, and the efficiency of the electricity-consuming devices. However, energy consumption in the City of San Rafael has generally decreased over recent years despite a growing population, as shown in the 2013–2018 data in Table 3.5-2 (the most recent years for which data are available) (Marin Climate and Energy Partnership 2020).

Table 3.5-1 outlines PG&E's and MCE's power mix in 2018, compared to the power mix for the state, and Table 3.5-2 outlines the City of San Rafael's per-capita and household energy consumption, including electricity and natural gas consumption, from 2013 to 2018.

[4] MCE charges each of its customers an electric delivery charge for maintenance of PG&E's wires and infrastructure, and delivery of electricity to customers.

Table 3.5-1. PG&E, MCE, and the State of California Power Mix in 2018

	PG&E Options			MCE Options			California Power Mix 2018
Energy Resources	Base Plan	50% Solar Choice	100% Solar Choice	Light Green	Deep Green	Local Sol	
Eligible Renewable:	39%	69%	100%	61%	100%	100%	31%
Biomass and Waste	4%	2%	0%	4%	0%	0%	2%
Geothermal	4%	2%	0%	3%	0%	0%	5%
Small Hydroelectric	3%	1%	0%	2%	0%	0%	2%
Solar	18%	59%	100%	11%	50%	100%	11%
Wind	10%	5%	0%	39%	50%	0%	11%
Coal	0%	0%	0%	0%	0%	0%	3%
Large Hydroelectric	13%	6%	0%	13%	0%	0%	11%
Natural Gas	15%	7%	0%	0%	0%	0%	35%
Nuclear	34%	17%	0%	0%	0%	0%	9%
Other	0%	0%	0%	13%	0%	0%	< 1%
Unspecified[a]	0%	0%	0%	13%	0%	0%	11%
Total	100%	100%	100%	100%	100%	100%	100%

Sources: PG&E 2019; MCE 2019

[a] Electricity from transactions that are not traceable to specific generation sources are classified as unspecified sources of power.

Table 3.5-2. Electricity and Natural Gas Consumption in the City of San Rafael, 2013–2018

Year	Household Energy Consumption (MBTU)	Per-Capita Energy Consumption (MBTU)	Total (MBTU)
2013	48	66	114
2014	43	57	100
2015	43	58	101
2016	44	59	103
2017	45	61	106
2018	44	60	104

Source: Marin Climate and Energy Partnership 2020
MBTU = million British thermal units

Project Site Energy Resources and Use

The existing transit center is in Downtown San Rafael between 2nd Street, 3rd Street, Tamalpais Avenue, and Hetherton Street. The building is approximately 2,300 square feet. As explained in Chapter 2, Project Description, four build alternatives are being considered for this proposed project: Move Whistlestop Alternative, Adapt Whistlestop Alternative, 4th Street Gateway Alternative, and Under the Freeway Alternative. All of the build alternatives are within Downtown San Rafael and within 500 feet of the existing transit center. As stated previously, PG&E and MCE provide natural gas and electricity to the City, and therefore the existing transit center and four proposed project sites, through right-of-way electric and natural gas lines. The transit center and four proposed alternatives are served by existing natural gas and electric infrastructure provided by PG&E.

3.5.2 Environmental Impacts

Impacts were analyzed for the project area rather than specific build alternatives because the location of each build alternative would experience a nearly equivalent impact for each resource considered here. Impacts for the build alternatives are presented together unless they differ substantially among alternatives.

3.5.2.1 Methodology

As the proposed transit center would be in the City of San Rafael, the study area for the impact analysis is the City of San Rafael. Energy impacts associated with construction and operation of the proposed project were assessed and quantified where applicable using standard and accepted software tools and techniques. A summary of the methodology for calculating the proposed project's energy use is provided below.

Appendix F of the California Environmental Quality Act (CEQA) Guidelines provides guidance on determining whether a project would result in the wasteful, inefficient, or unnecessary consumption of energy resources. As stated in Appendix F of the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy. The means for achieving this goal include:

- Decreasing overall per capita energy consumption

- Decreasing reliance on fossil fuels such as coal, natural gas, and oil
- Increasing reliance on renewable energy sources

Based on Appendix F, environmental considerations in the assessment of energy consumption impacts may include the following:

- The project's energy requirements and its energy efficiency 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.
- The effects of the project on local and regional energy supplies and 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 forecast transportation energy use requirements and its overall use of efficient transportation alternatives

Project Construction

Construction of the proposed project under all build alternatives would require energy usage, such as electricity for mobile offices and fuel for off-road equipment, haul trucks, vendor trips, and workers' trips. The construction schedule, equipment operating details, trip numbers and lengths, and material quantities were provided by the project sponsor, in addition to information regarding total electricity usage during project construction. Fuel usage was quantified using the construction emissions profile generated by the California Emissions Estimator Model (CalEEMod), version 2016.3.2. The number of metric tons of carbon dioxide equivalent associated with each construction activity (e.g., off-road equipment usage, worker trips) was converted to gallons of diesel or gasoline and summed accordingly, assuming all off-road activities, hauling, and vendor activities would be carried out with use of diesel equipment and vehicles and that all workers would use gasoline vehicles while traveling to and from the project area. For ease of comparison across all energy consumption amounts, gallons of diesel and gasoline were converted to BTUs, assuming an energy intensity of 124,000 BTUs per gallon of gasoline and 139,000 BTU per gallon of diesel (Environment and Ecology 2020), and megawatt-hours (MWh) of energy converted assuming an energy intensity of 3,412,141 BTU per MWh of electricity (Convert Units 2021). The CalEEMod output files and fuel-use calculations are provided in Appendix ~~B~~D of this ~~Draft~~ Final EIR.

