
5.7 GREENHOUSE GAS EMISSIONS AND ENERGY

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This section examines the effects of implementation of the City of Elk Grove General Plan Update Project (Project) on climate change in the Planning Area and the potential for conflicts with greenhouse gas (GHG) reduction planning efforts. This section was also prepared in accordance with Section 15126 and Appendix F of the State California Environmental Quality Act (CEQA) Guidelines. Appendix F requires that Environmental Impact Reports (EIRs) include a discussion of the potential energy impacts of projects, with emphasis on considering whether implementing a project would result in inefficient, wasteful, and unnecessary consumption of energy. This section discusses the energy impacts of implementing the project.

5.7.1 EXISTING CONDITIONS

INTRODUCTION TO GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused (i.e., anthropogenic) emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other climate forcings such as the release of smoke, soot, and methane from natural processes (e.g., permafrost melt, forest fires) (IPCC 2014).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the lifetime of any GHG molecule is dependent on multiple variables and cannot be determined with any certainty, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent is estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere (IPCC 2013, p. 467).

The quantity of GHGs in the atmosphere that ultimately result in climate change is not precisely known but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

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The following compounds are GHGs subject to control under California State law (CARB 2014b; EPA 2015a).

- Carbon dioxide (CO₂). Carbon dioxide is produced through the burning of fossil fuels, solid waste, and wood products, and is generated through certain chemical reactions, such as cement manufacturing.
- Methane (CH₄). Methane is produced during the production and transportation of fossil fuels, such as coal, natural gas, and oil. It also results from organic decay in landfills, livestock, and other agricultural processes.
- Nitrous oxide (N₂O). Nitrous oxide is generated during agricultural and industrial activities, combustion of fossil fuels, and decay of solid waste.
- Hydrofluorocarbons (HFCs). HFCs are used as refrigerants in both stationary refrigeration and mobile air conditioning.
- Perfluorocarbons (PFCs). Perfluorocarbons are created as a byproduct of aluminum production and semiconductor manufacturing.
- Sulfur hexafluoride (SF₆). Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity.

CO₂ is the most widely emitted GHG and is the reference gas for determining the global warming potential (GWP) of other GHGs. GHG emissions are typically converted into the common unit of measurement of metric tons of carbon dioxide equivalent (MTCO₂e). As shown in **Table 5.7-1**, gases such as methane and N₂O are more potent than CO₂ at trapping heat and have higher GWP.

The Intergovernmental Panel on Climate Change (IPCC) prepares comprehensive global assessment reports about the state of scientific, technical, and socioeconomic knowledge on climate change, its causes, potential impacts, and response strategies. The IPCC periodically updates GWPs to reflect the latest scientific understanding of the behavior and warming potential of GHGs in the atmosphere (IPCC 2014). As described in further detail below, the City of Elk Grove Climate Action Plan (CAP) includes a 2005 GHG inventory that relies on the 2nd Assessment GWPs. The City revised the 2005 GHG inventory to account for newer, 5th Assessment GWPs. Updates to GWPs provide consistency with current practices and a newer, 2013 inventory of GHG emissions in the Planning Area. More information on the 2005 and 2013 GHG inventories follows below in this section.

TABLE 5.7-1
COMPARISON OF GLOBAL WARMING POTENTIALS, 2ND ASSESSMENT REPORT AND 5TH ASSESSMENT REPORT

| Pollutant | IPCC 2nd Assessment Report GWP | IPCC 5th Assessment Report GWP |
|-----------------------------------|--------------------------------|--------------------------------|
| Carbon Dioxide (CO ₂) | 1 | 1 |
| Methane (CH ₄) | 21 | 28 |
| Nitrous Oxide (N ₂ O) | 310 | 265 |

Source: IPCC 2013

STATEWIDE GREENHOUSE GAS EMISSIONS INVENTORY

The California Air Resources Board (CARB) prepares an annual GHG inventory for all activities occurring within the State. The sectors in the statewide inventory and forecast are similar, although not identical, to the U.S. Community Protocol sectors used in the GHG inventory for the City. CARB prepared a statewide inventory for 2005, as well as a recent inventory for 2013 (**Table 5.7-2**). Emissions in the statewide inventories are measured in millions of MTCO_{2e} (MMTCO_{2e}). In 2013, statewide emissions had declined approximately 5.9 percent from 2005 levels (CARB 2015).

