8.0 Energy

This section identifies the major forms of the anticipated project energy demand and evaluates whether or not that demand would be considered a wasteful, inefficient, or unnecessary consumption of energy resources. Environmental and regulatory setting information regarding energy resources is presented as is information on features of the proposed project that would affect energy resources. The primary sources of information include State legislation for renewable energy, the Building Energy Efficiency Standards for Residential and Nonresidential Buildings, and the Green Building Standards Code.

Responses to the Notice of Preparation

There were not comments on the NOP regarding the energy scope of analysis.

8.1 Environmental Setting

Energy Use and Conservation

For more than two decades, federal, state, and regional energy agencies and energy providers have been focused on reducing growth in fossil fuel-based energy demand, especially in the form of transportation fuels and electricity. Key related environmental goals have been to reduce air pollutants and GHGs. Public and private investments in a range of transportation technology, energy efficiency and energy conservation programs and technologies to improve transportation fuel efficiency have been increasing, as has the focus on land use planning as a tool to reduce vehicle trips/lengths and transportation-related energy use.

Population growth is a key driver for increasing energy demand and Humboldt County's population and energy demand will continue to grow. To minimize the need for additional electricity generation facilities and to reduce environmental impacts associated with energy generation, distribution and consumption, both the state and regional energy purveyors have focused investments on energy conservation and efficiency. Energy purveyors have also focused on obtaining larger shares of retail power from renewable sources.

Energy Provider and Baseline Energy Demand

PG&E, one of the five largest utilities in the state, is the primary purveyor of electricity and natural gas in the County of Humboldt. PG&E operates a major network of electricity and natural gas transmission lines within its service area, including Humboldt County. The portions of the Town Center site that are assumed to accommodate new development as described in Section 4.0, Project Description, are essentially vacant. Therefore, baseline energy demand for current land use in these areas is zero.

8.2 Regulatory Setting

Energy efficiency, energy conservation and transportation fuel efficiency (through vehicle trip reduction and improved mileage) goals of the federal and state governments are embodied in many federal, state, and local statutes and policies. Representative state energy efficiency and conservation, and transportation energy demand guidance, regulations, and legislation are summarized below. Additional related regulations and legislation are found in Section 8, Greenhouse Gas Emissions.

State

California Energy Commission

The California Energy Commission is California's primary energy policy and energy planning agency. Created by the California Legislature in 1974, the California Energy Commission has five major responsibilities: 1) forecasting future energy needs and keeping historical energy data; 2) licensing thermal power plants 50 megawatts or larger; 3) promoting energy efficiency through appliance and building standards; 4) developing energy technologies and supporting renewable energy; and 5) planning for and directing state response to energy emergencies. Under the requirements of the California Public Resources Code, the California Energy Commission, in conjunction with the Department of Conservation's Division of Oil, Gas, and Geothermal Resources, is required to assess electricity and natural gas resources on an annual basis or as necessary. The Systems Assessment and Facilities Siting Division ensures that needed energy facilities are authorized in an expeditious, safe, and environmentally acceptable manner.

California 2008 Energy Action Plan Update

The state adopted the Energy Action Plan in 2003, followed by the Energy Action Plan II in 2005. The current plan, the California 2008 Energy Action Plan Update, is California's principal energy planning and policy document. The updated document examines the state's ongoing actions in the context of global climate change, describes a coordinated implementation plan for state energy policies, and identifies specific action areas to ensure that California's energy resources are adequate, affordable, technologically advanced, and environmentally sound. The Energy Action Plan Update establishes energy efficiency and demand response (i.e., reduction of

customer energy usage during peak periods) as the first-priority actions to address increasing energy demands. Additional priorities include using renewable sources of power and distributed generation (e.g., using relatively small power plants near or at centers of high demand). To the extent that these actions are unable to satisfy increasing energy demand and transmission capacity needs, clean and efficient fossil-fired generation is supported. The Energy Action Plan Update examines policy changes in the areas of energy efficiency, demand response, renewable energy, electricity reliability and infrastructure, electricity market structure, natural gas supply and infrastructure, research and development, and climate change (California Energy Commission 2008).

California Building Codes

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were first established in 1978 to reduce California's energy consumption. The California Energy Code is updated every three years by the California Energy Commission as the Building Energy Efficiency Standards (building standards) to allow consideration and possible incorporation of new energy efficiency technologies and construction methods. In August 2022, the California Energy Commission adopted the 2022 building standards that went into effect on January 1, 2023. The 2022 building standards are structured to achieve the state's goal that all new low-rise residential buildings (single-family and multi-family homes) be zero net energy. Single-family homes built with the 2022 building standards will use about seven percent less energy due to energy efficiency measures versus those built under the 2019 building standards. The 2022 standards also require improved energy efficiency in non-residential buildings and require solar energy generation and energy storage systems (California Energy Commission 2022).

