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Chapter 5 Significant Unavoidable Environmental Effects/Significant Irreversible Environmental Changes/Energy Conservation

CEQA Guidelines Section 15126.2 (b) and (c) require that the significant unavoidable impacts of the project, as well as any significant irreversible environmental changes that would result from project implementation, be addressed in an EIR.

5.1 Significant Environmental Effects Which Cannot Be Avoided if the Project Is Implemented

In accordance with CEQA Guidelines Section 15126.2 (b) any significant unavoidable impacts of a project, including those impacts that can be mitigated but not reduced to below a level of significance despite the applicant's willingness to implement all feasible mitigation measures, must be identified in the EIR. Implementation of the Housing Element Update (HEU) would result in significant, unavoidable impacts associated with the following issues: aesthetics, air quality, cultural resources, greenhouse gas emissions, land use, and traffic/circulation. Chapter 4 of this EIR provides more detail about the nature and extent of these impacts related to the project.

These impacts would remain significant and unavoidable as a result of the HEU (refer to Chapter 4 of this EIR for further detail). All other significant impacts identified in Chapter 4, Environmental Impact Analysis, of this EIR can be reduced to below a level of significance with implementation of the mitigation framework provided in Chapter 4.0 of this EIR.

5.2 Significant Irreversible Environmental Changes Which Would Result if the Project Is Implemented

CEQA Guidelines Section 15126.2 (c) requires an evaluation of significant irreversible environmental changes. Examples of possible irreversible changes include:

- Primary impacts such as the use of nonrenewable resources during the initial and continued phases of the project
- Secondary impacts (such as highway improvements which provide access to a previously inaccessible area)

5.2.1 Non-renewable Resources

Non-renewable resources generally include biological habitat, agricultural land, cultural and paleontological resources, mineral deposits, water bodies, and some energy sources. Implementation of the project would result in significant irreversible impacts to several of these resources, as described in Section 4.4 and in Chapter 5 below. The HEU would result in less than significant impacts to water bodies (drainage and water quality) as described in Section 4.8 and agricultural and mineral resources as described in Chapter 8.

Actions related to future development would result in an irretrievable commitment of nonrenewable resources, such as energy supplies and construction materials, such as lumber, steel and aggregate. Non-renewable energy resources (coal, natural gas, oil) would be used in construction, heating and refrigeration of food and water, transportation, lighting, and other associated energy needs.

Residential and commercial development anticipated within the housing sites, together with other projects in the City, would require the commitment or destruction of other nonrenewable and slowly renewable resources. These resources include (but are not limited to) lumber and other forested products; sand and gravel; asphalt; petrochemical construction materials; steel, copper, lead, other metals; and water. However, the amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources.

As described previously, the housing sites are currently developed with the exception of a few vacant lots. Development on vacant parcels would result in the long-term commitment to urbanization because reversion of the housing sites back to vacant land would be difficult and highly unlikely. However, the development of mid- to high-density residential units adjacent to mixed-uses under any of the housing strategies would result in a more efficient land use pattern than would likely occur under the City's adopted General Plan.

In summary, future construction and operation associated with implementation of the HEU would result in the irretrievable commitment of limited, slowly renewable, and

nonrenewable resources, which would limit the availability of these particular resource quantities for future generations or for other uses. However, the use of such resources would be consistent with local and regional growth forecasts for the area. As such, although irreversible environmental changes would result from future development, such changes would not be considered significant.

5.2.2 Secondary Impacts

The proposed housing sites are accessible via regional transportation facilities (e.g., Highway 101 and Interstate 5) and are served by existing utilities and other public services. As a result, secondary impacts are not anticipated from environmental changes resulting from the construction of new infrastructure, as is described in Sections 4.12 and 4.14.

5.3 Energy Conservation

<i>Would the project have a significant impact on energy conservation or result in the inefficient, wasteful or unnecessary consumption of energy?</i>
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5.3.1 Impacts

In 1975, the California State Legislature adopted Assembly Bill 1575 (AB 1575) in response to the oil crisis of the 1970s. The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include (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. In order to assure that energy implications are considered in project decisions, Public Resources Code Section 21100(b)(3) and CEQA Guidelines Appendix F requires a description (where relevant) of the potential wasteful, inefficient, and unnecessary consumption of energy impacts caused by a proposed project.

