5.4 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for implementation of the City of Westminster General Plan Update (proposed General Plan Update) to cumulatively contribute to greenhouse gas (GHG) emissions impacts. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a project are considered on a cumulative basis. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (SCAQMD). Transportation-sector impacts are based on average daily vehicle miles traveled (VMT) provided by Fehr & Peers (see Appendix I) for trips generated in the City of Westminster. GHG emissions modeling for the project is included in Appendix D of this DEIR.

Terminology

The following are definitions for terms used throughout this section.

- **Greenhouse gases (GHG).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a greenhouse gas absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e).** The standard unit to measure the amount of greenhouse gases in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

5.4.1 Environmental Setting

5.4.1.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6),

hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 1996).[1,2] The major GHGs are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high GWP gases.

    - *Chlorofluorocarbons (CFCs)* are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down the ozone layer. These gases are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

    - *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with hydrofluorocarbons (HFCs), to ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high GWP.

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.
[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2014a). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although they are ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs. (IPCC 1996; EPA 2015)

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.4-1, *GHG Emissions and their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Second Assessment Report GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 210 MT of CO_2.[3]

[3] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

Table 5.4-1 GHG Emissions and their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	50 to 200	1	1
Methane[2] (CH_4)	12 (±3)	12	21	25
Nitrous Oxide (N_2O)	120	114	310	298
Hydrofluorocarbons:				
HFC-23	264	270	11,700	14,800
HFC-32	5.6	4.9	650	675
HFC-125	32.6	29	2,800	3,500
HFC-134a	14.6	14	1,300	1,430
HFC-143a	48.3	52	3,800	4,470
HFC-152a	1.5	1.4	140	124
HFC-227ea	36.5	34.2	2,900	3,220
HFC-236fa	209	240	6,300	9,810
HFC-4310mee	17.1	15.9	1,300	1,030
Perfluoromethane: CF_4	50,000	50,000	6,500	7,390
Perfluoroethane: C_2F_6	10,000	10,000	9,200	12,200
Perfluorobutane: C_4F_{10}	2,600	NA	7,000	8,860
Perfluoro-2-methylpentane: C_6F_{14}	3,200	NA	7,400	9,300
Sulfur Hexafluoride (SF_6)	3,200	NA	23,900	22,800

Sources: IPCC 1996; IPCC 2007.

Notes: The IPCC published updated global warming potential (GWP) values in its Fifth Assessment Report (2013) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values from the Second Assessment Report are still used by SCAQMD to maintain consistency in GHG emissions modeling. CARB's 2008 Scoping Plan was based on the GWP values in the Second Assessment Report.

1 Based on a 100-year time horizon of the GWP of the air pollutant relative to CO_2.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

California's Greenhouse Gas Sources and Relative Contribution

California is the tenth largest GHG emitter in the world and the second largest emitter of GHG emissions in the United States, surpassed only by Texas (CEC 2005). However, California also has over 12 million more people than Texas. Because of more stringent air emission regulations, in 2001, California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO_2 emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services)(CEC 2006a).

CARB's last update to the statewide GHG emissions inventory that used the Second Assessment Report GWPs was in 2012 for year 2009 emissions.[4] In 2009, California produced 457 MMT of CO_2e GHG emissions. California's transportation sector is the single largest generator of GHG emissions, producing 37.9 percent of the state's total emissions. Electricity consumption is the second largest source, producing

[4] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

22.7 percent. Industrial activities are California's third largest source of GHG emissions at 17.8 percent (CARB 2012a).

In 2015, the statewide GHG emissions inventory was updated for 2000 to 2012 emissions using the GWPs in IPCC's Fourth Assessment Report. Based on these GWPs, California produced 459 $MMTCO_2e$ GHG emissions in 2012. California's transportation sector remains the single largest generator of GHG emissions, producing 36.5 percent of the state's total emissions. Electricity consumption made up 20.7 percent, and industrial activities produced 19.4 percent. Other major sectors of GHG emissions include commercial and residential, recycling and waste, high global warming potential GHGs, agriculture, and forestry (CARB 2014b).

Human Influence on Climate Change

For approximately 1,000 years before the industrial revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and climate change pollutants that are attributable to human activities. The amount of CO_2 has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million (ppm) per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is rising at a rate that cannot be explained by natural causes alone.[5] Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historic trends in emissions as well as observations on the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, climate trends include varying degrees of certainty on the magnitude of the trends for:

- Warmer temperatures and fewer cold days and nights over most land areas.
- Warmer temperatures and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.

[5] At the end of the last ice age, the concentration of CO_2 increased by around 100 ppm (parts per million) over about 8,000 years, or approximately 1.25 ppm per century. Since the start of the industrial revolution, the rate of increase has accelerated markedly. The rate of CO_2 accumulation currently stands at around 150 ppm/century—more than 200 times faster than the background rate for the past 15,000 years.

- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extremely high sea level (excludes tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada. By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels (CCCC 2012).

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) an advanced snowmelt of 5 to 30 days earlier in the springs; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). According to the California Climate Action Team, even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.4-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are listed in Table 5.4-2, *Summary of GHG Emissions Risks to California*, and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

Specific climate change impacts that could affect the project include:

- **Water Resources Impacts.** By the late twenty-first century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the state can be expected to be drier from the warming effects alone because the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months (CCCC 2012).
- **Wildfire Risks.** Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase from 58

percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location (CCCC 2012).

- **Health Impacts.** Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing frequency of multiple hot days in succession, and simultaneous heat waves in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California (CCCC 2012).

- **Increased Energy Demand.** Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and long summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process from higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand (CCCC 2012).

Table 5.4-2 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: CEC 2006b; CEC 2008; CCCC 2012.

5.4.1.2 REGULATORY FRAMEWORK

Federal Laws

The US Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not in and of themselves impose any emission reduction requirements, but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (EPA 2009).

The EPA's endangerment finding covers emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world (the first three are applicable to the project).

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2 per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon [mpg] by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow auto makers who show compliance with the national program to be deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017–2025 that will require a fleet average of 54.5 mpg in 2025.

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to the President's 2013 Climate Action Plan, the EPA will be directed to also develop regulations for existing stationary sources.

State Laws

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, Executive Order B-30-15, Assembly Bill 32 (AB 32), and Senate Bill 375 (SB 375).