The Green Building Standards Code (also known as CALGreen), which requires all new buildings in the state to be more energy efficient and environmentally responsible, took effect in January 2011 and was most recently updated in January 2023. These comprehensive regulations are intended to achieve major reductions in interior and exterior building energy consumption.

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

This bill provides an updates the state's Renewables Portfolio Standard to ensure that by 2030 at least 60 percent of California's electricity is renewable. This also sets a 2045 goal of powering all retail electricity sold in California and state agency electricity needs with renewable and zero-carbon resources, such as solar and wind energy, that do not emit climate-altering greenhouse gases. Additionally, the bill requires the Energy Commission, Public Utilities Commission and Air Resources Board to use programs under existing laws to achieve 100 percent clean electricity and issue a joint policy report on Senate Bill 100 by 2021 and every four years thereafter.

Assembly Bill 2021(Energy Efficiency Act of 2006)

This bill encourages all investor-owned and municipal utilities to aggressively invest in achievable, cost-effective, energy efficiency programs in their service territories.

Assembly Bill 1493 (Pavley I Rule)

AB 1493 (Pavley 1) was enacted on July 22, 2002. It requires the California Air Resources Board (CARB) to develop and adopt regulations that improve fuel efficiency of vehicles and light-duty trucks. Pavley I requirements apply to these vehicles in the model years 2009 to 2016.

Advanced Clean Cars

In January 2012, CARB adopted an Advanced Clean Cars program, which is aimed at increasing the number of plug-in hybrid cars and zero-emission vehicles in the vehicle fleet and on making fuels such as electricity and hydrogen readily available for these vehicle technologies.

Renewable Energy Legislation/Orders

The California Renewables Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20 percent of their retail sales with renewable power by 2017, was established by SB 1078 in 2002. The renewable portfolio standard was accelerated to 20 percent by 2010 by SB 107 in 2006. The program was subsequently expanded by the renewable electricity standard approved by CARB in September 2010, requiring all utilities to meet a 33 percent target by 2020. The Legislature then codified this mandate in 2011 with the enactment of SB X1-2. SB 350, adopted in September 2015, increases the standard to 50 percent by 2030. This same legislation includes statutes directing the California Energy Commission and Public Utilities Commission to regulate utilities producing electricity so that they will create electricity-generation capacity sufficient for the widespread electrification of California's vehicle fleet, as a means of reducing GHG emissions associated with the combustion of gasoline and other fossil fuels. The Legislature envisions a dramatic increase in the sales and use of electric cars, which will be recharged with electricity produced with increasingly cleaner renewable power sources.

On September 10, 2018, former Governor Jerry Brown signed into law SB 100 and Executive Order B-55-18. SB 100 raises California's Renewable Portfolio Standard requirement to 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. Executive Order B-55-18 establishes a carbon neutrality goal for California by 2045, and sets a goal to maintain net negative emissions thereafter.

Regional/Local

Humboldt County General Plan

The Humboldt County General Plan Energy Element contains several policies that directly pertain to energy resources, including the following:

Policy E-P1. Energy Conservation Standards and Incentives. Develop incentives to encourage residential and commercial building plans that exceed California Building Standards Code requirements for energy.

Policy E-P4. Transportation Energy Conservation and Alternative Fuels Substitution. Support revitalization and infill projects within Urban Development Areas as a means to reduce long-term vehicle miles traveled as an energy conservation strategy. Support the development and implementation of Electric Vehicle (EV) charging stations and other alternative fueling infrastructure.

Policy E-P10. Transportation Management Plans. Major commercial, business, or industrial, facility developments shall be required to submit a transportation management plan that addresses energy conservation measures such as connectivity to alternative transportation modes; preferential parking for carpools, vanpools, motorcycles, mopeds, and bicycles; shuttle services; alternative fueling stations; transit passes; bike lockers; and locker-room facilities. Develop incentives for projects not deemed as major that incorporate such energy conservation measures.

Policy E-P11. Energy-efficient Landscape Design. Encourage and incentivize energy efficient landscape design in development projects, subdivisions, and in new and existing streets and parking areas in order to reduce impervious surfaces, minimize heat and glare, control soil erosion, and conserve water.