5.3.1.1 Project Energy Consumption

a. Construction

Grading and construction activities consume energy through the operation of heavy off-road equipment, trucks, and worker traffic. At the program-level, it is too speculative to quantify total construction-related energy consumption of future development, either in total or by fuel type. Energy used during future construction of the housing sites is not considered significant given the level of development proposed and short-term nature of the energy consumption. There are no conditions in the project area that would require non-standard equipment or construction practices that would increase fuel-energy consumption above typical rates. Therefore, the HEU would not result in a wasteful and inefficient use of energy resources during the construction of future development, and impacts would be less than significant.

In addition, the City adopted a Construction & Demolition Debris (C&D) Ordinance in 2008. The City adopted this ordinance to help divert waste from landfills and comply with statewide mandates from the California Integrated Waste Management Board (AB 939), and requires any construction, remodel, or renovation projects greater than 10,000 square feet to prepare a Waste Management Plan to reuse or recycle at least 60 percent of construction and demolition debris. C&D materials include, but are not limited to, asphalt, concrete, brick, dirt, rock, lumber, cardboard, metals, and any vegetative or other land clearing/landscaping materials. This ordinance ensures energy conservation in the form of recycling efforts to reduce wasteful, inefficient, and unnecessary consumption of energy associated with solid waste disposal during construction, operation, maintenance and/or removal for future projects.

b. Long-term Operations

Long-term operational energy use associated with the HEU includes fuel consumption of vehicles and electricity and natural gas consumption by residents and commercial operations, energy consumption related to obtaining water. However, the use of these resources would still be used daily as essential energy sources and utilities regardless of implementation of the HEU. As such, although long-term operational energy use would result from future development, such changes would not be considered significant in comparison to the energy use of other cities in the region. The proposed HEU would not result in any unusual characteristics that would result in excessive long-term operational building energy demand.

Future development associated with implementation of the HEU would be subject to compliance with the California Building Code (Title 24) and associated updates, as well as the City's General Plan, which aim to reduce excessive and inefficient energy use. The California Building Code is regularly updated and includes higher energy-efficiency standards in comparison to other states. The following sections discuss the City's General Plan policies that also guide reductions in the City's long-term operational energy use. The HEU does not automatically allow or permit housing projects. Individual development projects in the City would still be subject to evaluation on a case-by-case basis and would be required to comply with applicable Federal, State, and local energy and building regulations. Furthermore, as mitigation for HEU greenhouse gas emissions (GHG) impacts at the program-level, the City would adopt a qualified climate action plan within 20 months after the date the HEU becomes effective (as detailed in Section 4.6.5, mitigation measure GHG-2). GHG reduction measures would consist of project-level implementation measures, as well as city-wide policies, standards, and programs. The project-level and citywide measures will be designed to achieve emissions reductions that would meet or exceed the established GHG reduction targets in line with statewide goals expressed in AB 32 and Executive Order B-30-15. Adoption of a climate action plan would further reduce energy consumption associated with long-term operations of projects consistent with the HEU.

Transportation

Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration (NHTSA) is responsible for establishing vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon (mpg). The fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg since 1996. Compliance with federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. Over time, fuel economy standards have increased and reduced the greenhouse gas emissions footprint of vehicles.

In 2009, the U.S. Environmental Protection Agency (EPA) granted a Clean Air Act waiver of preemption to California, granting the ability to enact higher standards than federal fuel economy standards. This waiver will allow California to implement its own greenhouse gas emission standards for motor vehicles beginning with model year 2009 and extending through 2016. In 2012, the EPA and NHTSA issued a joint Final Rulemaking to extend the National Program of harmonized greenhouse gas and fuel economy standards to model year 2017 through 2025 passenger vehicles. In addition, agencies have adopted the first GHG ~~greenhouse gas~~ regulations for heavy-duty engines and vehicles. The proposed standards are projected to require on an average industry fleet wide basis (passenger cars, light-duty trucks, and medium duty passenger vehicles) of a 54.5 mpg fuel economy standard by 2025.