Executive Order S-03-05

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal of Executive Order B-30-15 as well as the long-term goal for 2050 in

Executive Order S-03-5. It requires the Natural Resources Agency to conduct triennial updates the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MT of CO_2e per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be approximately 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons). The 2020 target requires a total emissions reduction of 169 $MMTCO_2e$, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e., 28.5 percent of 596 $MMTCO_2e$) (CARB 2008).[6]

Since release of the 2008 Scoping Plan, CARB has updated the statewide GHG emissions inventory to reflect GHG emissions in light of the economic downturn and measures not considered in the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 545 $MMTCO_2e$ by 2020. The revised BAU 2020 forecast shows that the state would have to reduce GHG emissions by 21.7 percent from BAU. The new inventory also identifies that if the updated 2020 forecast includes the reductions assumed from implementation of the Pavley Standards (26 $MMTCO_2e$ of reductions) and the 33 percent Renewable Portfolio Standard (RPS; 12 $MMTCO_2e$ of reductions), the forecast would be 507 $MMTCO_2e$ in 2020, and an estimated 80 $MMTCO_2e$ of additional reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, or 15.7 percent of the projected emissions compared to BAU in year 2020 (i.e., 15.7 percent of 507 $MMTCO_2e$) (CARB 2012b).

Key elements of CARB's GHG reduction plan that may be applicable to the project are:

[6] CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

- Expanding and strengthening existing energy efficiency programs and building and appliance efficiency standards (adopted and cycle updates in progress).

- Achieving a mix of 33 percent for energy generation from renewable sources (anticipated by 2020).

- A California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources (adopted 2011).

- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted).

- Adopting and implementing measures pursuant to state laws and policies, including California's clean car standards (amendments to the Pavley Standards adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (LCFS) (adopted 2009).

- Creating target fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation (in progress).

Table 5.4-3, *Scoping Plan GHG Reduction Measures and Reductions toward 2020 Target*, shows the proposed reductions from regulations and programs outlined in the 2008 Scoping Plan. Although local government operations were not accounted for in achieving the 2020 emissions reduction, CARB estimates that land use changes implemented by local governments that integrate jobs, housing, and services result in a reduction of 5 MMT CO_2e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role that local governments play in the successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target.[7] Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer vehicle miles traveled (CARB 2008).

[7] The Scoping Plan references a goal for local governments to reduce community GHG emissions by 15 percent from current (interpreted as 2008) levels by 2020, but it does not rely on local GHG reduction targets established by local governments to meet the state's GHG reduction target of AB 32.

Table 5.4-3 Scoping Plan GHG Reduction Measures and Reductions toward 2020 Target

Recommended Reduction Measures	Reductions Counted toward 2020 Target of 169 $MMTCO_2e$	Percentage of Statewide 2020 Target[1]
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets[2]	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	**146.7**	**87%**
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	**27.3**	**16%**
Total Reductions Counted toward 2020 Target	**174**	**100%**
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations[3]	To Be Determined	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	**42.8**	**NA**

Source: CARB 2008.
Notes: $MMTCO_2e$: million metric tons of CO_2e
[1] The percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 $MMTCO_2e$ and the Scoping Plan identifies 174 $MTCO_2e$ of emissions reductions strategies.
[1] Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target.
[2] According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 $MMTCO_2e$ (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target.

2014 Update to the Scoping Plan

CARB adopted the First Update to the Scoping Plan at the May 22, 2014, board hearing. The Update defines CARB's climate change priorities for the next five years and lays the groundwork to reach the post-2020 goals of Executive Orders S-03-05 and B-16-2012. The update includes the latest scientific findings related to

climate change and its impacts, including short-lived climate pollutants. The GHG target in the 2008 Scoping Plan was based on GWPs that IPCC identified in the Second Assessment Report (see Table 4.6-1).[8] In the First Update to the Scoping Plan, CARB projects that statewide BAU emissions in 2020 would be approximately 509 $MMTCO_2e$.[9] Therefore, to achieve the AB 32 target of 431 $MMTCO_2e$ (i.e., 1990 emissions levels) by 2020, the state would need to reduce emissions by 78 $MMTCO_2e$ compared to BAU conditions, a reduction of 15.3 percent from BAU in 2020. The data from the First Update to the Scoping Plan regarding GHG emissions and reductions needed to achieve the 1990 emissions target are shown in Table 5.4-4, *State BAU Forecast in the First Update to the Scoping Plan*.

Table 5.4-4 State BAU Forecast in the First Update to the Scoping Plan

Recommended Reduction Measures	2020 $MMTCO_2e$ – Fourth Assessment Report GWPs
AB 32 Baseline 2020 Forecast Emissions (2020 BAU) with Pavley I and the Renewable Electricity Standard (RPS)	539
AB 32 Baseline 2020 Forecast Emissions (2020 BAU)[1]	509
Expected Reductions from Sector-Based Measures	
Energy	25
Transportation	23
High-GWPs	5
Waste	2
Cap-and-Trade Reductions[2]	23
2020 Limit	431
Percent Reduction from BAU with Pavley I and RPS	20.0%
Percent Reduction from BAU without Pavley and RPS	15.3%

Sources: CARB 2014a.
[1] The total projected emissions in the 2020 BAU scenario accounts for reductions anticipated from Pavley I and the Renewable Electricity Standard (30 million $MTCO_2e$ total).
[2] The cap-and-trade reductions depend on the emissions forecast.

The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the Update to the Scoping Plan also addresses the state's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high-level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals (CARB 2014a).

According to the Update to the Scoping Plan, reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's

[8] IPCC's Fourth and Fifth Assessment Reports identified more recent GWP values based on the latest available science. CARB recalculated the 1990 GHG emission levels with the updated GWPs in the Fourth Assessment Report, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher, at 431 $MMTCO_2e$ (CARB 2014a).
[9] The BAU forecast includes GHG reductions from Pavley and the 33% Renewable Portfolio Standard (RPS).

2050 climate targets will require significant accelerations of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014a).

Second Update to the Scoping Plan

The new Executive Order B-30-15 requires CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. According to CARB, the Scoping Plan will be updated by late 2016 to address the new 2030 interim target to achieve a 40 percent reduction below 1990 levels by 2030 (CARB 2015a).

Senate Bill 375

In 2008, Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations with local land use planning to reduce vehicle miles traveled and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). SB 375 requires CARB to periodically update the targets, no later than every 8 years. CARB plans to propose updated targets for consideration in 2016, with the intent to make them effective in 2018. Sustainable communities strategies adopted in 2018 would be subject to the updated targets (CARB 2015b).

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

CARB is currently in the process of updating the next round of targets and methodology to comply with the requirement for updates every eight years. Considerations for the next round of targets include whether to change the nature or magnitude of the emissions reduction targets for each of the MPOs, and whether the target-setting methodology should account for advances in technologies that reduce emissions. Such changes in methodology would permit cities to account for emissions reductions from advances in cleaner fuels and vehicles, not from land use and transportation planning strategies only.