Policy E-P12. Water Efficiency. Promote the efficient use of water in residences, businesses, industries, and agriculture.

Policy E-P17. Residential Design. Proposed single-family residential structures should be designed to maximize solar access, energy conservation and passive solar energy generation. Solar access potential should be evaluated based on each climate zone within the County as established by the National Weather Forecast Center in Eureka.

Humboldt County Municipal Code

Ordinance 2538, Section 1, of the Humboldt County Municipal Code contains the following requirements for solar energy systems:

> All solar energy systems shall meet applicable health and safety standards and requirements imposed by the State and the County, local fire department or district and utility director, if applicable.

Solar energy systems for heating water in single family residences and for heating water in commercial or swimming pool applications shall be certified by an accredited listing agency as defined by the California Plumbing and Mechanical Code.

Solar energy systems for producing electricity shall meet all applicable safety and performance standards established by the California Electrical Code, the Institute of Electrical and Electronics Engineers and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the Public Utilities Commission regarding safety and reliability.

McKinleyville Town Center Q-Zone Regulations

There are a number of proposed features outlined in Q-Zone regulations, particularly in Section 4 Connectivity, that if implemented, would reduce energy use in the form of transportation fuel demand. The referenced design features include:

- **4.1.3 Bicycle and Pedestrian Connections.** On-street and off-street bicycle trails and pedestrian connections including:
  - **4.1.3.1** East-West Trail linking McKinleyville Avenue on the west with Pierson Park on the east, running though the existing shopping center and crossing Central at Gwin. This will connect the open space on the west with the park on the east;
  - **4.1.3.2** North-South connector linking the Mid-Town trail; and
  - **4.1.3.3** Class I bicycle path along Hiller connecting McKinleyville Ave and Central.
- **4.1.4 Transit Facilities**. There shall be an enhanced transit facility located with convenient access to Central Avenue providing simultaneous loading space for multiple buses, bike lockers, and if grant or other funding is available space for park and ride. This shall be constructed and operational before 50% of the buildable town center area is developed.

8.3 Energy Thresholds of Significance

The CEQA Guidelines' Appendix G Environmental Checklist was assessed to identify the proposed project components that have the potential to cause a significant impact. The following thresholds of significance were used to determine if further evaluation within this EIR was warranted to ascertain whether the proposed project may:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

Issues Not Discussed Further in this Section

The Appendix G questions on the subject of air quality include a question for which no further discussion is needed. The question is as follows:

- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

At this time, there are no regulations at the local level that would mandate that the proposed project must include on-site renewable energy sources. The California Building Standards Code requires that new development be built to the Building Energy Efficiency Standards in effect at the time building permits are issued. For low rise multi-family buildings (buildings up to three stories in height), solar photovoltaic systems must be installed that offset the electricity consumption of the building. Mixed use structures must also comply with the solar standards. The required solar photovoltaic system is intended to offset the annual electrical consumption of a mixed-use building such that it will
self-utilize about 80 percent of the annual solar generation without battery storage, and about 90 percent with battery storage, over a year. By incorporating energy efficiency and renewable energy measures per the Building Energy Efficiency Standards, and incorporating green building features per the CALGreen standards, the project is required to comply with existing state energy standards and would not conflict with or obstruct a state or local plan for energy efficiency. Therefore, no further discussion of this issue is required.

8.4 Analysis, Impacts, and Mitigation Measures

IMPACT 8-1	**Energy Resources Consumption**	**Less than Significant**

Projected Energy Demand

The typical primary sources of energy consumption from land use residential, retail/commercial, and office projects are building energy (electricity and natural gas) and transportation fuel in vehicles traveling a project site. Each of these energy sources and projected project demand for each are described below.

Transportation Fuel

At buildout, the project would generate vehicle trips that will generate demand for transportation fuel. Based on data provided by W-Trans, the project transportation consultant, the project would generate 107,272 VMT daily or 39,154,280 VMT annually. The annual VMT information was used as an input to the Emissions Factor Model to calculate projected fuel demand. The results, included in Appendix C, show annual fuel demand at 1,317,655 gallons per year (combined diesel and gasoline).

Natural Gas and Electricity

The California Emission Estimation Model (CalEEMod) version 2022.1 was utilized to quantify projected operational natural gas and electricity demand from the project. Data inputs to the model take into account the type and size of proposed uses utilizing CalEEMod default land uses based on the size metrics described in Section 4.0, Project Description. The land use type and size metrics used are presented in Table 8-1, Project Characteristics.