**TABLE 5.7-2
CALIFORNIA GREENHOUSE GAS EMISSIONS, 2005 AND 2013 (MMTCO_{2e})**

| Category | 2005 Emissions (MMTCO _{2e}) | 2013 Emissions (MMTCO _{2e}) | Percentage Change (2005–2013) |
|----------------------------|---------------------------------------|---------------------------------------|-------------------------------|
| Transportation | 186.1 | 169.02 | -10.5% |
| Industrial | 92.3 | 92.68 | -3.5% |
| Electric Power | 109.0 | 90.45 | -16.1% |
| Commercial and Residential | 41.0 | 43.54 | 3.1% |
| Agriculture | 32.6 | 36.21 | 3.2% |
| High GWP | 13.3 | 18.50 | 78.9% |
| Recycling and Waste | 7.0 | 8.87 | 11.9% |
| Total | 482.5 | 459.28 | -5.9% |

Source: CARB 2011, 2015 Planning Area Community-Wide Greenhouse Gas Emissions Inventories

Note: MMTCO_{2e} = million metric tons of carbon dioxide equivalent

This section presents an analysis of GHG emissions for the entire Planning Area, including both areas within jurisdictional City limits and the study areas. Although data is generally available to calculate GHG emissions associated with activity in the jurisdictional boundary of the City, comparable data is not available for each of the City’s study areas. Instead, the study areas are local planning designations that do not correlate to the types of data outputs from key sources for the GHG inventory. Instead, local data is reported for different jurisdictional entities. Therefore, alternate methods were used to develop a plan-level GHG emissions inventory for the study areas that is comparable to the GHG inventory for the City. The GHG inventories for the City limits and each study area estimate GHG emissions using two different approaches:

- The inventory of GHG emissions in City limits reflects (1) actual activity data within the City limits as reported by utilities and State agencies, and (2) modeled data for activity within the City limits, based on regional travel models and proxy indicators such as acreage of agricultural activity or proportion of countywide permit activity and dwelling units in the City.
- The inventory of GHG emissions in the study areas reflects (1) average rates of GHG emissions generation within the City by land use type, and (2) modeled GHG emissions based on existing land uses in the study areas, including the number of current dwelling units, square footage of nonresidential space, and acreage of agricultural land uses.

The following sections first present results for GHG emissions associated with City limits, followed by a summary of the modeled GHG emissions estimates for the study areas. Additional information on the approach to calculate and model GHG emissions is provided in **Appendix D**.

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OVERVIEW

The GHG inventories for the City are based on activity data for day-to-day occurrences in the community for the calendar years 2005 and 2013. Activity data measures actions in the City that cause GHG emissions, such as energy use, waste disposal, and vehicle miles traveled. In some instances, the GHG emissions are generated within the Planning Area itself. For instance, driving a gasoline-powered car in the City will create direct GHG emissions within the City limits. In other cases, GHG emissions will physically occur elsewhere, but are included in this inventory because actions within the City were responsible for causing or triggering those GHG emissions. One key example is the use of electricity in the City, which causes GHG emissions to be generated from power plants that are located outside City limits in other communities. GHG inventories use emissions factors to convert activity data to total GHG emissions. Emission factors describe the amount of GHGs emitted per unit of activity data. Service providers such as utility companies, scientific research documents, and State and federal agencies all provide emissions factors for various activities.

The City conducted the 2005 baseline year community-wide GHG inventory through a regional effort, the Sacramento Area Green Partnership, in 2009 (2005 data were the most complete, current data available). The baseline inventory estimates municipal and community-wide GHG emissions caused by activities in 2005, including transportation, waste, water, and energy-related activities. The inventory established a baseline against which future changes in GHG emissions can be measured and provides an understanding of major sources of GHG emissions in the City and the region.

Since 2009, the City has revised the 2005 community-wide inventory twice. The first round of revisions to the 2005 inventory occurred during development of the CAP for new data and methods. City Council adopted the revised 2005 inventory as part of the CAP in 2013. The second round of revisions to the 2005 inventory occurred in 2015 for the General Plan Update, as documented in this report. Updates in 2015 incorporated new data, GHG accounting methods, and up-to-date protocols. Revisions allow for comparison of the 2005 baseline inventory to the 2013 inventory, supporting identification and analysis of progress since 2005.

METHOD

Consistent with guidance from the Governor's Office of Planning and Research (OPR), the 2005 and 2013 inventories use the 2012 U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, commonly known as the U.S. Community Protocol (ICLEI 2012). This common protocol ensures that the methods used in the 2005 and 2013 inventories are consistent, allowing for an effective comparison.

The 2005 inventory used GWPs from the IPCC's 2nd Assessment Report, which was published in 1995. Current inventories use GWPs from the IPCC's 5th Assessment Report, published in 2014, which demonstrates changes to expected emissions from methane and nitrous oxide (**Table 5.7-1**). The 2005 inventory was updated to use GWPs from the 5th Assessment Report, to ensure that emissions could be accurately compared to findings in the 2013 inventory. The updated 2005 inventory included emissions from off-road equipment, making the 2005 inventory more complete and supporting comparisons to activity in the unincorporated Planning Areas. Updates also included refinement to the electricity use associated with water and wastewater based on revised data from the Sacramento Municipal Utility District (SMUD). The analysis of transportation emissions was revised to reflect more accurate countywide vehicle fuel use data from CARB. Based on this new data, staff made minor adjustments to the 2005 inventory. Additional details are available in **Appendix D**.

