

## **4.6 Greenhouse Gas Emissions**

This section evaluates potential greenhouse gas (GHG) emissions impacts associated with the Housing Element Update (HEU). This GHG analysis evaluates potential effects associated with cumulative GHG emissions generated by each housing strategy. In accordance with California Environmental Quality Act (CEQA), this analysis evaluates the significance of project impacts in terms of: (1) whether, or not, the project would generate GHG emissions that may have a significant impact on the environment; and (2) whether, or not, the project would conflict with any applicable policy, plan, or regulation intended to reduce GHG emissions. Complete GHG modeling data are contained in Appendix L of this EIR, and include GHG emission data calculated using the California Emissions Estimator Model (CalEEMod), a discussion of Federal and State plans and regulations that would indirectly reduce GHG emissions associated with buildout of the HEU, and an explanation of how these plans and regulations were accounted for in modeling.

### **4.6.1 Existing Conditions**

#### **4.6.1.1 Environmental Setting**

##### **a. Understanding Global Climate Change**

To evaluate the incremental effect of the project on statewide GHG emissions and global climate change, it is important to have a basic understanding of the nature of the global climate change problem. Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation and temperature. The earth's climate is in a state of constant flux with periodic warming and cooling cycles. Extreme periods of cooling are termed "ice ages," which may then be followed by extended periods of warmth. For most of the earth's geologic history, these periods of warming and cooling have been the result of many complicated interacting natural factors that include: volcanic eruptions that spew gases and particles (dust) into the atmosphere; the amount of water, vegetation and ice covering the earth's surface; subtle changes in the earth's orbit; and the amount of energy released by the sun (sun cycles). However, since the beginning of the Industrial Revolution around 1750, the average temperature of the earth has been increasing at a rate that is faster than can be explained by natural climate cycles alone.

With the Industrial Revolution came an increase in the combustion of carbon-based fuels such as wood, coal, oil, natural gas and biomass. Industrial processes have also created emissions of substances not found in nature. This in turn has led to a marked increase in the emissions of gases shown to influence the world's climate. These gases, termed "greenhouse" gases (or GHG), influence the amount of heat trapped in the earth's atmosphere. Because recently

observed increased concentrations of GHGs in the atmosphere are related to increased emissions resulting from human activity, the current cycle of “global warming” is generally believed to be largely due to human activity. Of late, the issue of global warming or global climate change has arguably become the most important and widely debated environmental issue in the United States and the world. The effects of global warming or global climate change may impact ecosystems in a broad variety of ways, including rising surface temperatures, loss of snow pack, sea level rise, more extreme weather events, and more drought years. Even though there has been improvements over the past decade in understanding what is responsible for global climate change, scientific uncertainties remain regarding the response of the Earth’s climate system to combinations of changes, particularly at a regional and local level. Because it is the collective of human actions taking place throughout the world that contributes to climate change, it is quintessentially a global or cumulative issue.

## b. Greenhouse Gases of Primary Concern

There are numerous GHGs, both naturally occurring and manmade. Table 4.6-1 summarizes some of the most common. Each GHG has variable atmospheric lifetime and global warming potential (GWP).

| Table 4.6-1<br>Global Warming Potentials and Atmospheric Lifetimes<br>(years)                                                                                                                                                                |                         |                 |                |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|----------------|-----------------|
| Gas                                                                                                                                                                                                                                          | Atmospheric<br>Lifetime | 100-year<br>GWP | 20-year<br>GWP | 500-year<br>GWP |
| Carbon dioxide (CO <sub>2</sub> )                                                                                                                                                                                                            | 50–200                  | 1               | 1              | 1               |
| Methane (CH <sub>4</sub> ) <sup>1</sup>                                                                                                                                                                                                      | 12                      | 25              | 72             | 7.6             |
| Nitrous oxide (N <sub>2</sub> O)                                                                                                                                                                                                             | 114                     | 298             | 289            | 153             |
| HFC-23                                                                                                                                                                                                                                       | 270                     | 14,800          | 12,000         | 12,200          |
| HFC-32                                                                                                                                                                                                                                       | 4.9                     | 675             | 2,330          | 205             |
| HFC-125                                                                                                                                                                                                                                      | 29                      | 3,500           | 6,350          | 1,100           |
| HFC-134a                                                                                                                                                                                                                                     | 14                      | 1,430           | 3,830          | 435             |
| HFC-143a                                                                                                                                                                                                                                     | 52                      | 4,470           | 5,890          | 1,590           |
| HFC-152a                                                                                                                                                                                                                                     | 1.4                     | 124             | 437            | 38              |
| HFC-227ea                                                                                                                                                                                                                                    | 34.2                    | 3,220           | 5,310          | 1,040           |
| HFC-236fa                                                                                                                                                                                                                                    | 240                     | 9,810           | 8,100          | 7,660           |
| HFC-43-10mee                                                                                                                                                                                                                                 | 15.9                    | 1,640           | 4,140          | 500             |
| CF <sub>4</sub>                                                                                                                                                                                                                              | 50,000                  | 7,390           | 5,210          | 11,200          |
| C <sub>2</sub> F <sub>6</sub>                                                                                                                                                                                                                | 10,000                  | 12,200          | 8,630          | 18,200          |
| C <sub>3</sub> F <sub>8</sub>                                                                                                                                                                                                                | 2,600                   | 8,830           | 6,310          | 12,500          |
| C <sub>4</sub> F <sub>10</sub>                                                                                                                                                                                                               | 2,600                   | 8,860           | 6,330          | 12,500          |
| c-C <sub>4</sub> F <sub>8</sub>                                                                                                                                                                                                              | 3,200                   | 10,300          | 7,310          | 14,700          |
| C <sub>5</sub> F <sub>12</sub>                                                                                                                                                                                                               | 4,100                   | 9,160           | 6,510          | 13,300          |
| C <sub>6</sub> F <sub>14</sub>                                                                                                                                                                                                               | 3,200                   | 9,300           | 6,600          | 13,300          |
| SF <sub>6</sub>                                                                                                                                                                                                                              | 3,200                   | 22,800          | 16,300         | 32,600          |
| SOURCE: Intergovernmental Panel on Climate Change 2007.                                                                                                                                                                                      |                         |                 |                |                 |
| <sup>1</sup> The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO <sub>2</sub> is not included. |                         |                 |                |                 |

The atmospheric lifetime of the gas is the average time a molecule stays stable in the atmosphere. Most GHGs have a long atmospheric lifetime, staying in the atmosphere hundreds or thousands of years. GWP is a measure of the potential for a gas to trap heat and warm the atmosphere. Although GWP is related to its atmospheric lifetime, many other factors including chemical reactivity of the gas also influence GWP. GWP is reported as a unitless factor representing the potential for the gas to affect global climate relative to the potential of CO<sub>2</sub>. Because CO<sub>2</sub> is the reference gas for establishing GWP, by definition its GWP is 1. Although CH<sub>4</sub> has a shorter atmospheric lifetime than CO<sub>2</sub>, it has a 100-year GWP of 25; this means that CH<sub>4</sub> has 25 times more effect on global warming than CO<sub>2</sub> on a molecule-by-molecule basis.

All of the gases in Table 4.6-1 are produced by both biogenic (natural) and anthropogenic (human) sources. These are the GHGs of primary concern in this analysis. CO<sub>2</sub> would be emitted by the future land uses consistent with the HEU due to the combustion of fossil fuels in vehicles (including construction); from electricity generation and natural gas consumption; water use and from solid waste disposal. Smaller amounts of CH<sub>4</sub> and N<sub>2</sub>O also would be emitted from operations of future development.

### **c. State and Regional GHG Inventories**

The California Air Resources Board (CARB) performs statewide GHG inventories. The inventory is divided into nine broad sectors of economic activity: agriculture, commercial, electricity generation, forestry, high GWP emitters, industrial, recycling and waste, residential and transportation. Emissions are quantified in million metric tons of CO<sub>2</sub> equivalent (MMT CO<sub>2</sub>E). Table 4.6-2 shows the estimated statewide GHG emissions for the years 1990, 2008 and 2012.