SCAG's 2016 RTP/SCS

SB 375 requires the MPOs to prepare a sustainable communities strategy in their regional transportation plan. For the SCAG region, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016 (SCAG 2016) and is an update to the 2012 RTP/SCS. In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

The 2016-2040 RTP/SCS projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB. It is projected that VMT per capita in the region for year 2040 would be reduced by 7.4 percent with implementation of the 2016-2040 RTP/SCS compared to a no-plan year 2040 scenario. Under the 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions 8 percent below 2005 levels by 2020, 18 percent by 2035, and 21 percent by 2040. The 18 percent reduction by 2035 over 2005 levels represents a 2 percent increase in reduction compared to the 2012 RTP/SCS projection. Overall, the SCS is meant to provide growth strategies that will achieve the aforementioned regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around High Quality Transit Areas and Livable Corridors, and creating Neighborhood Mobility Areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with SCS; instead, it provides incentives to governments and developers for consistency.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel-economy and GHG-emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases with requirements for greater numbers of zero-emission vehicles to create a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold within the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based

mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero emission by 2015 and at least 25 percent by 2020. Finally, the executive order sets a target of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

Senate Bills 1078 and 107 and Executive Order S-14-08

A major component of California's Renewable Energy Program is the renewable portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SBX1-2). The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon), signed into law September 2015, establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

California Building Code, Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2013 (Title 24, Part 6, California Code of Regulations). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which went into effect on July 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (non-residential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

Most recently, the CEC adopted the 2016 Building and Energy Efficiency Standards. The 2016 Standards will continue to improve upon the current 2013 Standards for new construction of and additions and alterations to residential and nonresidential buildings. These standards will go into effect on January 1, 2017. Under the 2016 Standards, residential buildings are 28 percent more energy efficient than the 2013 Standards, and non-residential buildings are 5 percent more energy efficient than the 2013 Standards (CEC 2016a).

The 2016 standards will not get us to zero net energy. However, they do get us very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California (CEC 2016b).

California Building Code, CALGREEN

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards—the California Green Building Standards Code (Part 11, Title 24, known as "CALGreen")—adopted as part of the California Building Standards Code (Title 24 CCR). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[10] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2013.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (Title 20, CCR §§ 1601 through 1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by any other state, and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939; Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327; California Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance

[10] The green building standards became mandatory in the 2010 edition of the code.

for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2013 California Green Building Standards Code (24 CCR Part 11) also requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014, Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the CEC, in consultation with the DWR, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment. This equipment includes irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

5.4.1.3 EXISTING CONDITIONS

An emissions inventory of the City of Westminster and its sphere of influence (SOI) was conducted based on the existing land uses and is shown in Table 5.4-5, *Existing City of Westminster and SOI Greenhouse Gas Emissions Inventory*. The existing land uses are the residential, institutional, commercial, office, and industrial uses identified in Table 4-1. Criteria air pollutant emissions generated in the City and SOI were estimated using EMFAC2014, EMFAC2011-PL, OFFROAD2007, and data provided by Southern California Edison

(SCE) and the Southern California Gas Company (SoCalGas) for electricity and natural gas use, respectively. Emissions for the City and SOI come from the following sources:[11]

- **Transportation:** Emissions from vehicle trips beginning and ending in the City and SOI boundaries and from external/internal vehicle trips (i.e., trips that either begin or end in the City).
- **Area Sources:** Emissions generated from lawn and garden, commercial, and construction equipment use in the City and SOI.
- **Energy:** Emissions generated from purchased electricity and natural gas consumption used for cooking and heating in the City and SOI.
- **Solid Waste Disposal:** Indirect emissions from waste generated in the City and SOI.
- **Water/Wastewater:** Emissions from electricity used to supply, treat, and distribute water based on the overall water demand and wastewater generation in the City and SOI.

[11] Life-cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions, found that life-cycle analysis was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life-cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

Table 5.4-5 Existing City of Westminster and SOI Greenhouse Gas Emissions Inventory

Sector	Existing (CEQA Baseline) 2015 GHG Emissions	
	$MTCO_2e$/year	Percent of Total
Transportation[1]	190,094	47%
Energy – Residential[2]	97,924	24%
Energy – Nonresidential[2]	76,220	19%
Energy – City[2]	3,241	1%
Waste[3]	9,027	2%
Water/Wastewater[4]	14,795	4%
Other – Off-Road Equipment[5]	11,814	3%
Existing Community-Wide Emissions Total	**403,116**	**100%**
Service Population (SP)[6]	114,997	NA
$MTCO_2e$/Year/SP	3.5 $MTCO_2e$/Year/SP	NA

Note: Emissions may not total 100 percent due to rounding.

1 EMFAC2011-PL and EMFAC2014. Model runs were based on daily per capita VMT data provided by Fehr & Peers.

2 Electricity and natural gas usage data provided by SCE and SoCalGas, respectively. The carbon intensity of the purchased electricity are from EPA eGRID2012 data (USEPA 2015). For natural gas, the intensity factors for CO_2, CH_4, and NO_2 are from the LGOP, version 1.1 (May 2010).

3 Landfill Emissions Tool Version 1.3 and CalRecycle. Waste generation based on three-year average (2012–2014) waste commitment for the City of Westminster obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's gas capture system. The landfill gas capture efficiency is based on CARB's Local Government Operations Protocol (LGOP), version 1.1. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Therefore, the highest CH_4 emissions from waste disposal in a given year are reported.

4 LGOP, version 1.1, based on the City's 2010 urban water management plan for water demand.

5 OFFROAD2007. Consists of landscaping, light commercial, and construction equipment. Landscaping and light commercial equipment emissions based on population and employment for the City of Westminster as a percentage of Orange County. Construction equipment emissions based on housing permit data for Orange County and the City of Westminster from the US Census. Area sources exclude emissions from fireplaces and consumer products.

6 Approximately 92,168 residents and 22,829 employees.

5.4.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the project would have a significant effect on the environment with respect to GHG emissions if it would:

GHG-1 Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

5.4.2.1 SCAQMD GHG SIGNIFICANCE THRESHOLDS

SCAQMD has adopted a significance threshold of 10,000 $MTCO_2e$ per year for permitted (stationary) sources of GHG emissions for which SCAQMD is the designated lead agency (SCAQMD 2015). To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting in September 2010 (Meeting No. 15), SCAQMD identified a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency (SCAQMD 2010):

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a "bright-line" screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, or 3,000 $MTCO_2e$ for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore less than cumulatively considerable, impact on GHG emissions:

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

SCAQMD has identified an efficiency target for projects that exceed the bright-line threshold. SCAQMD has identified a 2020 efficiency target of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan level projects (e.g., program-level projects such as general plans). The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[12]

The proposed project is a revision of the current General Plan; therefore, project emissions are compared to the SCAQMD's plan-level efficiency threshold. The proposed General Plan horizon year is beyond year 2020, and for the purposes of this EIR is estimated to be built out by 2035. Therefore, the efficiency targets have been adjusted based on the long-term GHG reduction targets of Executive Order B-30-15, which set a goal of 40 percent below 1990 levels by 2030, and Executive Order S-03-05, which set a goal of 80 percent below 1990 levels by 2050 (see Table 5.4-6, *Forecasting the Post-2020 GHG Reduction Targets*).