GREENHOUSE GAS EMISSIONS SOURCES IN ELK GROVE

The 2005 and 2013 inventories estimate GHG emissions from the following types of activities, also known as sectors, within the City limits. These sectors capture GHG emissions resulting from various activities in the community, whether those GHG emissions result directly where the activity occurs, or indirectly at a different location. For instance, the combustion of vehicle fuel within the community results in GHG emissions emitted from the tailpipe of vehicles traveling in the community, whereas local electricity demand may be supplied by a fossil-fuel power plant outside of the community. Both types of GHG emissions are captured in the City's GHG inventories. These inventories include the five required reporting sectors identified by the U.S. Community Protocol (ICLEI 2012), in addition to optional sectors that fall under the jurisdictional control of the City:

- **Residential built environment:** Electricity and natural gas used in residential settings.
- **Nonresidential built environment:** Electricity and natural gas used in nonresidential settings.
- **Transportation:** On-road vehicle usage for trips that begin and/or end in the Planning Area.
- **Off-road equipment:** The use of equipment and off-road vehicles in the Planning Area, such as landscaping and construction equipment.
- **Solid waste:** Materials thrown away in landfills in the inventory year.
- **Landfills:** Emissions from the decomposition of materials thrown away in previous years in landfills inside the Planning Area.
- **Water and wastewater:** Energy used to treat and pump potable water used, and wastewater generated, in City limits, and emissions from the processing of wastewater.
- **Agriculture:** Emissions from fertilizer use, livestock operations, and agricultural equipment.

A comparison of GHG emissions for activities occurring within City limits in 2005 and 2013 is shown in **Table 5.7-3**. The City's GHG emissions increased by approximately 13 percent from 2005 to 2013. The overall distribution of GHG emissions by sector remained relatively constant from 2005 and 2013. The on-road transportation sector was the largest contributor of GHG emissions in both 2005 and 2013, contributing 348,370 MTCO₂e and 430,340 MTCO₂e, respectively. In 2013, the transportation sector comprised 47.0 percent of total community-wide emissions in City limits. Following the transportation sector, the residential sector contributed 25 percent of total GHG emissions in the City limits (231,400 MTCO₂e), with just a 3 percent decline from total contribution in 2005. Nonresidential GHG emissions, the third largest GHG emissions sector in both 2005 and 2013, slightly increased in total contribution, growing from 12.8 percent of total emissions in City limits in 2005 to 14.2 percent of total emissions in City limits in 2013. The off-road equipment sector generated 10.2 percent of total emissions in 2013 (93,340 MTCO₂e), while the solid waste sector contributed 2.6 percent of total emissions in 2013 (23,720 MTCO₂e). The three remaining sectors contributed less than 1 percent of total GHG emissions, consisting of the water and wastewater sector (2,860 MTCO₂e, or 0.3 percent of total emissions), landfills in City limits (2,540 MTCO₂e, or 0.3 percent of total emissions), and agriculture (1,020 MTCO₂e, or 0.1 percent of total emissions).

The overall 12 percent increase in GHG emissions from 2005 to 2013 is attributed to several notable changes.

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- GHG emissions from the nonresidential built environment sector increased 26 percent, driven largely by increased jobs and economic activity in the community that caused a similar growth in nonresidential natural gas use.
- Similarly, emissions from transportation increased by 24 percent because of increased economic activity and population growth.
- Agricultural GHG emissions declined by 81 percent, reflecting a decline in land in active agricultural uses because of urbanization of rural land. This development also dovetails with the increases in nonresidential and transportation emissions described above. Changes in the agriculture sector were the largest proportional change in any sector since 2005, reflecting the overall conversion of agricultural land to other uses within the City limits.
- The 2005 inventory excluded fugitive emissions from wastewater, which have been included in the 2013 inventory, contributing to the 134 percent increase in emission for the water and wastewater sector.
- Even with an overall increase in GHG emissions throughout the region, emissions from solid waste disposal declined by 35 percent from 2005 to 2013, equivalent to a reduction of 12,660 MTCO_{2e}. This notable reduction in solid waste occurred even with an increase in the City's service population (population + employment). While GHG emissions from solid waste declined by 35 percent, the City's service population increased by approximately 24 percent during the same time period. Similarly, per capita waste generation in the City from 2005 to 2013 declined by 49 percent. These declines in waste generation are consistent with regional reductions in waste disposal, despite the State's overall increase in waste emissions for the same time period (see **Table 5.7-2**).
- The decline in landfill GHG emissions reflects the nature of waste decomposition. This sector captures GHG emissions from waste-in-place in the closed Dixon Pit and Elk Grove landfills in the City. Waste disposed and buried at these landfills continues to emit methane, a potent GHG, during decomposition. The decline in GHG emissions from landfills does not reflect a change in activity data or waste disposal, but rather the declining rate of GHG emissions during the decomposition process.