| <b>Table 4.6-2</b><br><b>California GHG Emissions by Sector in 1990, 2008 and 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                           |                                                                           |                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Sector                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1990<br>Emissions in<br>MMT CO <sub>2</sub> E<br>(% total) <sup>1,2</sup> | 2008<br>Emissions in<br>MMT CO <sub>2</sub> E<br>(% total) <sup>2,3</sup> | 2012<br>Emissions in<br>MMT CO <sub>2</sub> E<br>(% total) <sup>2,3</sup> |
| Sources <sup>4</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                           |                                                                           |                                                                           |
| Agriculture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 23.4 (5%)                                                                 | 37.99 (7%)                                                                | 37.86 (7%)                                                                |
| Commercial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 14.4 (3%)                                                                 | 13.37 (3%)                                                                | 14.20 (3%)                                                                |
| Electricity Generation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 110.6 (26%)                                                               | 120.15 (25%)                                                              | 95.09 (19%)                                                               |
| High GWP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | --                                                                        | 12.87 (2%)                                                                | 18.41 (3%)                                                                |
| Industrial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 103.0 (24%)                                                               | 87.54 (18%)                                                               | 89.16 (21%)                                                               |
| Recycling and Waste                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | --                                                                        | 8.09 (1%)                                                                 | 8.49 (2%)                                                                 |
| Residential                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 29.7 (7%)                                                                 | 29.07 (6%)                                                                | 28.09 (7%)                                                                |
| Transportation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 150.7 (35%)                                                               | 178.02 (37%)                                                              | 167.38 (38%)                                                              |
| Forestry (Net CO <sub>2</sub> flux) <sup>5</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -6.5                                                                      | --                                                                        | --                                                                        |
| Not Specified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1.3                                                                       | --                                                                        | --                                                                        |
| <b>TOTAL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>426.6</b>                                                              | <b>487.10</b>                                                             | <b>458.68</b>                                                             |
| SOURCE: CARB 2007 and 2014a.<br><sup>1</sup> 1990 data was retrieved from the CARB 2007 source.<br><sup>2</sup> Percentages may not total 100 due to rounding.<br><sup>3</sup> 2008 and 2012 data was retrieved from the CARB 2014a source.<br><sup>4</sup> Reported emissions for key sectors. The inventory totals for 2008 and 2012 did not include Forestry or Not Specified sources.<br><sup>5</sup> Forestry includes 6.69 MMT CO <sub>2</sub> E sink from forests sequestration and a 0.19 MMT CO <sub>2</sub> E source from forest and range management. |                                                                           |                                                                           |                                                                           |

As shown in Table 4.6-2, statewide GHG source emissions totaled about 427 MMT CO<sub>2</sub>E in 1990, 487 MMT CO<sub>2</sub>E in 2008 and 459 MMT CO<sub>2</sub>E in 2012. Many factors affect year-to-year changes in GHG emissions, including economic activity, demographic influences, environmental conditions such as drought, and the impact of regulatory efforts to control GHG emissions. While CARB has adopted multiple GHG emission reduction measures, the effect of those reductions will not be seen until around 2015. (Please note that as of this writing, a 2015 statewide emissions inventory has not been prepared.) According to CARB, most of the reductions since 2008 have been driven by economic factors (recession), previous energy-efficiency actions and the renewable portfolio standard (CARB 2014a). Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The forestry sector is unique because it not only includes emissions associated with harvest, fire and land use conversion (sources), but also includes removals of atmospheric CO<sub>2</sub> (sinks) by photosynthesis, which is then bound (sequestered) in plant tissues.

A San Diego regional emissions inventory, prepared by the University of San Diego School of Law, Energy Policy Initiative Center, took into account the unique characteristics of the region. The 2010 emissions inventory for the San Diego region is shown in Table 4.6-3. The sectors included in this inventory are somewhat different from those in the statewide inventory.

| <b>Table 4.6-3<br/>San Diego Region GHG Emissions by Sector in 2010</b> |                       |                      |
|-------------------------------------------------------------------------|-----------------------|----------------------|
| Sector                                                                  | 2010 Emissions        |                      |
|                                                                         | MMT CO <sub>2</sub> E | % total <sup>1</sup> |
| Agriculture/Forestry/Land Use                                           | 0.05                  | 0.2%                 |
| Waste                                                                   | 0.6                   | 1.8%                 |
| Electricity                                                             | 8.3                   | 25.0%                |
| Natural Gas Consumption                                                 | 2.9                   | 8.7%                 |
| Industrial Processes & Products                                         | 1.8                   | 5.4%                 |
| On-Road Transportation                                                  | 14.4                  | 43.4%                |
| Off-Road Equipment & Vehicles                                           | 1.4                   | 4.2%                 |
| Civil Aviation                                                          | 1.9                   | 5.7%                 |
| Rail                                                                    | 0.32                  | 1.0%                 |
| Water-Borne Navigation                                                  | 0.1                   | 0.3%                 |
| Other Fuels/Other                                                       | 1.58                  | 4.8%                 |
| Land Use Wildfires                                                      | 0.28                  | 0.8%                 |
| Development (Loss of Vegetation)                                        | 0.18                  | 0.5%                 |
| Sequestration from Land Cover                                           | (0.66)                | (0.5%)               |
| <b>TOTAL</b>                                                            | <b>33.15</b>          |                      |
| SOURCE: University of San Diego 2013.                                   |                       |                      |
| <sup>1</sup> Percentages may not total 100 due to rounding.             |                       |                      |

Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use.

#### **d. Encinitas GHG Inventories**

In 2009, Encinitas worked with the International Council for Local Environmental Initiatives (ICLEI), now known as the Local Governments for Sustainability, to develop a government operations and community-wide GHG emissions inventory for baseline year 2005. These inventories are meant to establish the City's baseline GHG emissions and comprise the first step in developing and then adopting a climate action plan (CAP) for Encinitas (City of Encinitas 2011). These inventories use the protocol developed by CARB in conjunction with ICLEI, the California Climate Action Registry and the Climate Registry for conducting both a community-wide inventory and government operations inventory. The community-wide GHG emissions inventory is shown in Table 4.6-4, and government operations inventory is shown in Table 4.6-5.

| <b>Table 4.6-4<br/>Encinitas Community-Wide GHG Emissions in 2005</b> |                                                     |             |
|-----------------------------------------------------------------------|-----------------------------------------------------|-------------|
| Sector                                                                | 2005 Emissions<br>in MT CO <sub>2</sub> E (% total) |             |
|                                                                       |                                                     |             |
| Transportation                                                        | 383,566                                             | 70.2%       |
| Residential                                                           | 82,975                                              | 15.2%       |
| Commercial/Industrial                                                 | 59,793                                              | 10.9%       |
| Solid Waste                                                           | 17,333                                              | 3.2%        |
| Wastewater                                                            | 2,901                                               | 0.5%        |
| <b>TOTAL</b>                                                          | <b>546,568</b>                                      | <b>100%</b> |
| SOURCE: City of Encinitas 2011.                                       |                                                     |             |

In 2005, the Encinitas community emitted approximately 546,568 metric tons CO<sub>2</sub> equivalent (MT CO<sub>2</sub>E; or 0.55 MMT CO<sub>2</sub>E). Transportation comprised the largest source of GHG emissions, generating approximately 70.2 percent of the community's total 2005 emissions.

| <b>Table 4.6-5<br/>Encinitas Government Operations GHG Emissions in 2005</b> |                                                           |             |
|------------------------------------------------------------------------------|-----------------------------------------------------------|-------------|
| <b>Sector</b>                                                                | <b>2005 Emissions<br/>in MT CO<sub>2</sub>E (% total)</b> |             |
| Employee Commute                                                             | 887                                                       | 35.8        |
| Public Lighting                                                              | 576                                                       | 23.2        |
| Buildings and Facilities                                                     | 515                                                       | 20.8        |
| Vehicle Fleet                                                                | 384                                                       | 15.5        |
| Government Generated Solid Waste                                             | 99                                                        | 4.0         |
| Water/Sewage Transport                                                       | 18                                                        | 0.7         |
| <b>TOTAL</b>                                                                 | <b>2,479</b>                                              | <b>100%</b> |
| SOURCE: City of Encinitas 2011.                                              |                                                           |             |

Based on the ICLEI government operation inventory, GHG emissions in 2005 from the City's governmental operations totaled 2,479 MT CO<sub>2</sub>E (City of Encinitas 2011). Of the total emissions accounted for in this inventory, transportation-related emissions were also the largest, with the City's vehicle fleet and employee commute accounting for 51.3 percent of total government operations emissions.

## 4.6.2 Regulatory Framework

### 4.6.2.1 Federal

#### a. Environmental Protection Agency

The U.S. EPA has many Federal level programs and projects to reduce GHG emissions. The U.S. EPA provides technical expertise and encourages voluntary reductions from the private sector. One of the voluntary programs applicable to the project is the Energy Star program.

Energy Star is a joint program of U.S. EPA and the U.S. Department of Energy, which promotes energy-efficient products and practices. Tools and initiatives include the Energy Star Portfolio Manager, which helps track and assess energy and water consumption across an entire portfolio of buildings, and the Energy Star Most Efficient 2013, which provides information on exceptional products that represent the leading edge in energy-efficient products in 2013 (U.S. EPA 2013).

The U.S. EPA also partners with the public sector, including states, tribes, localities and resource managers, to encourage smart growth, sustainability preparation and renewable energy and climate change preparation. These initiatives include the Clean Energy–Environment State Partnership Program, the Climate Ready Water Utilities Initiative, the Climate Ready Estuaries Program and the Sustainable Communities Partnership (U.S. EPA 2014).

### **4.6.2.2 State**

The State of California has a number of policies and regulations that are either directly or indirectly related to GHG emissions. Only those most relevant to land use planning and development are included in this discussion.