[12] SCAQMD took the 2020 statewide GHG reduction target for land use only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

Table 5.4-6 Forecasting the Post-2020 GHG Reduction Targets

Category	GHG Emissions MTCO2e/Year[1] (SAR GWPs)		Notes
2020 Statewide GHG Target	433,290,000		1990 levels by 2020
2030 Statewide GHG Target	259,970,000		40% below 1990 levels by 2030
2050 Statewide GHG Target	86,660,000		80% below 1990 levels by 2050
2035 Statewide GHG Target[2]	216,640,000		Trend-line between 2030 and 2050: 50 percent reduction from 1990 levels by 2035.
Population and Employment Forecasts	**2035**	**2050**	
Population[3]	45,747,645	49,779,362	Based on the California Department of Finance forecasts
Employment[4]	20,062,090	20,895,900	Based on California Department of Transportation
Service Population (SP)	**65,809,735**	**72,342,882**	—
Efficiency Target	**3.3 $MTCO_2e$/SP**	**1.2 $MTCO_2e$/SP**	—

Notes: SAR: Second Assessment Report; GWP: Global Warming Potentials; MTCO2e: metric tons of carbon dioxide-equivalent
Sources:
1 CARB. 2007, November. California Greenhouse Gas Inventory: Summary by Economic Sector.
2 Based on the 2030 target of 40 percent below 1990 levels by 2030 under Executive Order B-30-15 and the target of 80 percent below 1990 levels by 2050 under Executive Order S-03-05.
3 California Department of Finance. 2014, December. Report P-1 (County): State and County Total Population Projections, 2010-2060 (5 -year increments). http://www.dof.ca.gov/research/demographic/reports/projections/P-1/.
4 California Department of Transportation. Long-Term Socio-Economic Forecasts by County. http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html.

Based on these long-term targets, project emissions are compared to the SCAQMD's plan-level efficiency threshold of:

- The City's 2020 GHG estimated efficiency target would be 6.6 $MTCO_2e$ per service population per year, to align with SCAQMD's efficiency target, identified in their CEQA Guidelines, which is consistent with AB 32.

- The City's 2035 GHG estimated efficiency target would be 3.3 $MTCO_2e$ per service population per year, to align with the midterm GHG reduction goal of Executive Order B-30-15 and Executive Order S-03-05.[13]

- The City's 2050 GHG estimated efficiency target would be 1.2 $MTCO_2e$ per service population per year, to align with the long-term GHG reduction goals of Executive Order S-03-05. Since the 2050 horizon extends beyond the 2035 horizon year of the General Plan Update, this efficiency metric is only considered for consistency with the statewide GHG reduction targets, which are addressed in the CARB Scoping Plan (see Impact GHG-2). Under this criterion, efficiency is used as a way to gauge whether the City is on a trajectory to achieve the even longer-term targets under the Executive Order S-03-05.

[13] The proposed Project horizon year is 2035; therefore, the SCAQMD efficiency target has been extrapolated to 2035 based on the GHG reduction goal of Executive Order B-30-15, which is to reduce GHG emissions 40 percent below 1990 levels by 2030, and Executive Order S-03-05, which is to reduce GHG emissions 80 percent below 1990 levels by 2050.

5.4.3 Environmental Impacts

5.4.3.1 METHODOLOGY

This GHG evaluation was prepared in accordance with the requirements of CEQA to determine if significant GHG impacts are likely to occur in conjunction with future development that would be accommodated by the proposed General Plan.[14] The City's GHG emissions inventory includes the following sectors:

- **Transportation:** Transportation emissions forecasts were modeled for vehicle trips beginning and ending within the City of Westminster and its SOI and from external/internal vehicle trips (i.e., trips that either begin or end within the City and its SOI). Model runs were based on VMT data provided by Fehr & Peers using the Orange County Transportation Authority Model and 2015 (existing) and 2035 CARB EMFAC2014 emission rates. These rates includes reductions from federal and state regulations such as Pavley I fuel efficiency standards, California Advance Clean Car Standards, and LCFS. The VMT provided, per Regional Transportation Advisory Committee recommendation, includes the full trip length for land uses in the City (origin-destination approach) and a 50 percent reduction in the trip length for external/internal and internal/external trips. Forecasts are adjusted for increases in population in the City and its SOI. To estimate annual emissions, adjusted daily VMT was multiplied by 347 days per year to account for reduced traffic on weekends and holidays. This assumption is consistent with CARB's methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

- **Energy:** Natural gas and electricity use for residential and nonresidential land uses in the City were modeled using data provided by SoCalGas and SCE, respectively. Natural gas and electricity use are based on three-year (2012–2014) averages to account for fluctuation in annual use as a result of natural variations in climate. Forecasts are adjusted for increases in population in the City and its SOI. The intensity factor of the purchased electricity is based on the EPA eGRID2012 CO_2e intensity factor provided and adjusted to account for the reduction in carbon intensity of the energy supply required under the 33 percent RPS (CEC 2012). Intensity factors for CO_2, CH_4, and N_2O provided in CARB's Local Governments Protocol (LGOP), version 1.1, were used for natural gas.

- **Waste:** Modeling of landfilled waste disposed of by residents and employees in the City is based on the waste commitment method using the CARB's Landfill Emissions Tool model, version 1.3, based on waste disposal (municipal solid waste and alternative daily cover) and waste characterization data from CalRecycle (CalRecycle 2014). Landfills in California have gas capture systems, but because the landfill gas captured is not under the jurisdiction of the City, the emissions from the capture system are not included in the City's inventory. Only fugitive sources of GHG emissions from landfills are included. Modeling assumes a 75 percent reduction in fugitive GHG emissions from the landfill's gas capture system. The landfill gas capture efficiency is based on CARB's LGOP, version 1.1. Biogenic CO_2

[14] The methodology used in completing the GHG inventory was employed for purposes of fulfilling the requirements of CEQA and may differ from the methodology used in completing the GHG inventory found in the City's Climate Action Plan.

emissions are not included. Forecasts are adjusted for increases in population and employment in the City.