TABLE 5.7-3
COMMUNITYWIDE GREENHOUSE GHG EMISSIONS BY SECTOR IN ELK GROVE CITY LIMITS, 2005–2013

| Sector | 2005 MTCO _{2e} | Percentage of Total | 2013 MTCO _{2e} | Percentage of Total | Percentage Change, 2005–2013 |
|----------------------------------|-------------------------|---------------------|-------------------------|---------------------|------------------------------|
| Residential built environment | 225,190 | 27.9% | 231,400 | 25.3% | + 3% |
| Nonresidential built environment | 103,170 | 12.8% | 129,860 | 14.2% | + 26% |
| Transportation | 348,370 | 43.1% | 430,340 | 47.0% | + 24% |
| Off-road equipment | 83,800 | 10.4% | 93,340 | 10.2% | + 11% |
| Solid waste | 36,380 | 4.5% | 23,720 | 2.6% | -35% |
| Landfills | 2,980 | 0.4% | 2,540 | 0.3% | -15% |

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| Sector | 2005 MTCO _{2e} | Percentage of Total | 2013 MTCO _{2e} | Percentage of Total | Percentage Change, 2005–2013 |
|----------------------|-------------------------|---------------------|-------------------------|---------------------|------------------------------|
| Water and wastewater | 3,070 | 0.4% | 7,177 | 0.8% | + 134% |
| Agriculture | 5,450 | 0.7% | 1,020 | 0.1% | -81% |
| Total | 808,410 | 100% | 919,407 | 100% | + 13% |

Source: City of Elk Grove 2016. GHG emissions estimates for 2005 and 2013 rely on numerous methods, protocols, and data sources. A summary of key data sources and methods is included in both the Climate Change section of the Existing Conditions Report and **Appendix D** of this Draft EIR.

Note: MTCO_{2e} = metric tons of carbon dioxide equivalent

INTRODUCTION TO ENERGY

Energy Service in the Planning Area

Electric services in the City are provided by the Sacramento Municipal Utility District (SMUD) and natural gas services by the Pacific Gas and Electric Company (PG&E). These utility providers would continue to serve the Planning Area.

Energy Types and Sources

California relies on a regional power system composed of a diverse mix of natural gas, petroleum, renewable, hydroelectric, and nuclear generation resources. One-third of energy commodities consumed in California is natural gas. In 2014, approximately 35 percent of natural gas consumed was used to generate electricity. Residential land uses represented approximately 17 percent of California's natural gas consumption with the balance consumed by the industrial, resource extraction, and commercial sectors (EIA 2014).

Power plants in California meet approximately 68 percent of the in-state electricity demand, hydroelectric power from the Pacific Northwest provides another 12 percent, and power plants in the southwestern United States provide 20 percent (EIA 2014). The contribution of in- and out-of-state power plants depends on, among other factors, the precipitation that occurred in the previous year and the corresponding amount of hydroelectric power that is available. PG&E is the primary electricity supplier in Sacramento County. As of 2016, PG&E was powered by 33 percent renewables, including biomass, geothermal, small hydroelectric, solar, and wind (CPUC 2018).

Alternative Fuels

A variety of alternatives are used to reduce demand for petroleum-based fuel and their use is encouraged through various statewide regulations and plans (e.g., Low Carbon Fuel Standard, Assembly Bill [AB] 32 Scoping Plan). Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including the following:

- biodiesel
- electricity
- ethanol (E-10 and E-85)
- hydrogen
- natural gas (methane in the form of compressed and liquefied natural gas)

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- propane
- renewable diesel (including biomass-to-liquid)
- synthetic fuels
- gas-to-liquid and coal-to-liquid fuels

California has a growing number of alternative fuel vehicles through the joint efforts of the California Energy Commission (CEC), California Air Resources Board, local air districts, federal government, transit agencies, utilities, and other public and private entities. As of February 2018, Sacramento County contained more than 197 alternative fueling stations (Alternative Fuels Data Center 2018).

Commercial and Residential Energy Use

Homes built between 2000 and 2015 use 14 percent less energy per square foot than homes built in the 1980s, and 40 percent less energy per square foot than homes built before 1950. However, in some cases, the increased size of newer homes has offset these efficiency improvements. Primary energy consumption in the residential sector totaled 21 quadrillion British thermal units (BTUs) in 2009 (the latest year in EIA's Residential Energy Consumption Survey was completed), equal to 54 percent of consumption in the buildings sector and 22 percent of total primary energy consumption in the United States. Overall residential energy increased by 24 percent from 1990 to 2009. However, because of projected improvements in building and appliance efficiency, the EIA 2017 Annual Energy Outlook forecast a 5 percent increase in energy consumption from 2016 to 2040 (EIA 2017).

Energy consumption in commercial buildings represents just under one-fifth of U.S. energy consumption with office space, retail, and educational facilities representing about half of commercial sector energy consumption. In aggregate, commercial buildings consumed 46 percent of the building energy consumption and approximately 19 percent of energy consumption in the United States. The residential sector consumed approximately 22 percent of energy consumption (US Department of Energy 2012).

Energy Use for Transportation

On-road vehicles use about 90 percent of the petroleum consumed in California. Caltrans (2008) projected that 782 million gallons of gasoline and diesel were consumed in Sacramento County in 2015, which represents an increase of approximately 88 million gallons of fuel from 2010 levels.

5.7.2 REGULATORY FRAMEWORK

This section details federal, State, and local plans, policies, regulations, and laws that pertain to local GHG emissions and energy consumption in the Planning Area. These existing regulations provide a framework for addressing current and future emissions and energy consumption in the General Plan and will inform the goals and policies that are adopted.