#### **a. Executive Orders**

##### ***S-3-05—Statewide GHG Emission Targets***

This executive order (EO), essentially the Executive Branch's managerial policy statements, established the following GHG emission reduction targets for the State of California:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels;
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

This EO also directs the Secretary of the California EPA to oversee the efforts made to reach these targets, and to prepare biannual reports on the progress made toward meeting the targets and on the impacts to California related to global warming, including impacts to water supply, public health, agriculture, the coastline and forestry. The report must also include mitigation and adaptation plans to combat the impacts. The first Climate Action Team Assessment Report was produced in March 2006 and has been updated every two years.

##### ***B-30-15—2030 Statewide GHG Emission Goal***

This EO, issued on April 29, 2015, established the Executive Branch's interim GHG emission reduction goal for the State of California of 40 percent below 1990 levels by 2030. This EO also directed all State agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the long-term 2050 goal identified in EO S-3-05. Additionally, this EO directed CARB to update its Climate Change Scoping Plan to address the 2030 goal. Therefore, in the coming months, CARB is expected to develop statewide inventory projection data for 2030, as well as commence its efforts to identify reduction strategies capable of securing emission reductions that allow for achievement of the EO's new interim goal.

#### **b. California Global Warming Solutions Act**

In response to EO S-3-05, the California legislature passed Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006," which was signed by the governor on September 27, 2006. It required the CARB to adopt rules and regulations that would reduce statewide GHG emissions to 1990 levels by 2020. The CARB was also required to publish a list of discrete GHG emission reduction measures.

### **c. Climate Change Scoping Plan**

In 2008, as directed by the California Global Warming Solutions Act of 2006, CARB adopted the *Climate Change Scoping Plan: A Framework for Change (Scoping Plan)*, which identifies the main strategies California will implement to achieve the GHG reductions necessary to reduce forecasted business as usual (BAU) emissions in 2020 to the State's historic 1990 emissions level (CARB 2008).

In 2014, CARB adopted the First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) (CARB 2014b). The stated purpose of the First Update is to “highlight California’s success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050” (CARB 2014b). The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the State realizes the expected benefits of existing policy goals (CARB 2014b).

In conjunction with the First Update, CARB identified “six key focus areas comprising major components of the State’s economy to evaluate and describe the larger transformative actions that will be needed to meet the State’s more expansive emission reduction needs by 2050” (CARB 2014a). Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels and infrastructure); (3) agriculture; (4) water; (5) waste management; and (6) natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of the 2050 reduction goal.

Based on CARB’s research efforts, it has a “strong sense of the mix of technologies needed to reduce emissions through 2050” (CARB 2014b). Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the First Update, CARB recalculated the State’s 1990 emissions level using more recent GWPs identified by the Intergovernmental Panel on Climate Change. Using the recalculated 1990 emissions level and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent from the BAU conditions.

### **d. Regional Emissions Targets – SB 375**

Senate Bill 375 (SB 375), the 2008 Sustainable Communities and Climate Protection Act, was signed into law in September 2008 and required CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan. The purpose of SB 375 is to align regional transportation planning efforts, regional GHG reduction targets and fair-share housing allocations under State housing law. SB 375 requires Metropolitan Planning

Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy to address GHG reduction targets from cars and light-duty trucks in the context of that MPO's Regional Transportation Plan (RTP).

The San Diego Association of Governments (SANDAG) is the San Diego region's MPO. SANDAG completed and adopted its San Diego Forward in October 2015. CARB's targets for the SANDAG region call for a 7 percent reduction in GHG emissions per capita from automobiles and light-duty trucks compared to 2005 levels by 2020, and a 13 percent reduction by 2035. (The reduction targets are to be updated every eight years, but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets.) As stated by SANDAG, the strategy set forth in San Diego Forward is to "focus housing and job growth in the urbanized areas where there is existing and planned infrastructure, protect sensitive habitat and open space, invest in a network that gives residents and workers transportation options that reduce GHG emissions, promote equity for all and implement the Plan through incentives and collaboration." In December 2015, CARB—by executive order G-15-075—accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emission reduction targets for the region.

Pursuant to Government Code Section 65080(b)(2)(K), a SCS does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the State-mandated housing element process.

#### **e. California Building Standards Code (Title 24)**

The California Code of Regulations (CCR), Title 24, is referred to as the California Building Code, or CBC. It consists of a compilation of several distinct standards and codes related to building construction including, plumbing, electrical, interior acoustics, energy efficiency, handicap accessibility and so on. Of particular relevance to GHG reductions are the CBC's energy efficiency and green building standards.

#### ***Part 6 - Energy Code***

The CCR, Title 24, Part 6 is the Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The Energy Code is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. New construction and major renovations must demonstrate their compliance with the current Energy Code through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The 2008 update to the Energy Code, which became effective January 1, 2010, was developed in large part in response to AB 32. The 2008 Energy Code required energy savings of at least 21 percent above the former 2005 Energy Code, which is relevant as the original GHG inventory for the State was based on the 2005 Energy Code.

The current version of the Energy Code, known as the 2013 Energy Code, became effective July 1, 2014. The 2013 Energy Code provides mandatory energy-efficiency measures as well as voluntary tiers for increased energy efficiency. Based on an impact analysis prepared by the CEC for single-family residences, the 2013 Energy Code has been estimated to achieve a 36.4 percent increase in electricity efficiencies and a 6.5 percent increase in natural gas efficiencies over the 2008 Energy Code (CEC 2013). The same report estimates increased efficiencies for multi-family residences of 23.3 percent for electricity use and 3.8 percent for natural gas use, and a 21.8 percent increased efficiency for electricity use and 16.8 percent increased efficiency for natural gas use for non-residential buildings.

The next update to the Energy Code (2016) will become effective January 1, 2017. According to the CEC's frequently asked questions on the 2016 Energy Code, they indicate the 2016 standards will be 28 percent more efficient than the current 2013 standards (CEC 2016).

### ***Part 11 – California Green Building Standards Code***

The California Green Building Standards Code, referred to as CalGreen, was added to Title 24 as Part 11 first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 CBC). The 2013 CalGreen institutes mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory Green Building Standards and may adopt additional amendments for stricter requirements.

The mandatory standards require:

- 20 percent mandatory reduction in indoor water use relative to specified baseline levels;
- 50 percent construction/demolition waste diverted from landfills;
- Infrastructure requirements for electric vehicle charging stations;
- Mandatory inspections of energy systems to ensure optimal working efficiency; and
- Requirements for low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring and particleboards.

The voluntary standards require:

- Tier I—15 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste, 10 percent recycled content, 20 percent permeable paving, 20 percent cement reduction, cool/solar reflective roof; and
- Tier II—30 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste, 15 percent recycled content, 30 percent permeable paving and 30 percent cement reduction, cool/solar reflective roof.

Similar to the reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CalGreen water reduction requirements must be demonstrated through completion of water use reporting forms for new low-rise residential and non-residential buildings. The water use compliance form must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CalGreen or a reduced per-plumbing-fixture water use rate.

#### **f. AB 341 – Solid Waste Diversion**

The Commercial Recycling Requirements mandate that businesses (including public entities) that generate 4 cubic yards or more of commercial solid waste per week and multi-family residential with five units or more arrange for recycling services. Businesses can take one or any combination of measures in order to reuse, recycle, compost, or otherwise divert solid waste from disposal. Additionally, AB 341 mandates that 75 percent of all solid waste generated in the State be reduced, recycled, or composted by 2020 regardless of the source.

### **4.6.2.3 Local**

#### **a. Ordinances and Programs**

The City has implemented various ordinances, policies, programs and activities to enhance the community's sustainability and improve energy efficiency. The City has adopted an ordinance requiring construction, remodel, or renovation projects greater than 10,000 square feet to prepare a Waste Management Plan and reuse or recycle at least 60 percent of construction and demolition debris. In February 2010, the City adopted a Water Efficient Landscape Ordinance, which requires residential and non-residential projects above a certain size to prepare a Soil Management Report, provide water-efficient landscaping and irrigation in compliance with the City's Landscape Design Manual, demonstrate storm water management best practices, and provide defensible space for fire safety. The City will adopt a new Water Efficient Landscape Ordinance in 2016, as required by the State. On January 1, 2010, the Planning and Building Department began administering a Green Building Incentive Program that provides financial incentives (up to \$2,000 to complete the green building certification process), priority plan check and recognition for projects that register and achieve certification through the U.S. Green Building Council's (USGBC) Leadership in Energy

#### **b. General Plan/Local Coastal Program**

The City of Encinitas General Plan, along with relevant specific plans, contains policies directly and indirectly related to GHG emissions. Pertinent goals and policies related to GHG emissions are listed below in Table 4.6-6.