- **Water/Wastewater:** GHG emissions from water and wastewater include indirect GHG emissions from the embodied energy (i.e., energy required for treatment and distribution) of water and wastewater. Total water generation in the City and SOI is based on the generation rate provided in the City's 2010 urban water management plan (UWMP). Forecasts are adjusted for increases in population and employment and are based on the target per capita of SBx7-7.[15] Energy use from water use and wastewater treatment is estimated using energy rates identified by the CEC (CEC 2006c) and carbon intensity of energy based on EPA eGRID2012 data. In addition to the indirect emissions associated with the embodied energy of water use and wastewater treatment, wastewater treatment also results in fugitive GHG emissions. Fugitive emissions from wastewater treatment associated with the General Plan Update were calculated using the emissions factors in CARB's LGOP, version 1.1. Forecasts are adjusted for increases in population and employment in the City and its SOI.

- **Other Sources:** OFFROAD2007 was used to estimate GHG emissions from landscaping equipment, light commercial equipment, and construction equipment in the City. OFFROAD2007 is a database of equipment use and associated emissions for each county, compiled by CARB. Annual emissions were compiled using OFFROAD2007 for the County of Orange for the year 2015. In order to determine the percentage of emissions attributable to the City, landscaping and light commercial equipment are estimated based on population (landscaping) and employment (light commercial equipment) for the City of Westminster as a percentage of Orange County. Construction equipment use is estimated based on building permit data for the City of Westminster and County of Orange from data compiled by the US Census. Daily emissions from off-road construction equipment are multiplied by 347 days per year to account for reduced/limited construction activity on weekends and holidays. Forecasts are adjusted for increases in population and employment in the City and its SOI, with the exception of construction activities. It is assumed that construction emissions for the forecast year would be similar to historical levels.

Industrial sources of emissions that require a permit from SCAQMD are not included in the City's community inventory. However, due to the 15/15 Rule, natural gas and electricity use data for industrial land uses may also be aggregated with the nonresidential land uses in the data provided by SoCalGas and SCE.[16] Life-cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore they would be speculative.

[15] SBx7-7 (2009) requires all water suppliers to reduce per capita urban water use by 20 percent by 2020, with incremental progress toward this goal (10 percent by 2015). The 2010 UWMPs contain water-use targets to meet this requirement. Effective 2016, urban retail water suppliers who do not meet the water conservation requirements established by SBx7-7 are not eligible for state water grants or loans.

[16] The 15/15 Rule was adopted by the California Public Utilities Commission in the Direct Access Proceeding (CPUC Decision 97-10-031) to protect customer confidentiality. The 15/15 rule requires that any aggregated information provided by a utility must be made up of at least 15 customers, and a single customer's load must be less than 15 percent of an assigned category. If the number of customers in the compiled data is below 15, or if a single customer's load is more than 15 percent of the total data, categories must be combined before the information is released. The Rule further requires that if the 15/15 Rule is triggered for a second time after the data have been screened once already using the 15/15 Rule, the customer be dropped from the information provided.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.4-1: Buildout of the proposed General Plan Update would result in a reduction of GHG emissions per service population and achieve the forecast Year 2035 efficiency standard. [Threshold GHG-1]

Impact Analysis: Implementation of the proposed General Plan land use plan would contribute to global climate change through direct and indirect emissions of GHG from land uses in the City of Westminster and SOI. The change in GHG emissions is based on the difference between existing land uses and those of the proposed General Plan Update. The community-wide GHG emissions inventory for the City of Westminster and its SOI at buildout in year 2035 compared to existing conditions is in Table 5.4-7, *General Plan Update Buildout 2035: City of Westminster and SOI GHG Emissions Inventory*. The buildout inventory includes reductions from federal and state measures identified in CARB's Scoping Plan, including the California Advanced Clean Cars program, Pavley fuel efficiency standards, LCFS for fuel use (transportation and off-road), and a reduction in carbon intensity from electricity use.

Table 5.4-7 General Plan Update Buildout 2035: City of Westminster and SOI GHG Emissions Inventory

Pollutant	Buildout GHG Emissions ($MTCO_2e$/Year)				
	2015	General Plan Update Buildout 2035	General Plan Update Buildout 2035 Percent of Total	Change from 2015	Percent Change from 2015
Transportation[1]	190,094	169,405	36%	-20,689	-11%
Energy – Residential[2]	97,924	126,082	27%	28,138	29%
Energy – Nonresidential[2]	76,220	131,569	28%	55,349	73%
Energy – City/Municipal	3,241	4,450	1%	1,208	37%
Waste[3]	9,027	12,392	3%	3,365	37%
Water/Wastewater[4]	14,795	18,055	4%	3,259	22%
Other – Off-road Equipment[5]	11,814	12,438	3%	624	5%
Total Community Emissions	403,116	474,392	NA	71,276	NA
Net Change in Percentage	NA	NA	NA	18%	NA
Service Population (SP)[6]	114,997	157,870	NA	N/A	N/A
Emissions per Capita ($MTCO_2e$/Year/SP)	3.5	3.0	NA	N/A	N/A
SCAQMD-Proposed Plan-Level Efficiency Standard	N/A	3.3	NA	N/A	N/A

Notes: Emissions forecast based on changes in population (residential energy), employment (nonresidential energy), or service population (City energy, waste, water/wastewater, transportation).
Emissions may not total 100% due to rounding.

1 Based on EMFAC2014 emission factors and daily per capita VMT data provided by Fehr & Peers.

2 Electricity and natural gas usage data provided by SCE and SoCalGas, respectively. The carbon intensity of the purchased electricity is from the EPA eGRID2012 data. For natural gas, the intensity factors for CO_2, CH_4, and NO_2 are from CARB's Local Governments Protocol (LGOP), version 1.1.

3 Landfill Emissions Tool version 1.3 and CalRecycle. Waste generation based on three-year average (2012–2014) waste commitment for the City of Westminster obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured in the landfill's gas capture system. The landfill gas capture efficiency is based on CARB's LGOP, version 1.1. Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Therefore, the highest CH_4 emissions from waste disposal in a given year are reported.

4 LGOP, version 1.1, based on the City's 2010 UWMP. Forecasts are adjusted for increases in population and employment and are based on the target per capita of SBx7-7.

5 OFFROAD2007. Consists of landscaping, light commercial, and construction equipment. Landscaping and light commercial equipment emissions based on population and employment for the City of Westminster proportioned to Orange County. Construction equipment emissions based on housing permit data for Orange County and the City of Westminster from the US Census. Area sources exclude emissions from fireplaces and consumer products.

6 Based on an existing SP of 114,997 people (92,168 residents and 22,829 employees); and a projected 2035 SP of 157,870 people (118,463 residents and 39,407 employees).