Energy conservation is embodied in many federal, State, and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., EPA's EnergyStar Program) and transportation (e.g., fuel efficiency standards). At the State level, Title 24 of the California Code of Regulations sets forth energy standards for buildings. Further, the State provides rebates/tax credits for installation of renewable energy systems and offers the Flex Your Power program, which promotes conservation in multiple areas.

FEDERAL

Clean Air Act

In 2007, the United States Supreme Court held that EPA has the statutory authority to regulate GHG emissions from the transportation sector. After the court decision, President Bush signed Executive Order 13432 directing the EPA, along with the Departments of Transportation (DOT), Department of Energy (DOE), and Department of Agriculture (DOA), to initiate a regulatory process that responds to the Supreme Court's decision.

On July 11, 2008, the EPA issued an Advance Notice of Proposed Rulemaking on regulating GHGs under the Clean Air Act (CAA). The Advance Notice of Proposed Rulemaking reviews the various CAA provisions that may be applicable to the regulation of GHGs and presents potential regulatory approaches and technologies for reducing GHG emissions and seeks further public comment on the regulation of GHG emissions under the CAA. In September 2009, the EPA issued a final rule on mandatory GHG reporting, requiring that GHG emissions from large sources and suppliers of GHGs, including facilities that emit at least 25,000 MTCO_{2e} each year, report these emissions annually to the EPA (EPA 2017).

While the EPA and the federal government have established the CAA, California has the authority to implement the federal regulations. Additionally, the State has established laws and policies that go beyond the statutes of the CAA to further promote healthy air in California. CARB enforces California's implementation of the CAA as an extension of its statewide rulemaking.

Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act

In 2009, the EPA Administrator issued a final endangerment finding and final cause finding for light duty vehicles under Section 202(a) of the CAA. The findings include:

- Endangerment finding: The EPA found that current and projected concentrations of the six GHG emissions in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or contribute finding: The EPA found that the combined emissions of these greenhouse gases from new motor vehicles contribute to the GHG pollution which threatens public health and welfare.

These findings do not impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the EPA's proposed GHG emissions standards for light-duty vehicles, which were jointly proposed by the EPA and the DOT's National Highway Traffic Safety Administration (NHTSA).

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks and Corporate Average Fuel Economy Standards

In October 2012, the EPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the Department of Transportation, issued final rules to further reduce GHG emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 FR 62624). The NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase

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fuel economy to the equivalent of 54.5 miles per gallon (mpg) limiting vehicle emissions to 163 grams of CO₂ per mile for the fleet of cars and light-duty trucks by model year 2025 (77 FR 62630).

In January 2017, EPA Administrator Gina McCarthy signed her determination to maintain the current GHG emissions standards for model year 2022–2025 vehicles. However, on April 2, 2018, the new EPA Administrator, Scott Pruitt, and Department of Transportation Secretary Elaine Chao announced a Final Determination that the current standards are not appropriate and should be revised. It is not yet known when these revisions are anticipated to occur (EPA 2018).

US Environmental Protection Agency SmartWay Program

SmartWay is an EPA program that reduces transportation-related emissions by creating incentives to improve supply chain fuel efficiency. The program has five primary components: (1) SmartWay Transport Partnership, a partnership in which freight carriers and shippers commit to benchmark operations, track fuel consumption and improve performance annually; (2) SmartWay Technology Program, a testing, verification, and designation program to help freight companies identify equipment, technologies, and strategies that save fuel and lower emissions; (3) SmartWay Finance Program, a competitive grant program that makes investing in fuel-saving equipment easier for freight carriers; (4) SmartWay Vehicles, a program that ranks light-duty cars and small trucks and identifies superior environmental performers with the SmartWay logo; and (5) SmartWay International Interests, which provides guidance and resources for countries seeking to develop freight sustainability programs modeled after SmartWay.

Energy Policy and Conservation Act of CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Under this act, the National Highway Traffic and Safety Administration, part of the US Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. A CAFE value for each manufacturer is calculated by the EPA based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, the DOT is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years.

Energy Policy Act (1992 and 2005) and Energy Independence and Security Act of 2007

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles in large, centrally-fueled fleets in metropolitan areas. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce the United States' dependence on oil. It increased the supply of alternative fuel

sources by setting a mandatory renewable fuel standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly fivefold increase over current levels and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent. By addressing renewable fuels and CAFE standards, the Energy Independence and Security Act will build on progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the twenty-first century.

STATE

California has adopted various administrative initiatives and enacted a variety of legislation relating to climate change, much of which sets aggressive goals for GHG emissions reductions within the State. However, none of this legislation provides definitive direction regarding the treatment of climate change in the environmental review documents prepared under CEQA. In particular, the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or thresholds of significance and do not specify greenhouse gas reduction mitigation measures. Instead, the CEQA amendments continue to rely on lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below. In addition, no State agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating any significant effects in CEQA documents. Thus, lead agencies exercise their discretion determining how to analyze greenhouse gases.