Transportation and vehicle miles traveled (VMT) are relevant considerations in the analysis of the HEU's energy impacts under CEQA Guidelines Appendix F. An analysis of the VMT relative to each housing strategy is provided in Section 4.9, Land Use. All three housing strategies show a VMT/trip reduction over the adopted General Plan Land Use Plan.

Policy 1.15 and the policies of Goal 3 under the City's Circulation Element promote the use of other modes of transport to reduce the dependence of personal automobiles. Policies 3.1-3.11 encourage improving bicycle, pedestrian, and rail services, as well as cooperation with San Diego County, San Diego Association of Governments (SANDAG), and other local jurisdictions for an integrated multi-modal regional transit system.

As discussed above, the HEU is not anticipated to result in any unusual characteristics that would result in excessive long-term operational fuel consumption. The City's ~~Climate Action Plan~~ and adopted General Plan Circulation Element and updated climate action plan would provide strategies to improve transit service and overall mobility within the City, resulting in a decrease in auto dependency and VMT.

Future development under the HEU would potentially increase density in key areas of the City. As these key areas are already served by existing public transit, local residents may be encouraged to utilize more available and efficient alternative transportation. As stated in the ~~Floating Zone Standards~~ new zone program, the intent of the ~~floating~~ new zones is to "[P]romote infill development and revitalization that is compact and supports pedestrian-

friendly development patterns with safe, effective and multi-modal transportation options.” (~~Floating Zone Standards~~ Refer to new zone standards, Section 30.36.010A.) To implement this standard, new growth and public services would be primarily directed into existing town centers and village centers, and help create transit-oriented development that includes apartments, townhouses, stacked flats, and/or duplexes along with commercial uses. New development would be designed to accommodate pedestrians and include wider sidewalks, outdoor dining, public plazas to encourage activity. (See ~~Floating Zone Standards~~ new zone standards, Section 30.36.030 stating “Connections to adjacent developments should also be provided to support walking and biking. Enhanced connections to transit is also important.”)

This would encourage an increase in public transportation ridership and coincides with modern “smart growth” Transportation Demand Management (TDM) practices as well as statewide and SANDAG transportation planning efforts to decrease single-occupant vehicle (SOV) trips. Housing placed by key amenity centers encourages activities such as walking or biking; therefore, encouraging a shift from SOV trips to non-SOV modes. Thus, future mixed use development proposed by the HEU housing strategies help connect existing neighborhoods to improved town centers and support more efficient transit service and pedestrian opportunities.

Collectively, these initiatives to increase public transit use and improve community walkability along existing urban centers relate to State and regional planning efforts by SANDAG. The availability of public transit for City residents, employees, and visitors would ensure that the HEU would not result in the inefficient, wasteful, or unnecessary consumption of transportation energy. Application of the ~~Floating Zone Standards~~ new zone standards would support placement of new sites at close proximity to transit and to be designed in a manner that encourages multi-modal transportation options. Overall, fuel consumption associated with vehicle trips generated by future development within the City would not be considered inefficient, wasteful, or unnecessary in comparison to other cities in the region.

Electricity and Natural Gas

California Code of Regulations, Title 24, Part 6, is California’s Energy Efficiency Standards for Residential and Non-residential Buildings. Title 24 was established by the California Energy Commission (CEC) in 1978 in response to a legislative mandate to create uniform building codes to reduce California’s energy consumption, and provide energy efficiency standards for residential and non-residential buildings. In 2013, the CEC updated Title 24 standards with more stringent requirements (California Green Building Standards Code [CALGreen Code]). Title 24 is updated through a triennial code adoption cycle. The 2016 Standards, planned to go into effect on January 1, 2017, are expected to substantially reduce the growth in electricity and natural gas use. Additional savings result from the application of the Standards on building alterations, such as those within Section V (Site Lighting) including Subpart E (Windows), F (Roofs), and S (Mechanical Equipment). These savings are cumulative, increasing as years go by. As detailed in Section 4.6, new construction and major renovations must demonstrate their compliance with the current

Energy Code by showing an energy savings of at least 21 percent above the former 2005 Energy Code (see Section 4.6.5).