As shown in Table 5.4-7, buildout of the land uses accommodated under the proposed General Plan Update would result in an increase of 71,276 $MTCO_2e$ of GHG emissions (18 percent increase in GHG emissions) from existing conditions and would exceed the 3,000 $MTCO_2e$ SCAQMD bright-line screening threshold. However, on a per capita basis, buildout of the proposed General Plan Update would reduce the GHG emissions from 3.5 $MTCO_2e$/year/SP under existing conditions to 3.0 $MTCO_2e$/year/SP at full buildout and would achieve the forecast 3.3 $MTCO_2e$/year/SP efficiency standard for year 2035. The forecast efficiency standard for year 2035 is based on the long-term GHG reduction goal of Executive Order S-03-05. Therefore, GHG emissions impacts in the City and SOI are considered less than significant for long-term growth associated with the General Plan Update.

Impact 5.4-2: The proposed General Plan Update would be consistent with SCAG's 2016-2040 RTP/SCS; however, it would not achieve the long-term GHG emissions reduction target established under Executive Order S-03-05. [Threshold GHG-2]

Impact Analysis: The following discusses the consistency of the proposed General Plan Update to the CARB Scoping Plan and SCAG's 2016-2040 RTP/SCS.

CARB Scoping Plan

Since adoption of the 2008 Scoping Plan, state agencies have adopted GHG reduction programs, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide strategies to reduce GHG emissions include the LCFS and changes in the corporate average fuel economy standards (e.g., Pavley I and California Advanced Clean Cars program). The on-road transportation GHG emissions in Table 5.4-7 include state and federal reductions associated with the Pavley fuel efficiency improvements, the California Advanced Clean Car Program, and the LCFS. In addition, electricity use assumes projects in the City of Westminster and SOI would be required to adhere to the programs and regulations identified by the Scoping Plan and implemented by state, regional, and local agencies to achieve the statewide GHG reduction goals of AB 32.

The overall goal in the state is to achieve an 80 percent reduction from 1990 levels by 2050. In 2014, CARB adopted an update to the Scoping Plan. Pursuant the update, California continues to build its climate policy framework, and there is a need for local government climate action planning to adopt midterm and long-term reduction targets that are consistent with scientific assessments and the statewide goal of reducing emissions 80 percent below 1990 levels by 2050. CARB identifies that local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals (CARB 2014a). However, the 2008 Scoping Plan and the 2014 First Update to the Scoping Plan do not address statewide GHG reduction measures to achieve the long-term GHG reduction target under Executive Order S-03-05 for 2050 or the new interim GHG reduction goal for 2030 established under Executive Order B-30-15. Nonetheless, because the City's General Plan Update buildout will go beyond the near-term target established under AB 32 for year 2020, the trajectory that the City of Westminster would need to take would need to be consistent with the these long-term statewide goals .

Based on the goals of Executive Order B-30-15, which is to reduce GHG emissions to 40 percent below 1990 levels by 2030, and Executive Order S-03-05, which is to reduce GHG emissions to 80 percent below 1990 levels by 2050, the City would need to achieve a per capita efficiency target of 3.3 $MTCO_2e$/SP for post-2035. As shown in Table 5.4-7, development under the proposed General Plan Update would achieve this forecast efficiency standard and would trend the City toward the trajectory of meeting the long-term GHG reduction target set for year 2050.

The proposed General Plan Update includes various policies that would contribute to reduced GHG emissions. These policies cover areas such as implementing complete street designs (Goal M-1, Policies M-1.1 to M-1.10) and improving the pedestrian and bicycle networks and connectivity throughout the City (Goal M-2, Policies M-2.1 to M-2.8). Other General Plan Update policies focus on improving public transit infrastructure and implementing transportation demand and system management. These policies would work

together to reduce mobile-source GHG emissions. Other policies in the General Plan Update cover energy efficiency and water conservation, which would reduce GHG emissions from the energy sector. However, though these policies would contribute to reduced GHG emissions, the City would require assistance from additional federal and state programs and regulations to achieve the long-term GHG emissions goal set by Executive Order S-03-05. Due to the magnitude of emissions reductions required statewide to achieve an interim target consistent with Executive Order S-03-05, it is unlikely that the majority of jurisdictions in California would achieve an interim target without additional federal and state programs and regulations. The 2014 Scoping Plan Update assessed programs to achieve the 2020 targets for the state, but at this time, no additional GHG reductions programs have been outlined that get the state to the post-2020 targets identified in Executive Order S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advances in technology (CCST 2012). Therefore, GHG impacts in the City of Westminster from the overall growth under the proposed General Plan Update would not achieve the long-term GHG reductions goals under Executive Order S-03-05 and would cumulatively contribute to the long-term GHG emissions in the state.

SCAG's RTP/SCS

SCAG's 2016 RTP/SCS was adopted April 7, 2016. The RTP/SCS identifies multimodal transportation investments, including bus rapid transit, light rail transit, heavy rail transit, commuter rail, high-speed rail, active transportation strategies (e.g., bike ways and sidewalks), transportation demand management strategies, transportation systems management, highway improvements (interchange improvements, high-occupancy vehicle lanes, high-occupancy toll lanes), arterial improvements, goods movement strategies, aviation and airport ground access improvements, and operations and maintenance of the existing multimodal transportation system.

SCAG's RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in the 2016 RTP/SCS is to allow the southern California region to grow in more compact communities in existing urban areas; provide neighborhoods with efficient and plentiful public transit and abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands (SCAG 2016). The 2016 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, and provides forecasts for development that is generally consistent with regional-level general plan data. The projected regional development pattern—when integrated with the proposed regional transportation network identified in the RTP/SCS—would reduce per capita vehicular travel-related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region. The RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the RTP/SCS, but provides incentives for consistency for governments and developers. Table 5.4-8, *SCAG 2016 RTP/SCS Consistency*, evaluates the project in comparison to the three primary transportation-land use strategies in the RTP/SCS. As shown in the table, the General Plan Update would be consistent with these strategies. In addition, Table 5.7-1, *Consistency with SCAG's 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy Goals*, in Section 5.7, *Land Use and Planning*, provides an assessment of the proposed project's relationship to applicable RTP/SCS goals. As identified in Table 5.7-

1, the proposed General Plan Update and its policies would be consistent with the applicable RTP/SCS goals. Therefore, the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the 2016-2040 RTP/SCS. No impact would occur and no mitigation measures are required.