The discussion below provides a brief overview of CARB and Office of Planning and Research (OPR) documents and of the primary legislation relating to climate change that may affect the emissions associated with the proposed Project. It begins with an overview of the primary regulatory acts that have driven GHG regulation and analysis in California.

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emission targets for the State. Specifically, statewide emissions are to be reduced to 2000 levels by 2010, 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

This executive order was the subject of a California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments (SANDAG)* (November 24, 2014) 231 Cal.App.4th 1056, which was reviewed by the California Supreme Court in January 2017. The Supreme Court decided a singular question in the case, which was released on July 13, 2017. The California Supreme Court ruled that SANDAG did not abuse its discretion by declining "to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal" *Cleveland National Forest Foundation v. San Diego Association of Governments*, 3 Cal 5th 497, 517 (2017).

In addition to concluding that an EIR need not use this executive order's goal for determining significance, the Court described several principles relevant to CEQA review of GHG impacts, including: (1) EIRs should "reasonably evaluate" the "long-range GHG emission impacts for the year 2050;" (2) the 2050 target is "grounded in sound science" in that it is "based on the scientifically supported level of emissions reduction needed to avoid significant disruption of the climate;" (3) in the case of the SANDAG plan, the increase in long-range GHG emissions by 2050,

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which would be substantially greater than 2010 levels, was appropriately determined to be significant and unavoidable; (4) the reasoning that a project's role in achieving a long-range emission reduction target is "likely small" is not valid for rejecting a target; and (5) "as more and better data become available," analysis of proposed plan impacts will likely improve, such that "CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." The Court also ruled that "an EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect." The Court also recognized that the 40 percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emission 80 percent below 1990 levels by the year 2050." Senate Bill (SB) 32 has since defined the 2030 goal in statute (discussed below).

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that "(a) the statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed; (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020; (c) The [California Air Resources Board (CARB)] shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Section 38551]

Senate Bill 375 of 2008

SB 375, signed by Governor Schwarzenegger in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. The Sacramento Area Council of Governments (SACOG) serves as the MPO for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands located in the Lake Tahoe Basin. The project site is in Sacramento County. SACOG adopted its Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) 2035 in 2012, and completed an update adopted on February 18, 2016. SACOG was tasked by CARB to achieve a 7 percent per capita reduction compared to 2012 emissions by 2020 and a 16 percent per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its SCS (CARB 2013). In June 2017, CARB released the proposed Target Update for the SB 375 targets tasking SACOG to achieve a 7 percent and a 19 percent per capita reduction by 2020 and 2035, respectively (CARB 2017a). At the time of writing this Draft EIR, the Target Update has not been approved by CARB.

Cap-and-Trade Regulatory Program

In 2011, CARB adopted the cap-and-trade regulation and created the cap-and-trade program. The program covers sources of GHG emissions that emit more than 25,000 MT CO₂e per year in the State such as refineries, power plants, industrial facilities, and transportation fuels. The cap-and-trade program includes an enforceable statewide emissions cap that declines approximately 3 percent annually. CARB distributes allowances, which are tradable permits, equal to the emissions allowed

under the cap. Sources that reduce emissions more than their limits can auction carbon allowances to other covered entities through the cap-and-trade market. Sources subject to the cap are required to surrender allowances and offsets equal to their emissions at the end of each compliance period (CARB 2012). The cap-and-trade program took effect in early 2012 with the enforceable compliance obligation beginning January 1, 2013. The cap-and-trade program was initially slated to sunset in 2020, but the passage of SB 398 in 2017 extended the program through 2030.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the State. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2016).

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011 and Senate Bill 350, the Clean Energy and Pollution Reduction Act of 2015

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011–2013 compliance period, at least 65 percent for the 2014–2016 compliance period, and at least 75 percent for 2016 and beyond. In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable resources by 2030.

Executive Order B-30-15

On April 20, 2015 Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 sets the next interim step in the State's continuing efforts to pursue the long-term target expressed under Executive Order S-3-05 to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the United States to limit global warming below

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2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 of 2016

In August 2016, Governor Brown signed SB 32, which serves to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

California Building Efficiency Standards of 2016 (Title 24, Part 6)

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by the California Energy Commission (CEC) in Title 24, Part 6 of the California Code of Regulations. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2017 must follow the 2016 standards (CEC 2015). Energy efficient buildings require less electricity and natural gas; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Through other statutes and regulations, this 50 percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally-safe transformation and land disposal.

In 2011, AB 341 modified the California Integrated Waste Management Act and directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The resulting Mandatory Commercial Recycling Regulation (2012) requires that on and after July 1, 2012, certain businesses that generate four cubic yards or more of commercial solid waste per week shall arrange recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a statewide recycling goal of 75 percent; the 50 percent disposal reduction mandate still applies for cities and counties under AB 939, the Integrated Waste Management Act.

Low Carbon Fuel Standard

In January 2007, Executive Order S-01-07 established a Low Carbon Fuel Standard (LCFS). The Order calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that a LCFS for transportation fuels be established for California. The LCFS applies to all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction

equipment. The LCFS is measured on a full fuels cycle basis and may be met through market-based methods by which providers exceeding the performance required by an LCFS receive credits that may be applied to future obligations or traded to Providers not meeting LCFS.