| <b>Table 4.6-6<br/>Goals and Policies Related to GHG Emissions</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Goal/Policy</b>                                                 | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>City of Encinitas General Plan Circulation Element</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Policy 1.15                                                        | The City will actively support an integrated transportation program that encourages and provides for mass-transit, bicycle transportation, pedestrians, equestrians, and car-pooling.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Goal 3                                                             | The City of Encinitas will promote the use of other modes of transport to reduce the dependence on the personal automobile.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3.2                                                                | Continue to assist in expanding public transportation and emphasize public transportation in future development with preference given to cost-effective alternatives.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3.3                                                                | Create a safe and convenient circulation system for pedestrians.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3.4                                                                | Cooperate with San Diego County, SANDAG, and other jurisdictions to help plan and implement a regional multi-modal transportation system that is accessible to residents in the City.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3.5                                                                | Encourage development of mass transit and transit access points along the existing Interstate 5 freeway corridor or along the railroad right-of-way.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3.6                                                                | The City should provide and encourage efficient links between possible rail transit service and other transportation modes, including rerouting of bus service to interface with transit stops.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3.11                                                               | The City will strive to implement a safe, direct, and convenient circulation system for commuting and recreational bicycle traffic. The City will support the development of additional bicycle facilities in the Coastal Zone, including the following: <ul style="list-style-type: none"> <li>• All Circulation Element roads will include provisions for bicycle lanes unless precluded by design and safety considerations in which cases, alternative routes shall be provided to form a continuous network.</li> <li>• The provision of secure bicycle storage facilities at all beaches designated for high and moderate levels of use.</li> <li>• The installation of bicycle and surfboard racks on all buses serving the Coastal Zone.</li> </ul> |
| <b>City of Encinitas General Plan Resource Management Element</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Policy 1.1                                                         | Require new development to utilize measures designed to conserve water in their construction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Policy 1.10                                                        | Promote the use of water efficient sprinkling and gardening systems to include ordinances and technology to encourage drought tolerant plants.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Goal 5                                                             | The City will make every effort to participate in programs to improve air and water quality in the San Diego region.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 5.1                                                                | The City will monitor and cooperate with the ongoing efforts of the U. S. Environmental Protection Agency, the San Diego Air Pollution Control District, and the State of California Air Resources Board in improving air quality in the regional air basin. The City will implement appropriate strategies from the San Diego County SIP which are consistent with the goals and policies of this plan.                                                                                                                                                                                                                                                                                                                                                    |
| Goal 6                                                             | The City will make every effort to reduce the amount of solid and liquid waste generated in the Planning Area and will identify ways to responsibly deal with these wastes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 6.1                                                                | The City will phase in all practical forms of mandatory recycling as soon as possible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6.2                                                                | The City will contract only with waste haulers who will willingly cooperate with the City's recycling effort.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Goal 9                                                             | The City will encourage the abundant use of natural and drought tolerant landscaping in new development and preserve natural vegetation, as much as possible, in undeveloped areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 9.4                                                                | Encourage and adopt standards for the use of drought tolerant and/ or natural landscaping and efficient irrigation systems throughout the City.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Table 4.6-6<br>Goals and Policies Related to GHG Emissions |                                                                                                                                                                                                               |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Goal/Policy                                                | Description                                                                                                                                                                                                   |
| Goal 13                                                    | Create a desirable, healthful, and comfortable environment for living while preserving Encinitas, unique natural resources by encouraging land use policies that will preserve the environment.               |
| 13.1                                                       | The City shall plan for types and patterns of development which minimize water pollution, air pollution, fire hazard, soil erosion, silting, slide damage, flooding and severe hillside cutting and scarring. |
| 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 alternate energy systems, including passive solar and architectural and mechanical systems, in both commercial and residential development.                                |
| 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.                                                                                      |
| SOURCE: City of Encinitas 1989, amended 2014.              |                                                                                                                                                                                                               |

### 4.6.3 Significance Determination Thresholds

Consistent with Appendix G of the CEQA Guidelines, impacts related to GHG emissions would be significant if the HEU project would:

1. Generate GHG emissions that may have a significant impact on the environment; or
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

In the context of CEQA, “GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective” (CAPCOA 2008). Additionally, there is no current scientific or regulatory consensus regarding what specific quantity of GHG emissions is considered significant to the environment, and there remains no applicable, adopted numeric threshold for assessing the significance of a project’s emissions. Furthermore, the global scale of climate change makes it difficult to assess the significance of a single project, particularly one designed to accommodate anticipated population growth (Council on Environmental Quality 2014). Indeed, unlike criteria pollutants, GHG emissions and climate change are not localized effects, and their magnitude cannot be quantified locally (CAPCOA 2008). Thus, in order to evaluate the project’s significance relative to the two significance criteria identified, several analyses have been utilized.

The first analysis discloses the estimated GHG emissions associated with HEU implementation; however, given the limitations on the ability to determine the specific quantity of GHG emissions that would have an adverse effect on the environment, the stated quantity does not provide sufficient information to determine significance under CEQA and is primarily informational.

The second analysis evaluates the HEU for compliance with regulatory programs designed to reduce greenhouse gas emissions. This second analysis is based on CEQA Guidelines section 15064.4(b)(3), which states a lead agency should also consider “[t]he extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.” Under this evaluation transportation emissions are evaluated for compliance with the SANDAG San Diego Forward, plan, which includes the regional SCS as required under SB 375. Energy and water use emissions are evaluated based on compliance with the California Energy Code and CalGreen Code, both of which have been identified by CARB as regulatory actions intended to reduce GHG emissions. Finally, solid waste emissions are evaluated based on compliance with the CalGreen Code recycling requirements and goals under AB 341.

The third analysis is a qualitative evaluation of the HEU to determine if the project would conflict with an applicable policy, plan, or regulation adopted for the intent of reducing GHG emissions. Applicable policies include statewide policies such as AB 32, S-3-05, and B-30-15 and local policies in the City General Plan; applicable plans include the State Scoping Plan, and Renewable Portfolio Standard (RPS); applicable regulations include the Energy Code, CalGreen Code, as well as local ordinances, such as the Water Efficient Landscape Ordinance.

#### 4.6.4 Methodology

For informational purposes, GHG emissions associated with each of the housing strategies were quantified and projected to the year 2020. GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) (CAPCOA 2013). In brief, the model estimates criteria air pollutants and GHG emissions by multiplying emission source intensity factors by estimated quantities of emission sources based on the land use information. All CalEEMod estimates are in terms of total MT CO<sub>2</sub>E.

Emission estimates were calculated for the three GHGs of primary concern (CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) that would be emitted from construction and the five primary operational sources that would be associated with HEU buildout: mobile sources, area sources, energy use, water use and solid waste disposal.

Appendix <sup>a</sup>L-1 contains details of the parameters used to model GHG emissions and full modeling outputs. Included in Appendix <sup>a</sup>L-1 also is a discussion of Federal and State plans and regulations that would indirectly reduce GHG emissions associated with buildout of the HEU and an explanation of how these plans and regulations were accounted for in modeling.

### 4.6.5 Issue 1: GHG Emissions

*Would the project generate GHG emissions that may have a significant impact on the environment?*

#### 4.6.5.1 Impacts

The HEU does not propose the construction of new housing or other development; rather, it provides capacity for future development consistent with State Housing Element Law. GHG emissions would be associated with the future construction and operation of each housing site. The amount of GHG emissions is proportional to the size of proposed development.

#### a. GHG Emissions

The primary sources of direct and indirect GHG emissions were calculated for buildout of the housing strategies. The project emissions reflect the effects of statewide laws intended to reduce GHG emissions. Specifically, GHG emissions associated with each housing site is affected by the Energy Code, CalGreen Code, and statewide regulations on vehicles, fuels, and renewable energy requirements (e.g., Pavley I, LEV III, the Low Carbon Fuel Standard, and the RPS). Additionally, housing sites that are located in close proximity to transit or provide mixed use amenities on-site would generate fewer vehicle miles traveled (VMT) than similar sites without access to transit or amenities.

#### *Housing Strategy Summary*

Table 4.6-7 summarizes the GHG emissions associated with buildout of housing strategy 1 (RM), 2 (BYO), and 3 (MMUP). As shown, buildout of housing strategy 1 (RM) would result in ~~42,812~~42,599 MT CO<sub>2</sub>E per year, housing strategy 2 (BYO) would result in ~~46,437~~46,241 MT CO<sub>2</sub>E per year, and buildout of housing strategy 3 (MMUP) would result in ~~55,865~~55,458 MTCO<sub>2</sub>E per year. While the housing strategy 3 (MMUP) would result in the greatest overall emissions, as shown in Table 4.6-7, it would result in the lowest per capita emissions among the housing strategies.