Table 5.4-8 SCAG 2016 RTP/SCS Consistency

SCAG Transportation-Land Use Strategies	Implementing Policies/Strategies	Consistency
Focus new growth around high quality transit areas (HQTA). The 2016 RTP/SCS overall land use pattern reinforces the trend of focusing new housing and employment in the region's HQTAs. The 2016 RTP/SCS assumes that 46 percent of new housing and 55 percent of new employment locations developed between 2012 and 2040 will be in HQTAs, which comprise only 3 percent of the total land area in the SCAG region (SCAG 2016).	Additional local policies that ensure that development in HQTAs achieve the intended reductions in VMT and GHG emissions include: ▪ Affordable housing requirements. ▪ Reduced parking requirements. ▪ Adaptive reuse of existing structures. ▪ Density bonuses tied to family housing units such as three- and four-bedroom units. ▪ Mixed-use development standards that include local serving retail. ▪ Increased Complete Streets investments around HQTAs.	**Consistent:** There are identified HQTAs in the City. The proposed land use plan includes designated mixed-use and high density residential areas within HQTAs (e.g., along Westminster Boulevard and Bolsa Avenue). Additionally, the General Plan Update includes a Complete Streets goal (Goal M-1) and supporting policies, along with active transit and transportation management goals (Goal M-2 and Goal M-5) and supporting policies that would contribute to reducing VMT and GHG emissions.
Plan for growth around livable corridors. SCAG's livable-corridors strategy seeks to revitalize commercial strips through integrated transportation and land use planning that results in increased economic activity and improved mobility options.	Additional livable corridors strategies include: ▪ Transit improvements, including dedicated lane bus rapid transit (BRT) or semidedicated BRT-light. The remaining corridors have the potential to support other features that improve bus performance (enhanced bus shelters, real-time travel information, off-bus ticketing, all door boarding, and longer distances between stops to improve speed and reliability). ▪ Active transportation improvements: Livable corridors include increased investments in complete streets to make these corridors and the intersecting arterials safe for biking and walking. ▪ Land use policies: Livable corridor strategies include the development of mixed-use retail centers at key nodes along the corridors, increasing neighborhood-oriented retail at more intersections, and zoning that allows for the replacement of underperforming auto-oriented strip retail between nodes with higher density residential and employment.	**Consistent:** The identified 3,000 miles of livable corridors are generally a subset of HQTAs, except for 154 miles that have been identified in sustainability planning grant projects. As stated above, the General Plan Update includes goals and policies that promote complete street designs and active transit improvements. Furthermore, it also contains transit policies (see Policies M-3.1 through M3.7) that would accommodate improvements to public transit options, such as improvements to bus stops, expansion of park-ride lots, and development of a fixed-transit guideway within the City. Moreover, the proposed General Land Use Plan includes designation of more mixed-used areas.
Provide more options for short trips in neighborhood mobility areas and complete communities. Neighborhood mobility areas have a high intersection density, low to moderate traffic speeds, and robust residential retail connections. These areas are suburban in nature, but can support slightly higher density in targeted locations. The land use strategies include shifting retail growth from large centralized retail strip malls to smaller	▪ Neighborhood mobility area land use strategies include pursuing local policies that encourage replacing motor vehicle use with neighborhood electric vehicle (NEV) use. NEVs are a federally designated class of passenger vehicle rated for use on roads with posted speed limits of 35 miles per hour or less. Steps needed to support NEV use include providing state and regional incentives for purchases, local planning for charging stations, designating a local network of low speed roadways, and	**Consistent:** The General Plan Update would designate more mixed-use areas in the City, which would accommodate the development of a variety of uses in proximity to each other. The General Plan Update includes policies and goals that promote active transit improvements, which would provide greater bike and pedestrian connectivity to amenities in local neighborhoods within the City

Table 5.4-8 SCAG 2016 RTP/SCS Consistency

SCAG Transportation-Land Use Strategies	Implementing Policies/Strategies	Consistency
distributed centers throughout a neighborhood mobility area.	adopting local regulations that allow smaller NEV parking stalls. ▪ Complete communities strategies include creation of mixed-use districts through a concentration of activities with housing, employment, and a mix of retail and services in close proximity to each other. Focusing a mix of land uses in strategic growth areas creates complete communities wherein most daily needs can be met within a short distance of home, providing residents with the opportunity to patronize their local area and run daily errands by walking or cycling rather than traveling by automobile.	and SOI.

Source: SCAG 2016.

5.4.4 General Plan Update Goals and Policies

Public Health and Safety Element

- Goal PHS-7: Air Quality
  - PHS-7.1: Integrated Planning.
  - PHS-7.2: GHG Emissions.
  - PHS-7.3: Regional Coordination.
  - PHS-7.4: Air Quality Monitoring.
  - PHS-7.5: Sensitive Receptors.
  - PHS-7.6: Construction Activities.
  - PHS-7.7: Airborne Pollutants and Noxious Odors.
  - PHS-7.8: Energy Efficiency

Infrastructure and Natural Resources Element

- Goal INR-5: Natural Resources and Conservation (Energy Resources)
  - INR-5.7: Energy Plan
  - INR-5.8: Energy Efficient Building and Site Design
  - INR-5.9: Community Education
  - INR-5.10: Alternative Energy and Fuel Efficient Fleet
  - INR-5.11: Green Buildings
  - INR-5.12: Reclaimed Water Systems
  - INR-5.13: Water Conservation and Supply Shortage

- INR-5.14: Efficient Use
- INR-5.15: Landscaping

- Goal INR-3: Solid Waste and Recycling
  - INR-3.1: Compliance with State Legislation
  - INR-3.2: Diversion
  - INR-3.3: Landfill Capacity
  - INR-3.4: Waste Service Performance Collection Facilities
  - INR-3.5: Municipal Waste
  - INR-3.6: Fees and Funding
  - INR-3.7: Special Waste
  - INR-3.8: Organic Waste
  - INR-3.9: Public Education

Mobility Element

- Goal M-1: Complete Streets
  - Policy M-1.1: Priority Travel Modes
  - Policy M-1.2: Agency Coordination
  - Policy M-1.3: Level of Service
  - Policy M-1.4: Multi-modal Level of Service
  - Policy M-1.6: Funding
  - Policy M-1.7: Future Improvements
  - Policy M-1.8: Residential Streets
  - Policy M-1.9: Traffic Calming Tools
  - Policy M-1.10: Truck Routes

- Goal M-2: Active Transit
  - Policy M-2.1: Facility Enhancement
  - Policy M-2.2: Street Retrofits
  - Policy M-2.3: Development Projects
  - Policy M-2.4: Agency Cooperation
  - Policy M-2.5: Safe Routes to School
  - Policy M-2.6: Accessibility Standards
  - Policy M-2.7: Regional Bike Routes
  - Policy M-2.8: Intersection and Signal Enhancements

- Goal M-3: Transit
  - Policy M-3.1: Local Service
  - Policy M-3.2: Regional Service
  - Policy M-3.3: First-Mile/Last-Mile
  - Policy M-3.4: Park-Ride Lots
  - Policy M-3.5: Bus Stops
  - Policy M-3.6: Funding
  - Policy M-3.7: Fixed-Transit Guideway