In June 2007, CARB adopted the LCFS as a Discrete Early Action item under AB 32 pursuant to Health and Safety Code Section 38560.5, and, in April 2009, CARB approved the new rules and carbon intensity reference values with new regulatory requirements taking effect in January 2011. The standards require providers of transportation fuels to report on the mix of fuels they provide and demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of “credits” earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the “deficits” earned from selling higher-intensity fuels.

After some disputes in the courts, CARB re-adopted the LCFS regulation in September 2015, and the LCFS went into effect on January 1, 2016. New amendments were adopted on April 27, 2018, that strengthen reduction targets through 2030.

Climate Change Scoping Plan and Updates

In December 2008, CARB adopted its first version of its Climate Change Scoping Plan, which contained the main strategies California will implement to achieve the mandate of AB 32 (2006) to reduce statewide GHG emissions to 1990 levels by 2020.

In May 2014, CARB released and subsequently adopted the First Update to the Climate Change Scoping Plan to identify the next steps in reaching the goals of AB 32 (2006) and evaluate the progress made between 2008 and 2012 (CARB 2014). According to this update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (CARB 2014). This update also reported the trends in GHG emissions from various emissions sectors (e.g., transportation, building energy, agriculture).

On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan (2017 Scoping Plan), which lays out the framework for achieving the mandate of SB 32 (2016) to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017b).

The 2017 Scoping Plan includes guidance to local governments in Chapter 5, including plan-level GHG emissions reduction goals and methods to reduce communitywide GHG emissions. In its guidance, CARB recommends that “local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State’s sustainable development objectives and develop plans to achieve the local goals.” CARB further states that “it is appropriate for local jurisdictions to derive evidence-based local per capita goals [or some other metric that the local jurisdiction deems appropriate, such as mass emissions or per service population] based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets” (CARB 2017b: 99–100).

CARB developed statewide per capita GHG emissions targets of 6 MTCO_{2e}, and 2 MTCO_{2e} by 2020 and 2050, respectively. These statewide per capita targets account for all emissions sectors in the State’s GHG emissions inventory, statewide population forecasts recently prepared for 2030 and 2050, and all statewide reductions necessary to achieve the 2030 statewide target under SB 32 in all sectors. Consequently, the statewide emissions sectors and the total reductions achieved in these sectors through the Scoping Plan may not be directly applicable to GHG emissions inventories for individual cities or counties. Thus, while the statewide GHG efficiency

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targets of 6 MTCO₂e per capita and 2 MTCO₂e per capita goals are certainly a starting point for understanding how statewide GHG reductions required by SB 32 might be achieved, additional analysis may be necessary to determine more specific and locally appropriate targets that reflect local conditions and emissions sources.

Senate Bill 743

SB 743 changes the way that public agencies must evaluate the transportation impacts of projects under CEQA. The bill requires revisions to the CEQA guidelines that would establish new criteria for determining the significance of a project's transportation impacts that will more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions.

As required under SB 743, OPR has developed potential metrics to measure transportation impacts that may include, but are not limited to, VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. The new metric would replace the use of delay and level of service (LOS) as the metric to analyze transportation impacts under CEQA. OPR recommends different thresholds of significance for projects depending on land use types. For example, residential and office space projects must demonstrate a VMT level that is 15 percent less than that of existing development in the region may be a reasonable criterion for determining whether the mobile-source GHG emissions associated with the project are consistent with statewide GHG reduction targets (OPR 2017, p. 9). OPR's guidance explains that this criterion is consistent with Section 21099 of the California's Public Resources Code, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions." It is also consistent with the statewide VMT reduction target developed by Caltrans in its Strategic Management Plan, which calls for a 15 percent reduction in per capita VMT, compared to 2010 levels, by 2020 (Caltrans 2015, p. 11; OPR 2017). Additionally, the California Air Pollution Control Officers Association determined that a 15 percent reduction in VMT is typically achievable for projects (CAPCOA 2010, p. 55) and the call for local governments to set communitywide GHG reduction targets of 15 percent below then-current levels by 2020 in CARB's First Update to the AB 32 Scoping Plan (CARB 2014, p. 113). With respect to retail land uses, any net increase of VMT may be sufficient to indicate a significant transportation impact.

In November 2017, OPR submitted final proposed changes to the CEQA Guidelines implementing SB 743 as part of a comprehensive CEQA Guidelines Update proposal to the California Natural Resources Agency. New rules would go into effect after the Secretary for the Natural Resources Agency adopts the new Guidelines, and the package undergoes review by the Office of Administrative Law. While a public agency could immediately apply the proposed new Guidelines section regarding the evaluation of transportation impacts (proposed Guidelines Section 15064.3), statewide application of that new section would not be required until January 1, 2020 (OPR 2017).