| Table 4.6-7<br>Year 2020 GHG Emissions (MT CO <sub>2</sub> E)                                                                                                                                               |                                       |                                       |                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Source                                                                                                                                                                                                      | Housing Strategy 1<br>(RM)            | Housing Strategy 2<br>(BYO)           | Housing Strategy 3<br>(MMUP)          |
| Vehicles                                                                                                                                                                                                    | 33,710                                | 37,820                                | 39,569                                |
| Energy                                                                                                                                                                                                      | <del>4,919</del> <u>4,729</u>         | <del>4,538</del> <u>4,363</u>         | <del>9,315</del> <u>8,951</u>         |
| Area                                                                                                                                                                                                        | 1,553                                 | 1,491                                 | 2,625                                 |
| Water                                                                                                                                                                                                       | <del>972</del> <u>953</u>             | <del>913</del> <u>895</u>             | <del>1,756</del> <u>1,722</u>         |
| Waste                                                                                                                                                                                                       | 777                                   | 720                                   | 1,451                                 |
| Construction                                                                                                                                                                                                | <del>881</del> <u>876</u>             | <del>955</del> <u>951</u>             | <del>1,149</del> <u>1,141</u>         |
| <b>TOTAL</b>                                                                                                                                                                                                | <b><del>42,812</del><u>42,599</u></b> | <b><del>46,437</del><u>46,241</u></b> | <b><del>55,865</del><u>55,458</u></b> |
| <b>MT CO<sub>2</sub>E per Capita<sup>1</sup></b>                                                                                                                                                            | <b><del>8.368</del><u>8.32</u></b>    | <b><del>9.399</del><u>9.36</u></b>    | <b><del>6.586</del><u>6.54</u></b>    |
| <sup>1</sup> The per capita calculation is based on the dividing the total emission associated with a housing strategy by the population increases for each strategy shown in Tables 4.11-3 through 4.11-5. |                                       |                                       |                                       |

While the HEU would result in an increase in GHG emissions from the existing condition, climate change is occurring on a global scale; therefore, it is not possible to quantify the true effect of new GHG emissions caused by a single project or whether a project's net increase in GHG emissions, when combined with other activities in the region, is cumulatively considerable. This is supported by the Sacramento Metropolitan Air Quality Management District (SMAQMD), which has stated "that there is no known level of emissions that determines if a single project will substantially impact overall GHG emission levels in the atmosphere" (SMAQMD 2014). Additionally, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has concluded that "existing science is inadequate to support quantification of impacts that project specific GHG emissions have on global climatic change" (SJVAPCD 2009). Thus, the numeric increase of approximately ~~42,812~~42,599 to ~~55,865~~55,458 MT CO<sub>2</sub>e annually, is not a sufficiently informative or reliable indicator of the significance of the project's GHG emissions. As discussed below, this analysis also considers other methods for analyzing the significance of the project's GHG emissions.

## **b. GHG Regulatory Programs**

As another means of assessing the significance of the GHG emissions of the HEU, the proposed project is evaluated based on compliance with regulatory programs designed to reduce greenhouse gas emissions, such as SB 375, the Energy Code, the CalGreen Code, AB 341, and the City's Water Efficient Landscape Ordinance.

### ***Transportation Emissions***

The transportation regulatory programs are designed to improve the fuel efficiency of vehicles, e.g., tire programs, Pavley and LEV III; decrease the carbon content in fuel (LCFS); and reduce emissions through comprehensive planning (SB 375). As the requirements for vehicle fuel efficiencies and fuel formulations are implemented at the State and manufacturer level, compliance with these regulatory programs are already taken into consideration and are not attributed to the HEU. Therefore, impacts from transportation GHG emissions of the HEU are evaluated based on consistency with SANDAG's SCS.

At this time, the land density and intensity in the SCS does not take into consideration the HEU. Chapter 5 of the SCS makes provisions for updating the SCS on a 4-year cycle under SB 375. Thus, it is necessary to consider compliance with the growth patterns and population projections in terms of the goals and policies GHG emissions.

The SCS encourages "smart growth" as a means of reducing GHG emissions. All three housing strategies encourage increased development diversity by increasing the buildout potential for commercial/mixed use and multi-family land uses. Locating different land use types near one another has been shown to decrease VMT, since trip lengths between land use types are shorter and uses may be accommodated by alternative modes of transportation (CAPCOA 2010).

To assist in the evaluation of the three housing strategies, the VMT and average trip length (trip generation efficiency) ~~were~~<sup>was</sup> calculated and compared to the No Project/Adopted Plan scenario. It was found that housing strategy 3 (MMUP) would have the highest efficiency,

followed by housing strategy 1 (RM), housing strategy 2 (BYO). All three strategies would have higher efficiency (lower trip lengths) than the No Project/Adopted Plan scenario (refer to Table 4.6-8).

| <b>Table 4.6-8<br/>VMT to Trip Generation Efficiency – HEU Growth in Land Use</b> |                                        |                      |                                  |                           |
|-----------------------------------------------------------------------------------|----------------------------------------|----------------------|----------------------------------|---------------------------|
| <b>Scenario</b>                                                                   | <b>Change in Daily Trip Generation</b> | <b>Change in VMT</b> | <b>VMT/Trip Generation Ratio</b> | <b>Efficiency Ranking</b> |
| No Project                                                                        | 0.00%                                  | 0.00%                | 1.000                            | 4                         |
| Ready Made (RM)                                                                   | 2.35%                                  | 1.71%                | 0.728                            | 2                         |
| Build Your Own (BYO)                                                              | 3.53%                                  | 3.02%                | 0.855                            | 3                         |
| Modified Mixed Use Places (MMUP)                                                  | 4.33%                                  | 2.93%                | 0.676                            | 1                         |

Thus, while the HEU housing strategies would allow greater development than the existing condition or No Project/Adopted Plan scenario with greater trip generation and total VMT, any of the HEU housing strategies would be more efficient because they would result a reduction in the overall average trip length. This can be attributed to the fact that housing strategies emphasize mixed use development with housing in close proximity to retail and employment land uses.

The goals and policies of the HEU are provided in Section 3.4.1.1 of this EIR. Table 4.6-9 provides a summary of the applicable San Diego Forward policies that apply to land use developments and a description of the HEU's compliance with those policies and supplementing policies.

| <b>Table 4.6-9<br/>San Diego Forward Applicable Policies</b>                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>San Diego Forward Policy</b>                                                                                                                                                              | <b>Description of Project Compliance</b>                                                                                                                                                                                                                                                                                                                                                           |
| Focus growth in areas that are already urbanized, allowing the region to set aside and restore more open space in our less developed areas.                                                  | All proposed development is within the incorporated area already serviced by existing transportation and utility systems.                                                                                                                                                                                                                                                                          |
| Support energy programs that promote sustainability.                                                                                                                                         | As stated in Policy 3.12, “[c]ost effective energy-efficient housing, including the use of passive systems, will be encouraged within the City to decrease energy use.” Additionally, all proposed development would be constructed to comply with the California Energy Code and CalGreen Code in effect at the time building plans are submitted.                                                |
| Increase the supply and variety of housing types -<br>- affordable for people of all ages and income levels in areas with frequent transit service and with access to a variety of services. | As stated in Goal 1 of the HEU, “the City will encourage a wide range of housing by location, type of unit, and price to meet the existing and future housing needs in the region and city. This goal includes policies aimed at including housing for a variety of income levels within the City in proximity to a variety of services. Some of the proposed sites include mixed use development. |

As shown, the project would be consistent with the applicable policies of the SCS and would promote the concepts and strategies of the SCS. However, due to the overall increase in VMT, transportation-related GHG emissions would be significant.

### ***Energy and Water Emissions***

Since the adoption of AB 32, State agencies have been developing various regulations to comply with the requirement to reduce GHG emissions to 1990 level by 2020. This includes the development of the California Green Building Code and revisions to the California Energy Code. The 2005 Energy Code only provided a 4 or 5 percent increase in energy efficiency over the previous codes. The 2008 update to the Energy Code achieved about a 30 percent improvement in energy efficiency over the 2005 Energy Code; the 2013 update achieves an average of 23 percent energy efficiency improvement over the 2008 Energy Code; and the 2016 update is anticipated to achieve an average 28 percent increase in energy efficiency over the 2013 Energy Code. The next Energy Code requirements are anticipated to require all residential structures to be net-zero energy demand, which would include provision of on- or off-site power generation for all proposed land uses. Compliance with current building regulations would achieve an approximate 46 percent in energy efficiency from 2005 and anything built under the 2016 Energy Code would likely achieve a 61 percent increase over the initial 2005 efficiency standards. However, precise energy reductions from future projects consistent with the HEU cannot be adequately quantified at this time. Given this uncertainty, energy-related GHG emissions would be significant at the program-level. Furthermore, while residential projects built after 2020 would be required to meet the net-zero energy standard, this would not ensure residential projects built prior to this requirement, would achieve the energy reductions required for post 2020 emissions reductions.

CalGreen requires water use reductions, including a minimum 20 percent reduction in indoor water use. This is achieved by specifying the flow rate of toilets, urinals, showerheads, and faucets. Similarly, outdoor water use is controlled and reduced through requirements for water efficient landscaping, soil/air moisture sensors, as well as flow rate controls on exterior faucets and hose bibs. Outdoor water use is also regulated locally through the City's Water Efficient Landscape Ordinance, which requires setting maximum use allowances and designing reduction measures as part of landscaping plans. Compliance with building regulations would ensure future projects include all necessary water efficiency measures in-line with the State regulatory programs for water reductions and energy efficiency standards. However, precise water reductions from future projects within the HEU area cannot be adequately quantified at this time. Given this uncertainty water-related GHG emissions would be significant at the program-level.