- Goal M-5: Transportation Management
  - Policy M-5.1: Transportation Demand Management
  - Policy M-5.2: Transportation System Management

Parks and Recreation Element

- Goal PR-1: Park Facilities and Open Space
  - Policy PR-1.9: Park Design

Implementation Actions

Goal PHS-7: Air Quality

- PHS_IA-51: Transportation Network
- PHS_IA-52: GHG Emissions
- PHS_IA-53: VMT Reduction Targets
- PHS_IA-54: Public Education
- PHS_IA-55: Regional Coordination
- PHS_IA-56: Demographic Information
- PHS_IA-57: South Coast AQMD
- PHS_IA-58: Sensitive Land Uses
- PHS_IA-59: Building Regulations
- PHS_IA-60: Construction Waste Management Plan
- PHS_IA-61: Energy Efficiency
- PHS_IA-62: Recognition Program
- PHS_IA-63: Solar Analysis
- PHS_IA-64: Building Audits

Goal INR-5: Natural Resources and Conservation

- INR_IA-31: State Energy Requirements
- INR_IA-32: Energy Conservation Outreach
- INR_IA-33: Informational Packets
- INR_IA-34: Energy Plan
- INR_IA-35: Alternative Fuel Vehicles
- INR_IA-36: Urban Water Management Plan
- INR_IA-37: Municipal Code
- INR_IA-38: Water Division Public Outreach

Goal INR-3: Solid Waste and Recycling

- INR_IA-15: AB 939
- INR_IA-16: Disposal Events
- INR_IA-17: Service Provider Coordination
- INR_IA-18: Municipal Waste
- INR_IA-19: Waster Master Plan
- INR_IA-20: Organic Waste

Goal M-1: Complete Streets

- M_IA-1: Street Network Buildout
- M_IA-2: Complete Street Exemptions
- M_IA-3: Traffic Count Program
- M_IA-4: Road Diets
- M_IA-5: Capital Improvement Program
- M_IA-6: Standard Plans and Details
- M_IA-7: Regional Planning Forums
- M_IA-8: Caltrans
- M_IA-9: Neighboring Jurisdictions
- M_IA-10: Impact Studies
- M_IA-11: Intersections
- M_IA-12: Traffic Impact and Environmental Review
- M_IA-13: Financing
- M_IA-14: Transportation Impact Fees
- M_IA-15: Local Assessment Districts

- M_IA-16: Dedications
- M_IA-17: Traffic Calming
- M_IA-18: Truck Routes
- M_IA-19: Traffic Index Calculations

Goal M-2: Active Transportation

- M_IA-20: Active Transportation Plan
- M_IA-21: Active Transportation Plan Improvements
- M_IA-22: Site Plan Review
- M_IA-23: OCTA
- M_IA-24: Safe Routes
- M_IA-25: Accessibility

Goal M-3: Transit

- M_IA-26: Local Service
- M_IA-27: Regional Collaboration
- M_IA-28: First/Last Mile
- M_IA-29: Park-and-Ride Lots
- M_IA-30: Transit Funding
- M_IA-31: Fixed-Transit Guideway

Goal M-5: Transportation Management

- M_IA-35: Parking Code
- M_IA-36: Parking Reductions
- M_IA-37: TDM Plans
- M_IA-38: Traffic Signal-Interconnect Systems
- M_IA-39: Design Solutions
- M_IA-40: Signal Coordination Plans

Goal PR-1: Park Facilities and Open Space

- PR_IA-6: Public Outreach
- PR_IA-7: Volunteer Opportunities
- PR_IA-8: Education

5.4.5 Existing Regulations and Standard Conditions

5.4.5.1 STATE

- California Global Warming Solutions Act (AB 32)
- Sustainable Communities and Climate Protection Act (SB 375)
- Greenhouse Gas Emission Reduction Targets (Executive Order S-03-05)
- Clean Car Standards – Pavley (AB 1493)
- Renewable Portfolio Standards (SB 1078)
- California Integrated Waste Management Act of 1989 (AB 939)
- California Mandatory Commercial Recycling Law (AB 341)
- California Advanced Clean Cars CARB (Title 13 CCR)
- Low-Emission Vehicle Program – LEV III (Title 13 CCR)
- Heavy-Duty Vehicle Greenhouse Gas Emissions Reduction Measure (Title 17 CCR)
- Low Carbon Fuel Standard (Title 17 CCR)
- California Water Conservation in Landscaping Act of 2006 (AB 1881)
- California Water Conservation Act of 2009 (SBX7-7)
- Statewide Retail Provider Emissions Performance Standards (SB 1368).
- Airborne Toxics Control Measure to Limit School Bus Idling and Idling at Schools (13 CCR 2480)
- Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling (13 CCR 2485)
- In-Use Off-Road Diesel Idling Restriction (13 CCR 2449)
- Building Energy Efficiency Standards (Title 24, Part 6)
- California Green Building Code (Title 24, Part 11)
- Appliance Energy Efficiency Standards (Title 20)

5.4.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impact would be less than significant: 5.4-1.

Without mitigation, the following impacts would be potentially significant**:**

- **Impact 5.4-2** The proposed General Plan Update would be consistent with SCAG's 2016-2040 RTP/SCS; however, it would not achieve the long-term GHG emissions reduction target established under Executive Order S-03-05.

5.4.7 Mitigation Measures

Impact 5.4-2

General Plan Update policies described under Section 5.4.4, *General Plan Update Goals and Policies*, and their associated Implementation Actions (see General Plan Implementation Plan), would ensure that the City continues on a trajectory that aligns with the long-term state GHG reduction goals of Executive Order S-03-05.

5.4.8 Level of Significance After Mitigation

Impact 5.4-2

General Plan Update policies described under Section 5.4.4, *General Plan Update Goals and Policies*, and their associated Implementation Actions (see General Plan Implementation Plan) would ensure that the City continues to implement actions that reduce GHG emissions from buildout of the General Plan Update. However, additional federal and state measures would be necessary to reduce GHG emissions to meet the long-term GHG reduction goals under Executive Order S-03-05, which identified a goal to reduce GHG emissions to 80 percent of 1990 levels by 2050. At this time, there is no plan past 2020 that achieves the long-term GHG reduction goal established under S-03-05. As identified by the California Council on Science and Technology, the state cannot meet the 2050 goal without major advancements in technology (CCST 2012). Since no additional federal or state measures are currently available that would ensure that the City of Westminster could achieve an interim post-2020 target, Impact 5.4-2 would remain ***significant and unavoidable***.

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5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

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