The HEU does not involve any unusual characteristics that would result in excessive long-term operational demand for electricity or natural gas. Furthermore, the City's General Plan Resource Management Element contains Goal 15 and Policies 15.1-15.3 aimed at energy conservation (Table 5-1).

Table 5-1 General Plan Resource Management Element: Goals and Policies Related to Energy Conservation	
Goal/Policy	Description
City of Encinitas General Plan Resource Management Element (2011)	
Goal 15	The City will make every effort to conserve energy in the City, thus reducing our dependence on fossil fuels.
15.1	The City will encourage the use of alternative energy systems, including passive solar and architectural and mechanical systems, in both commercial and residential development. (Coastal Act/30253)
15.2	The patterns of proposed subdivisions and the orientation and design of structures on lots shall be designed with the objective of maximizing the opportunities for solar energy use and energy conservation.
15.3	Energy conserving construction standards and requirements shall be enforced in the field inspection of new construction.

The HEU would be consistent with various energy efficiency goals and policies within the City's General Plan. ~~Additionally, State and Federal codes and standards also will assist the City's goal of encouraging the reduction of energy and GHG emissions during the design and building phases of future development construction projects (see Table 4.6-110 in Section 4.6, Greenhouse Gas Emissions). Furthermore, future projects would be required to demonstrate consistency with the City's updated climate action plan or prepare a project-specific GHG analysis that identifies project-specific GHG reduction measures. GHG reduction measures that may be applied at the future project-level include, but are not limited to those identified in Table 4.6-10, in Section 4.6.5 of the EIR).~~

The residential sector accounts for 15 percent of emissions and the non-residential sector accounts for 11 percent of emissions based upon the City's 2005 Citywide GHG Emissions Inventory. However, implementation of the Federal and State regulations and programs, Resource Element policies and the mitigation framework set forth in Section 4.6.5 for the HEU serve as proactive energy conservation measures for all proposed future development projects.

The solid waste sector accounts for 3 percent of emissions based upon the City's 2005 Citywide GHG Emissions Inventory. As discussed above, compliance with the goals and policies within the General Plan and C&D Ordinance would ensure that there would not be inefficient, wasteful, or unnecessary consumption of energy associated with implementation of the HEU (see Section 4.6.6).

Future development projects at housing sites would adhere to, and exceed, all Federal, State, and local requirements for energy efficiency, including Title 24 of the California Code of Regulations regarding building energy efficiency standards. In addition, measures in the City's Resource Management Element promote the use of renewable energy sources such as solar photovoltaics. Therefore, the HEU would not result in the inefficient, wasteful, or unnecessary consumption of transportation or building energy.

Federal Strategy Measures

Table 5-2 lists State and Federal strategy measures that are intended to decrease energy consumption and GHG emissions related to transportation and residential and non-residential construction are provided in (see also Table 4.6-110, listing state regulatory programs implemented for the reduction of GHG emissions). While the City does not have a direct role in implementing these strategies, the resulting reductions will contribute significantly to the City's energy conservation profile, as detailed in Section 4.6.5.

Table 5-2 Encinitas Climate Action Plan State and Federal Strategy Measures		
Measure	Objective: State and Federal Codes and Standards	MT CO₂E Reduction
S&F 1	Renewable Portfolio Standard	12,890
S&F 2	Low Carbon Fuel Standard	31,180
S&F 3	Corporate Average Fuel Economy	65,590
S&F 4	Title 24 Residential Buildings	2,330
S&F 5	Title 24 Non-residential Buildings	690
Total Encinitas Reduction		112,680
MT CO ₂ E = metric tons of CO ₂ equivalent		

5.3.1.2 Significance of Impacts

Adherence with the aforementioned State and Federal regulations and the City's General Plan guide reductions in the City's collective long-term operation energy use. Furthermore, the HEU does not grant immediate development rights to new housing projects. All housing and development projects proposed in the City would still be subject to a detailed evaluation on a case-by-case basis and would be required to comply with all local regulations, permit requirements, and building codes. Additionally, as mitigation for the HEU, the City will prepare a qualified climate action plan. All future development within the City will be required to demonstrate compliance with GHG reduction measures as identified in the CAP. Impacts relative to the inefficient, wasteful, or unnecessary consumption of energy would be less than significant.