### ***Area Sources***

Area sources are groups of numerous small emission sources, which individually do not emit significant amounts of pollutants but together make an appreciable contribution to the emission inventory. Area sources associated with land use GHG emissions include hearths, i.e. wood-burning and natural fireplaces and heating-stoves, and equipment used in landscaping, e.g., lawn mowers, weed trimmers, chainsaws, etc.

Hearths are sources of GHG emissions and traditional fireplaces can also be energy inefficient as they create a poorly controlled opening in the building envelope. Currently, there are no regional or local regulations on fire places to reduce GHG emissions. CalGreen requires any installed fireplace to be a direct-vent sealed-combustion appliance and any wood-burning or wood pellet fueled appliance to meet EPA Tier II standards. Since 1988 the EPA has required wood-burning stoves and fireplace inserts sold in the U.S. to limit particulate emissions and increase the efficiency of the appliances. Currently these appliances emit approximately 90 percent less smoke than a traditional non-certified fireplace. The EPA also recommends considering using a wood-pellet burning stove, or a natural gas fireplace insert as an alternative to an EPA certified wood-burning stove or fireplace insert.

While the EPA recommendations are not specifically related to GHG emission reductions, the EPA states the requirements “reduce indoor and outdoor wood smoke pollution, including CO<sub>2</sub>, CH<sub>4</sub> and black carbon. Thus, compliance with these regulations would reduce pollution and significantly increase the energy efficiency of the hearths that may be installed in future developments. Additionally, wood, or wood-pellets, fuel represent a biogenic and fuel-efficient heat source. While the inclusion of a natural gas fueled insert would not be biogenic as it would consume a fossil fuel, the efficiency of the natural gas appliances are much greater than the wood-burning technologies. Thus, while the inclusion of natural gas, wood-burning, or wood-pellet fueled fire places in future multiple-family homes would generate GHG emissions, due to the regulatory controls of these sources the emissions would be reduced to the maximum extent currently feasible, the GHG emissions from these sources would be less than significant.

Small off-road engines (i.e. less than 25 horse power), such as those used in most landscape equipment are subject to emissions control standards under CCR Title 13, Division 3, Chapter 9, Off-Road Vehicles and Engines Pollution Control Device, Article 1, Small Off-Road Engines, these emission control requirements are intended to reduce emission of NO<sub>x</sub> and PM but do not regulate the emission of GHGs. Because gasoline, or two-stroke, fueled engine use by future residents would generate GHG emission where no regulatory controls exist to require emissions reduction or significant increase in efficiency, the emissions from small engines associated with landscape maintenance would be significant.

### ***Solid Waste Emissions***

Solid waste is primarily limited to the emissions associated with decomposing garbage and other organic waste. Solid waste can be substantial sources of GHG emissions. Currently there are statewide regulations requiring municipalities, commercial businesses, and multi-family residential developments to increase recycling and divert waste from landfills. As part of implementing reduction requirements, the City and EDCO disposal provide recycling and green waste recovery services to residents. This has assisted the City in meeting the statewide 50 percent reduction requirement. Additionally, under AB 341, commercial business and multi-family residential developments are required to increase recycling to divert waste from landfills. As future projects would be required to comply with this regulatory program developed to reduce GHG emissions from solid waste would be less than significant.

While buildout of the HEU would be based on market demand and is not actually anticipated to occur until 2030 or beyond, complying with the regulatory programs developed by the State

to reduce GHG emissions from waste, the HEU would continue to be in-line with achieving the 2030 and 2050 reduction goals as stated in EO S-03-05 and B-30-15.

#### 4.6.5.2 Significance of Impacts

No scientific or regulatory consensus exists regarding what particular quantity of GHG emissions is considered significant, and there remains no applicable, adopted numeric threshold for assessing the significance of a project's emissions. Therefore, the numeric increase of GHG emissions by approximately 42,812,599 to 55,865,458 MT CO<sub>2</sub>E annually, is not a sufficiently informative or reliable indicator of the significance of the project's GHG emissions. Therefore, as discussed, this analysis also considers compliance with regulatory programs intended to reduce GHG emissions in analyzing the significance of the HEU's GHG emissions.

Based on the analysis of the available regulatory programs, future development under the HEU would result in significant impacts due to transportation, energy, water use, and area sources as described above.

#### 4.6.5.3 Mitigation Framework

The following mitigation measure would address the GHG emission impacts at the program-level.

**GHG-1:** Within six months of adopting the HEU, the City shall provide a revised land use plan to SANDAG to ensure that any revisions to the population and employment projections used in updating the SCS will accurately reflect anticipated growth due to the HEU.

~~Applications for future development of housing sites consistent with the HEU floating zone program shall be required to comply with the following mitigation framework:~~

**GHG-2:** To mitigate citywide GHG impacts at the program-level, the City shall adopt a qualified climate action plan within 20 months after the date the HEU becomes effective. The climate action plan shall contain the following components:

1. The City's goals for reducing GHG emissions consistent with the statewide reduction goals outlined in Assembly Bill (AB) 32 and expressed in Executive Orders S-03-05, and B-30-15;
2. Quantified community and municipal GHG emissions inventories for a baseline year and business as usual emissions through 2050;
3. Identification of emission reduction required to meet GHG emissions targets as established by the California Air Resources Board's Climate Change Scoping Plan and related statewide policies and regulations; and

4. GHG reduction measures consisting of project-level implementation measures as well as citywide 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.

The timeline for preparation and adoption of the climate action plan shall include the following milestones:

- Project Initiation/Public Scoping Meetings – 2 Months
- Inventories and forecasts – 2 Months
- Outreach and Public Scoping Meetings – 2 Months
- Reduction Measures and Projections – 2 Months
- Document Preparation – 2 Months
- Environmental – 6 Months
- Public Review – 1 Month
- Response to Comments and Certification – 1 Month
- Commission and City Council Public Hearings – 2 Months

Upon completion of the climate action plan, future development shall be reviewed for consistency with the CAP, and projects may utilize the project implementation checklist to ensure compliance with the City's GHG reduction targets.

**GHG-3:** Until the adoption of a qualified climate action plan (or in the event a climate action plan is not adopted), all discretionary projects that exceed the CAPCOA 900 MT CO<sub>2</sub>E screening threshold shall prepare a project-specific GHG analysis that identifies an appropriate project-level significance threshold and project-specific mitigation measures. Mitigation measures that may be applied at the future project-level include, but are not limited to those identified in Table 4.6-10, below. The project-level analysis shall demonstrate that, with implementation of the mitigation measures identified in Table 4.6-10 that are applicable to the project, the project will not impede the implementation of AB 32 or Executive Order B-30-15.

**Table 4.6-10**  
**Menu of Potential Project-Level GHG Reduction Measures**

| <u>Feature</u>                             | <u>Description</u>                                                                                                      |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b><u>Indoor Space Efficiencies</u></b>    |                                                                                                                         |
| <u>Heating/Cooling Distribution System</u> | <u>Improve duct insulation 15% over standard requirement (2013 Title 24)</u>                                            |
| <u>Space Heating/ Cooling Equipment</u>    | <u>High Efficiency HVAC (equivalent to SEER 15 AFUE or 8.5 HSPF)</u>                                                    |
| <u>Water Heaters</u>                       | <u>High Efficiency Water Heaters or,<br/>Solar Water Heater Systems or,<br/>Water Heater with Solar Pre-heat System</u> |

**Table 4.6-10**  
**Menu of Potential Project-Level GHG Reduction Measures**

| <u>Feature</u>                                                | <u>Description</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Daylighting</u>                                            | <u>Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. Future development under the HEU, should strive for daylighting in all rooms within the living space through use of windows, solar tubes, skylights, etc.</u>                                                                                                                                                                                   |
| <u>Artificial Lighting</u>                                    | <u>High Efficiency Lights (50% of in-unit fixtures are high efficacy) High efficacy is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures &gt;40watt)</u>                                                                                                                                                                                                                                                                                      |
| <u>Appliances</u>                                             | <u>All multi-family developments will provided Energy Star ceiling fans, refrigerators, dishwashers, and laundry washing machines. Laundry washing machines include those provided for shared or common use.</u>                                                                                                                                                                                                                                                                                                        |
| <b><u>Miscellaneous Residential Building Efficiencies</u></b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>Cal-Green Tier II</u>                                      | <u>Demonstrate compliance with CalGreen Tier II standards.</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <u>Building Placement</u>                                     | <u>North/South alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting.</u>                                                                                                                                                                                                                                                                                                                                                       |
| <u>Shading</u>                                                | <u>At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on Jun 21<sup>st</sup>.</u>                                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>Energy Star Homes</u>                                      | <u>EPA Energy Star for Homes (version 3 or above)</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <u>Independent Energy Efficiency Calculations</u>             | <u>Provide point values based upon energy efficiency modeling of the Project. Note that engineering data will be required documenting the energy efficiency and point values based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.</u>                                                                                                                                                                                                                                                          |
| <b><u>Residential Renewable Energy Generation</u></b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <u>Photovoltaic</u>                                           | <u>Solar Photovoltaic panels installed on individual homes or in collective neighborhood arrangements such that the total power provided augments 25 percent of the power needs of the project.</u>                                                                                                                                                                                                                                                                                                                     |
| <u>Off-site renewable energy project</u>                      | <u>The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing homes that will help implement renewable energy within the City. These off-site renewable energy retrofit project proposals will be determined on a case by case basis and must be accompanied by a detailed plan that documents the quantity of renewable energy the proposal will generate. Point values will be determined based upon the energy generated by the proposal.</u> |
| <u>Other Renewable Energy Generation</u>                      | <u>The applicant may have innovative designs or unique site circumstances that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.</u>                                                                                                                                                                    |