Project Operation

Energy consumption associated with the project area includes the combustion of natural gas and electricity usage, including the electricity used to convey water to the project site. Anticipated water consumption for the new transit center was provided by the project sponsor. A detailed discussion of existing and proposed water consumption is provided in Section 3.17, Utilities, of this ~~draft~~ Final EIR. Annual energy consumption at the transit center under the four build alternatives was estimated using CalEEMod under future (2025) conditions. Energy associated with water conveyance was estimated using CalEEMod and added to the energy usage of the respective

components. The 2025 modeling reflects implementation of state measures to reduce energy use and resulting GHG emissions (e.g., SB 100, Pavley). Quantifiable features, consistent with the proposed project, were incorporated into CalEEMod. The CalEEMod output files are provided in Appendix ~~B~~D of this ~~Draft~~ Final EIR. Additional electrical requirements and infrastructure may be needed for onsite charging of future battery electric buses at the transit center bus bays. However, because the preferred technology for fleetwide rollout of zero-emission buses has not yet been determined, these utility needs would be incorporated in a future project. Fleetwide rollout of zero-emission buses, along with related infrastructure to support the zero-emission fleet, is a separate planning initiative that is outside the scope of the proposed project. The Golden Gate Bridge, Highway and Transportation District would implement the fleetwide rollout in a manner that is consistent with CEQA and any additional energy and utility needs for the fleetwide rollout would be addressed as part of that initiative.

For ease of comparison across all energy consumption amounts, MWh of energy was converted assuming an energy intensity of 3,412,141 BTU per MWh of electricity (Convert Units 2021).

Based on information in Section 3.14, Transportation, all build alternatives primarily represent a shifting of bus activity from location to another; the proposed project would not change the amount of bus service to be provided and new vehicle trips are not assumed to be generated by the proposed project. Although the proposed project would improve the efficiency of bus operations and create operational flexibility for bus movements into and out of the transit center, no future expansion of transit service was planned at the time of this EIR's preparation and therefore cannot be reasonably forecasted. Therefore, additional attendant energy consumption in the form of gasoline or diesel fuel is not anticipated. Therefore, mobile energy consumption was not evaluated for project operations. The operations modeling files are provided in Appendix ~~B~~D of this ~~Draft~~ Final EIR.

3.5.2.2 Thresholds of Significance

The following State CEQA Guidelines Appendix G thresholds identify significance criteria to be considered for determining whether a project could have significant impacts related to energy.

Would the proposed project:

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

3.5.2.3 Impacts

Impact EN-1: Result in Potentially Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources, During Project Construction Or Operation

Construction

Move Whistlestop Alternative

Construction activities for the proposed project would include mobilization, demolition, tree removal, utility work, civil and vertical structures work, and vertical structures finishing and inspection. Construction-related energy usage would include the electricity needed to power electric construction equipment or deliver water to the construction site, the gasoline and diesel fuel used for transporting workers and materials to and from the construction site, and the fuel used for the operation of off-road equipment. Construction-related energy usage and consumption would vary throughout the course of project buildout and depend on the level of activity, length of the construction period, specific construction operations, types of equipment, and number of personnel, which would amount to a **potentially significant** energy impact. The estimated construction-related energy consumption for the proposed project is provided in Table 3.5-3. As shown, project construction would consume approximately 8,600 million BTUs over the approximately 18-month construction period under the Move Whistlestop Alternative.

Updated Table 3.5-3. Estimated Construction Energy Consumption from the Proposed Project (Million BTUs)

Build Alternative	Electricity	Gasoline	Diesel	Total
Move Whistlestop	300	575	7,725	8,600
Adapt Whistlestop	300	575	7,620	8,495
4th Street Gateway	300	575	7,651	8,526
Under the Freeway	300	575	7,730	8,605

Source: See Appendix ~~B~~D of this ~~Draft~~ Final EIR for CalEEMod outputs and construction energy calculations.

Mitigation Measure MM-GHG-CNST-1 would be implemented to reduce the amount of fossil fuel consumed during construction activities, such as ensuring that 15 percent of the construction vehicles/equipment fleet utilize alternative fuel (e.g., biodiesel or electricity). It would also reduce the energy intensity associated with new building materials and discarded construction and demolition waste by requiring construction contractors to implement the Bay Area Air Quality Management District's recommended best management practices—specifically, those associated with alternative fuel and recycling. Consequently, project construction would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, and this impact would be ***less than significant with mitigation***.