Table 8-1 Project Characteristics

Project Component	Land Use Subtype[1]	Proposed
Life Plan Humboldt	Retirement Community	218 Units
Multi-Family Residential	Apartments Mid Rise	2,432 Units
Retail / Commercial	Strip mall	632,800 Square Feet
Office	General Office Building	271,200 Square Feet

SOURCE: CalEEMod version 2022.1, Humboldt County 2024

NOTES:

1. CalEEMod default land use subtype. Descriptions of the model default land use categories and subtypes are found in the User's Guide for CalEEMod Version 2022.1 available online at: https://caleemod.com/user-guide.

Natural Gas

According to the California Energy Commission Energy Consumption Data Management System, in 2022, total natural gas consumption in Humboldt County was 30,420,715 therms. Section 5.11, Operational Energy Consumption, in the project CalEEMod results included in Appendix C shows that projected natural gas demand from future development would be about 41,216,241 kBTU (British Thermal Units) per year or 412,162 therms per year, which is equivalent to approximately 1.4 percent of the countywide demand in 2022. However, this demand would be reduced to zero with the implementation of mitigation measure 9-1 as described in Section 9.0, Greenhouse Gas Emissions. That mitigation prohibits use of natural gas in all future site development.

Electricity

The California Energy Commission Energy Consumption Data Management System reports that in 2022, total electricity consumption in Humboldt County was 774,289,947 kilowatt-hours (kWh). Section 5.11, Operational Energy Consumption, in the CalEEMod results included in Appendix C, shows projected project electricity demand at 19,511,264 kWh per year, or 2.5 percent of the countywide electrical demand. Electricity demand would be significantly reduced with required conformance to regulatory requirements included in the California Energy Code, Building Energy Efficiency Standards, as summarized above. The 2022 standards require that the low-rise residential development of up to three stories have net zero electricity demand,

and non-residential buildings install solar systems that meet 80 to 90 percent of their electricity demand This is achieved through a combination of incorporating energy efficiency, energy reduction features, and renewable energy features. The Building Energy Efficiency Standards also required measures for improved energy efficiency for a variety of non-residential buildings/business types.

Land Use and Project Necessity

The proposed land uses represent common land use development types whose energy demand would not be excessive or unnecessary. Developing the Town Center site with uses as currently proposed has been anticipated by the County for many years as evidenced by policies and land use guidance included in the Community Plan and General Plan. Such development is seen by the County as supporting its land use and economic development strategies and its imperative to provide housing consistent with direction provided by the state. In this context, energy demand from the project is not considered to be unnecessary.

Regulatory Compliance

A multitude of state regulations and legislative acts are aimed at improving vehicle fuel efficiency, energy efficiency, and enhancing energy conservation. For example, the Pavley I standards focus on transportation fuel efficiency. The increased use of electric powered vehicles will reduce fossil fuel consumption. According to the State of California, VMT is expected to decline with the continuing implementation of SB 743, resulting in less vehicle travel and less fuel consumption. In the renewable energy use sector, representative legislation for the use of renewable energy includes, but is not limited to SB 350 and Executive Order B-16-12. In the building energy use sector, representative legislation and standards for reducing natural gas and electricity consumption include, but are not limited to AB 2021, CALGreen, and the California Building Standards Code.

The County enforces the California Building Standards Code and Green Building Standards Code through the development review process. That enforcement is the primary mechanism through which future development will be required to implement state mandated energy efficiency, conservation, and renewable energy generation and storage measures that are within the control of future applicants and the County.

Design characteristics, including transit-oriented development, new bicycle facilities, and expanded bikeway and pedestrian network described in Section 5.0, Air Quality, would result in reduced vehicle miles traveled and the associated fuel demand. Additionally, mitigation measure 9-1 in Section 9.0, Greenhouse Gases, that prohibits use of natural gas and requires installation of EV support infrastructure, would further reduce energy demand.

The County has demonstrated through its land use planning and policy guidance that the proposed project is necessary to meet its land use, housing, and economic development goals.

Temporary construction energy use would entail consumption of diesel fuel and gasoline by construction equipment and by the transportation of earth moving equipment, construction materials, supplies, and construction personnel. State regulations regarding vehicle emission and fuels standards, such as the Low Carbon Fuel Standard and anti-idling regulations, would be implemented.

Given the considerations summarized above, the proposed project would have a less-than-significant impact associated with the consumption of energy resources.

Life Plan Humbolt

The Life Plan Humboldt project would have fewer impacts than assumed for the project as a whole. Its energy demand is a component of the overall project demand described above, and the project use is not considered unnecessary.