| Table 4.6-10<br>Menu of Potential Project-Level GHG Reduction Measures                   |                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Feature                                                                                  | Description                                                                                                                                                                                                                                                                                                                                                                           |
| <b><u>Residential Water Conservation</u></b>                                             |                                                                                                                                                                                                                                                                                                                                                                                       |
| <b><u>Irrigation and Landscaping</u></b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>Water Efficient Landscaping</u>                                                       | <u>Limit conventional turf to &lt; 50% of required landscape area</u><br><u>Limit conventional turf to &lt; 25% of required landscape area</u><br><u>No conventional turf (warm season turf to &lt; 50% of required landscape area and/or low water using plants are allowed)</u><br><u>Only California Native Plants that requires no irrigation or some supplemental irrigation</u> |
| <u>Water Efficient irrigation systems</u>                                                | <u>Weather based irrigation control systems or moisture sensors (demonstrate 20% reduced water use)</u>                                                                                                                                                                                                                                                                               |
| <u>Recycled Water</u>                                                                    | <u>Recycled connections (purple pipe) to irrigation system on site</u>                                                                                                                                                                                                                                                                                                                |
| <u>Water Reuse</u>                                                                       | <u>Gray water Reuse System collects Gray water from clothes washers, showers and faucets for irrigation use.</u>                                                                                                                                                                                                                                                                      |
| <u>Storm water Reuse Systems</u>                                                         | <u>On-site storm water collection, filtration and reuse systems that provide supplemental irrigation water.</u>                                                                                                                                                                                                                                                                       |
| <b><u>Potable Water</u></b>                                                              |                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>Over all water reduction calculation</u>                                              | <u>Achieve 25 percent reduction</u>                                                                                                                                                                                                                                                                                                                                                   |
| <b><u>Vehicle Trip Reduction Measures</u></b>                                            |                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>Mixed Use</u>                                                                         | <u>Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions.</u>                                                                                                                                                                                                                                              |
| <u>Residential Near Local Retail (Residential only Projects)</u>                         | <u>Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled.</u>                                                                                                                                                                                                                                |
| <b><u>Bicycle Infrastructure</u></b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>Bicycle Infrastructure</u>                                                            | <u>Provide onsite bicycle-path linkages between residential and other land uses or a surrounding bicycle path network.</u>                                                                                                                                                                                                                                                            |
| <b><u>Renewable Fuel/Alternative Fuel Vehicles (Electric Vehicle Infrastructure)</u></b> |                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>Electric Vehicle Recharging</u>                                                       | <u>Provide circuit and capacity in garages of residential units for use by an electric vehicle. Charging stations are for on-road electric vehicles legally able to drive on all roadways including Interstate Highways and freeways.</u>                                                                                                                                             |
| <u>Electric Vehicle Charging Stations</u>                                                | <u>Include 1 electric vehicle charging station for every 50 parking spaces.</u>                                                                                                                                                                                                                                                                                                       |
| <b><u>Construction and Demolition Debris Diversion Program</u></b>                       |                                                                                                                                                                                                                                                                                                                                                                                       |
| <u>Recycling of Construction/ Demolition Debris</u>                                      | <u>All construction debris will be disposed of at a Construction, Debris, and Inert-material Recovery Facility.</u>                                                                                                                                                                                                                                                                   |

~~**GHG 2:** Demonstrate compliance with CalGreen Tier II standards.~~

~~**GHG 3:** Multi family residential development shall provide energy star appliances, including refrigerators, stoves, and dishwashers.~~

~~**GHG 4:** Include 1 electric vehicle charging station for every 50 parking spaces.~~

~~**GHG 5:** Demonstrate a 25 percent reduction in outdoor water use.~~

#### 4.6.5.4 Significance After Mitigation

The provision of land use data would assist SANDAG in revising the housing forecasts; however, the timing of revision of the SCS is within the exclusive jurisdiction of SANDAG and not the City and, therefore, until the anticipated growth is included in the emission estimates of the SCS, impacts relative to conformance with the SCS would remain significant and unavoidable.

In addition, while the proposed mitigation framework would reduce GHG emissions associated with future projects consistent with HEU, GHG emission reductions from future development cannot be adequately quantified at this time, and, therefore, this impact would be significant and unavoidable.

#### 4.6.6 Issue 2: Policies, Plans, and Regulations Intended to Reduce GHG Emissions

*Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?*

##### 4.6.6.1 Impacts

The following analysis is based on the whether the proposed HEU and subsequent development would conflict with policies, plans, or regulations. Thus, the question is not whether the GHG emissions from future development would be controlled by regulations to the extent they are not considered significant, but rather would the HEU result in a conflict with a policy, plans, or regulations that would result in the policy, plan, or regulation not be implemented or creating a situation the goals of the plan, policy, or regulation could not be achieved.

EO S-3-05 and B-30-15 establish the GHG emission reduction policy of the Executive Branch for the State, and AB 32 codified the 2020 goal of EO S-3-05 and launched the Climate Change Scoping Plan (CARB 2008) that outlined the reduction measures needed to reach these goals. Subsequent to the adoption of AB 32 and the development of the Scoping Plan, several levels of government have implemented regulatory programs to reduce GHG emissions. Several State agencies, including CARB, CEC, California Public Utilities Commission (CPUC), CalRecycle, Caltrans, CalFire, the Department of Water Resources, the Department of Food and Agriculture, and the Department of Goods and Services have developed regulatory and incentive programs to reduce GHG emissions. Policies related to Department of Food and Agriculture and CalFire are primarily related to the agriculture business and forest and rangeland management. Caltrans measures were limited to consideration of material selection and operational considerations. Thus, in order to determine whether or not the HEU would conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs, the project was analyzed to determine if it conflicted with regulations developed to reduce GHG and included in the State Scoping Plan and is summarized in Table 4.6-110. It should be noted that the measures identified in Table 4.6-110 are generally beyond the ability of the HEU or any future development to affect as many, such as RPS are

implemented at the utility provider or the manufacture level. However, all measures included in the Scoping Plan and regulated by the agencies listed were included for completeness, regardless of whether or not the project could conflict with the regulation.

| <b>Table 4.6-11<br/>Scoping Plan Regulatory Programs Implemented to Reduce GHG Emissions</b> |                                                                         |                                                                                                                                                                                                                                                                                                   |                                                                                                                                          |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>State Agency</b>                                                                          | <b>Regulatory Program</b>                                               | <b>Description</b>                                                                                                                                                                                                                                                                                | <b>Would the Project Conflict</b>                                                                                                        |
| CARB                                                                                         | Pavley I                                                                | Sets fleet-average GHG standards for new passenger vehicles, phasing in over 2009-2016. The emission reductions increase to 26 MMT CO <sub>2</sub> E annually in 2020 as the GHG standards are fully implemented                                                                                  | No. As this requirement is applied at the point of sale the project would not conflict with the program nor block its implementation.    |
| CARB                                                                                         | Diesel Anti-Idling                                                      | This regulation reduces the amount of diesel fuel used in California, saving 50 million gallons per year. Each gallon saved reduces climate change emissions by 0.01005 metric tons of CO <sub>2</sub> (MT CO <sub>2</sub> E).                                                                    | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB                                                                                         | Tire Pressure Program                                                   | Requires specified automobile servicing businesses to ensure proper tire inflation at the time of service, as well as public education about proper tire inflation.                                                                                                                               | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB                                                                                         | Goods Movement (Drayage Trucks)                                         | This regulation requires the reduction of GHG, diesel particulate matter (PM), and oxides of nitrogen (NOx) emissions from drayage trucks operating at, or transporting cargos to or from, California's ports and intermodal rail yards through retrofits, and fleet turnover of pre-1994 trucks. | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB                                                                                         | Ship Electrification                                                    | This regulation requires most container, passenger, and refrigerated cargo ships to shut off their auxiliary engines while at dock and receive power from the electrical grid, or reduce their emissions by a similar amount via the implementation of other technologies.                        | No, the project would affect and port operations and would not conflict with the program nor block its implementation.                   |
| CARB                                                                                         | Reduction of Refrigerant Emissions from Non-Professional Services       | This regulation requires a self-sealing valve on small cans of refrigerant, and a deposit and recycling program for the cans.                                                                                                                                                                     | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB                                                                                         | SF6 Limits in Non-Utility and Non-Semiconductor Applications            | This regulation achieves GHG emission reductions from SF6 use in non-semiconductor and nonutility applications through a phase-out of use over several years.                                                                                                                                     | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB                                                                                         | High Global Warming Potential GHG Reduction in Semiconductor Operations | This regulation requires semiconductor operations to use process optimization, alternative chemistries, and abatement technologies in combination or separately to reduce GHGs.                                                                                                                   | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB                                                                                         | Global Warming Potential Use in Consumer Products                       | This regulation sets Global Warming Potential (GWP) limits for compounds used in specific consumer products.                                                                                                                                                                                      | No, as this requirement is applied to at the point of sale the project would not conflict with the program nor block its implementation. |