Adapt Whistlestop Alternative

The Adapt Whistlestop Alternative construction activities would consume slightly less energy than the Move Whistlestop Alternative, as it may require fewer truck hauling trips (i.e., less energy consumed in the form of diesel or gasoline) to remove debris depending on the site characteristics;

however, overall construction impacts would be the same as those of the Move Whistlestop Alternative outlined above. Therefore, the impact would be ***less than significant with mitigation***.

4th Street Gateway Alternative

The 4th Street Gateway Alternative construction activities would consume slightly less energy than the Move Whistlestop Alternative; however, overall construction impacts would be the same as those of the Move Whistlestop Alternative outlined above. Therefore, the impact would *be* ***less than significant with mitigation***.

Under the Freeway Alternative

The Under the Freeway Alternative construction activities would consume slightly more energy than the Move Whistlestop Alternative; however, overall construction impacts would be the same as those of the Move Whistlestop Alternative outlined above. Therefore, the impacts would be ***less than significant with mitigation***.

Operations

All Build Alternatives

Operation of the proposed project would result in the consumption of electricity and natural gas (e.g., for heating, and cooling) for the proposed 3,000-square-foot transit center building, which would include customer service uses, public restrooms, driver relief facilities, and small retail uses, as well as maintenance and security space. Operational energy consumption was evaluated under buildout-year (2025) conditions. The analysis considers implementation of quantifiable measures to reduce energy usage (e.g., SB 100) as well as the benefits achieved through quantifiable sustainability measures, including the use of green consumer products, which are incorporated into the project design.

As previously discussed, all build alternatives primarily represent a shifting of bus activity from location to another; the proposed project would not change the amount of bus service to be provided and new vehicle trips are not assumed to be generated by the proposed project. Although the proposed project would improve the efficiency of bus operations and create operational flexibility for bus movements into and out of the transit center, no future expansion of transit service was planned at the time of this EIR's preparation and therefore cannot be reasonably forecasted. Therefore, additional attendant energy consumption in the form of gasoline or diesel fuel is not anticipated. Consequently, mobile-energy consumption was not evaluated for project operations.

Buildout of the proposed project would result in operational energy consumption of approximately 121 million BTUs, or the consumption of 106 BTUs of electricity and 14 BTUs of gas.

The proposed project would qualify for the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold certification at a minimum. Attaining LEED Gold certification would ensure that the building would be energy efficient and would incorporate features such as low-flow fixtures or water-efficient landscaping into the design of the building to reduce energy consumption. The proposed project would also include the installation of solar panels on site, which would offset some of the facility's energy consumption. The proposed project would also meet San Rafael Municipal Code and CALGreen building requirements. In addition, the proposed project would comply with all applicable City and state water conservation (indoor and outdoor)

measures, including Title 24, Part 6, of the California Energy Code, which would reduce water consumption. Furthermore, as stated previously, operation of the proposed project would not increase energy consumption in the form of mobile diesel and gasoline usage, and would support the shift from automobiles to public transit. Specifically, because the proposed project is a transportation project (specifically a transit-supportive project), by nature it would encourage the use of public transit to reduce single-occupancy vehicle trips and associated mobile energy consumption.

Based on the above analysis, operation of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, and this impact would be ***less than significant***. No mitigation is required.

Mitigation Measures

Under any build alternative that is selected and constructed, the project proponent would ~~I~~implement MM-GHG-CNST-1, as described in Section 3.7, Greenhouse Gas Emissions.

Impact EN-2: Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

All Build Alternatives

State and local renewable energy and energy efficiency plans applicable to the proposed project are discussed above under Section 3.5.1.1, Regulatory Setting. State plans include the AB 1493 Pavley Rules, California Title 24 energy efficiency standards, EO B-16-12, SB 350, and SB 100. Each of these contain required standards related to energy efficiency and renewable energy development. Local plans that address energy efficiency and are designed to achieve the state's RPS mandates include PG&E's 2018 IRP, MCE's 2020 IRP, and the City's CCAP 2030. ~~The *City of* San Rafael General Plan 2020~~ *2040* also includes goals and policies related to energy use and energy reductions.

As discussed above, the proposed project would incorporate sustainability and transportation features. Furthermore, the proposed project would qualify for LEED Gold certification at a minimum.

The proposed project would be required to comply with state and local renewable energy and energy-efficiency plans. As a result, it would benefit from renewable energy development and increases in energy efficiency. Energy usage from increases in VMT and the number of average daily trips in the area is expected to become more efficient under regulations included in Pavley and EO B-16-12, which address average fuel economy and commercialization of zero-emission vehicles, respectively. Building energy efficiency is also expected to increase as a result of compliance with Title 24 building codes, which are expected to move toward zero net energy for new construction and 100 percent renewable energy under SB 350 and SB 100 regulations. With implementation of the proposed project, PG&E and MCE would continue to pursue the procurement of renewable energy sources to meet their RPS goals and comply with state regulations. Therefore, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and the impact would be ***less than significant***. No mitigation is required.

Mitigation Measures

No mitigation is required.