**Table 4.6-11**  
**Scoping Plan Regulatory Programs Implemented to Reduce GHG Emissions**

| State Agency | Regulatory Program                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Would the Project Conflict                                                                                                               |
|--------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| CARB         | Refrigerant Management Program                        | This regulation requires facilities with large refrigeration systems with more than 50 pounds of high GWP refrigerant to conduct periodic leak inspections, promptly repair leaks, and keep service records on-site. These facilities are also required to register and submit annual refrigerant usage reports to ARB. This regulation also affects any person who installs, services, or disposes of any appliance using a high-GWP refrigerant; as well as refrigerant wholesalers, distributors, and reclaimers. | No, the project would not include a high GWP source and thus would not conflict with the program nor block its implementation.           |
| CARB         | SF6 Emission Reductions from Gas Insulated Switchgear | This regulation sets an annual emission rate limit for sulfur hexafluoride as a proportion of an entity's capacity of sulfur hexafluoride in gas-insulated switchgear.                                                                                                                                                                                                                                                                                                                                               | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB         | Landfill Methane                                      | This regulation requires enhanced control of methane emissions from municipal solid waste landfills and requires owners and operators to install gas collection and control systems at smaller and other uncontrolled landfills.                                                                                                                                                                                                                                                                                     | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB         | Low Carbon Fuel Standard                              | This regulation requires fuel providers in California to ensure that the mix of fuel they sell into the California market meets, on average, a declining standard for GHG emissions measured in CO <sub>2</sub> equivalent grams per energy unit of fuel sold.                                                                                                                                                                                                                                                       | No. As this requirement is applied to at the point of sale the project would not conflict with the program nor block its implementation. |
| CARB         | Heavy-Duty Vehicle Aerodynamic Efficiency             | This regulation reduces GHG emissions from long-haul tractors and 53-foot or longer dry-van and refrigerated-van trailers pulled by these tractors, by requiring them to be either U.S. Environmental Protection Agency SmartWay certified or retrofitted with SmartWay verified aerodynamic technologies and low rolling resistance tires.                                                                                                                                                                          | No, the project would not conflict with the program nor block its implementation.                                                        |
| CARB         | Medium- and Heavy- Duty Vehicle Hybridization         | This incentive program reduces the GHG emissions of urban, stop-and-go vehicles, such as parcel delivery trucks and vans, utility trucks, garbage trucks, transit buses, and other vocational work trucks, through the use of hybrid and zero-emission technology.                                                                                                                                                                                                                                                   | No, the project would not conflict with the program nor block its implementation.                                                        |
| CEC          | Specifications for New Supermarket Refrigeration      | The measure sets minimum prescriptive standards for energy efficient refrigeration systems and for design and installation of leak-tight refrigeration systems, which will apply to new supermarket construction and new supermarket refrigeration installation beginning January 1, 2014. The measures have been added to the California Title 24 Building                                                                                                                                                          | No, all future development would comply with Title 24 and would not conflict with the program nor block its implementation.              |

| Table 4.6-11<br>Scoping Plan Regulatory Programs Implemented to Reduce GHG Emissions |                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| State Agency                                                                         | Regulatory Program                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Would the Project Conflict                                                                                                                                                             |
|                                                                                      |                                                                          | Standards Code, Part 6 (Energy Efficiency), and Part 11 (Green Building Standards Code).                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                        |
| CEC                                                                                  | Appliance Energy Efficiency Standards                                    | The Appliance Efficiency Regulations increase efficiency of appliances sold to California consumers and businesses. Emission reductions result from energy-efficient appliances consuming less electricity and natural gas, avoiding emissions associated with electricity generation and natural gas combustion.                                                                                                                                                                                | No. As this requirement is applied to at the point of sale the project would not conflict with the program nor block its implementation.                                               |
| CEC                                                                                  | Building Energy Efficiency Standards                                     | The Building Energy Efficiency Standards are designed to increase the efficiency of all newly constructed residential and nonresidential buildings and additions and alterations to existing buildings in California. The strategy is to develop, implement, and enforce standards that require and result in reductions in energy and water use in buildings.                                                                                                                                   | No, all future development would comply with Title 24 and would not conflict with the program nor block its implementation.                                                            |
| CEC                                                                                  | Comprehensive Publicly Owned Utility Customer Energy Efficiency Programs | The publicly owned utilities (POU) in California offer electricity efficiency (EE) programs to their ratepayers.                                                                                                                                                                                                                                                                                                                                                                                 | No, the project would not conflict with the program nor block its implementation.                                                                                                      |
| CPUC                                                                                 | California Solar Initiative                                              | SB1 established a \$3 billion rebate program to support the deployment of 3,000 MW of distributed solar generation capacity statewide through 2016. The State has already exceeded the 3,000 MW in January 2016.                                                                                                                                                                                                                                                                                 | While the project does not specifically call for solar generation requirements, it would not conflict with nor block the implementation of the program as its goals have been reached. |
| CPUC                                                                                 | California Solar Initiative – Thermal Program (Solar Water Heating)      | The California Solar Initiative (CSI)-Thermal program offers incentives based on the amount of natural gas or electricity displaced by solar water heaters. Incentives are available for residential, multi-family and commercial applications.                                                                                                                                                                                                                                                  | While the project does not specifically call for solar generation requirements, it would not conflict with nor block the implementation of the program.                                |
| CPUC                                                                                 | Investor-Owned Utilities Energy Efficiency Programs                      | The program was developed for energy efficiency to reach residential (single family, and multi-family), commercial, industrial, and agricultural customers of investor-owned distribution utilities.                                                                                                                                                                                                                                                                                             | No, the project would not conflict with the program nor block its implementation.                                                                                                      |
| CPUC                                                                                 | Renewables Portfolio Standard                                            | The RPS program requires each retail seller to increase its total procurement of eligible renewable energy resources so that 33 percent of retail sales are served by eligible renewable energy resources no later than December 31, 2020. Recently the RPS was amended by SB 350, which requires each retail seller to increase its total procurement of eligible renewable energy resources so that 50 percent of retail sales are served by eligible renewable energy resources no later than | No, the project would not conflict with the program nor block its implementation.                                                                                                      |

| Table 4.6-11<br>Scoping Plan Regulatory Programs Implemented to Reduce GHG Emissions |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                   |
|--------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| State Agency                                                                         | Regulatory Program                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Would the Project Conflict                                                        |
|                                                                                      |                                         | December 31, 2030.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                   |
| DWR                                                                                  | End Use Water Conservation & Efficiency | Mandates a 20% reduction in statewide per capita urban water use by the year 2020. The Integrated Regional Water Management grant program includes a climate change standard which requires the consideration of water-related GHG emissions in regional water planning. In addition, Urban Water Management Plan guidelines recommend the inclusion of a climate change element that addresses water-related energy demand.                                                                                                                                                                                                                | No, the project would not conflict with the program nor block its implementation. |
| CalRecycle                                                                           | Statewide Recycling                     | CalRecycle provides assistance to local jurisdictions, businesses and the public with their recycling efforts. In 2013, a per-resident disposal rate of 4.3 pounds/resident/day was calculated using SB 1016's measurement system; the per-resident "diversion rate equivalent" was 65 percent. <sup>1</sup> The Budget Act of 2014 authorized CalRecycle to issue grants that result in reduced greenhouse gas emissions. CalRecycle awarded \$5 million for three fiber, plastic and glass recycling projects that increases the amount of material being landfilled, reduces greenhouse gases and focuses on infrastructure development. | No, the project would not conflict with the program nor block its implementation. |
| SOURCE: CalEPA 2015.                                                                 |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                   |

As discussed in Table 4.6-11<sup>9</sup>, the HEU would not conflict with any State regulation to reduce GHG emissions; it would not conflict with the most applicable plan, i.e., the Scoping Plan, nor policies as codified in AB 32 and stated in EO S-3-05 and B-30-15. Additionally, implementation of mitigation measure GHG-1 through GHG-36 would further reduce GHG emissions from future development under the HEU. Therefore, the project would not conflict with any applicable policy, plan, or regulation intended to reduction GHG emissions and the impact to GHG reduction policies, plans, and regulations would be less than significant.

#### 4.6.6.2 Significance of Impacts

As shown, the HEU would not conflict with any applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs, and impacts would be less than significant.