State of California Energy Plan

CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 1997 California Energy Plan. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies strategies such as helping public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs, and encourage urban design that reduces VMT and accommodates pedestrian and bicycle access.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with CARB and in consultation with other federal, State, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative nonpetroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Executive Order S-06-06

EO S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050. The EO also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste.
- Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications.
- Create jobs and stimulate economic development, especially in rural regions of the State.
- Reduce fire danger, improve air and water quality, and reduce.

LOCAL

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the primary agency responsible for addressing air quality concerns in all of Sacramento County—its role is discussed further in Section 5.3, Air Quality. The SMAQMD also recommends methods for analyzing programmatic, plan-level GHGs in CEQA analyses and offers multiple potential GHG reduction measures for land use development projects. The SMAQMD also recommends thresholds of significance to provide a uniform scale to measure the significance of GHG emissions from land use and stationary source projects in compliance with CEQA and AB 32. The SMAQMD's goals in developing GHG thresholds include ease of implementation; use of standard analysis tools; and emissions mitigation consistent with AB 32. However, since the passage of SB 32 and the associated adoption of a revised statewide emissions target of 40 percent below 1990 levels by 2030, the SMAQMD has not developed new thresholds in compliance with this target (SMAQMD 2016).

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The SMAQMD recommends that analyses of general plan-related GHG emissions include projections extending to the first year of the general plan buildout under two scenarios: without mitigation initiated by the lead agency and with mitigation from the implementation of goals and policies. The difference between these two scenarios should then be evaluated against the SMAQMD's adopted project-level thresholds to make a significance determination (SMAQMD 2016).

City of Elk Grove Climate Action Plan and Sustainability Element

Background

On March 27, 2013, the City adopted a CAP and the Sustainability Element of the General Plan. The Sustainability Element and CAP are two separate but related components of the City's sustainability strategy. The CAP is a culmination of existing and proposed initiatives to reduce GHG emissions through goals and measures related to transportation, land use, energy use, waste, and water use. The CAP is a tool for the City to achieve the State-recommended GHG emissions reduction targets through new and existing land uses, transportation, and City codes and programs. Concurrently with the CAP, the City adopted a new General Plan Sustainability Element. The Sustainability Element is a long-term (20+ years) plan that organizes and highlights the City's goals related to sustainability and provides new direction and vision to maintain a healthy, balanced community. As an element of the City's General Plan, the Sustainability Element governs land use decisions. The Sustainability Element also creates an overarching framework for the City to achieve GHG emissions reductions.

The CAP functions as an implementation tool of the Sustainability Element, focusing specifically on strategies to reduce GHG emissions and providing direction to reduce emissions consistent with State recommendations. It also builds on the goals and vision of the Sustainability Element but translates these goals into numeric estimates of GHG emissions reduction potential. While the CAP is not an adopted component of the General Plan, it is connected to the General Plan as an implementation item of the Sustainability Element to directly implement the goals and policies of the element.

In March 2013, the City certified a Subsequent Environmental Impact Report (SEIR) for the Sustainability Element and CAP (City of Elk Grove 2013b). The City prepared the SEIR for use as a tiering and streamlining document for GHG emissions as allowed under Section 15183.5 of the CEQA Guidelines. The SEIR allows the City to use the CAP to determine that a subsequent project's incremental contribution to GHG and climate change impacts is not cumulatively considerable if the project complies with the CAP.

An update to the City's CAP is proposed concurrently with the General Plan Update and is discussed below in Section 5.7.3.

5.7.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Greenhouse Gas Emissions

For the purposes of this EIR, climate change impacts are considered significant if the proposed Project would:

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

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

Energy

Based on Appendix F (energy) of the State CEQA Guidelines, implementing the Project would have a potentially significant impact on energy if it would:

- 3) Result in wasteful, inefficient, or unnecessary consumption of energy, during project construction or operation, as evidenced by a failure to decrease overall per capita energy consumption or decrease reliance on fossil fuels such as coal, natural gas, and oil.
- 4) Fail to incorporate feasible renewable energy or energy efficiency measures into building design, equipment use, transportation, or other project features, or otherwise fail to increase reliance on renewable energy sources.
- 5) Exceed the available capacities of energy supplies that require the construction of facilities.
- 6) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

METHODOLOGY

Greenhouse Gas Emissions

The analysis in this section is consistent with the recommendations of the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Guide to Air Quality Assessment in Sacramento County, Chapter 9, Program-Level Analysis of General Plans and Area Plans (SMAQMD 2016). The analysis primarily focuses on the extent to which the proposed General Plan Update would conflict with a plan for reduction of GHG emissions as defined by CEQA Guidelines Section 15183.5.

The City is updating its CAP concurrently with the General Plan. The CAP update is intended to carry out the proposed General Plan goals and policies to reduce GHG emissions and address the impacts of climate change. The City's GHG emissions inventory and forecasts have been updated to reflect new activity data and both current and projected population, housing, and employment demographic information consistent with the proposed General Plan. The CAP update includes new GHG emissions reduction targets of 7.6 MTCO₂e per capita by 2020, and 4.1 MTCO₂e per capita by 2030. These targets are consistent with guidance provided to local governments in the 2017 Scoping Plan on setting plan-level GHG reduction goals that are consistent with the State's efforts to achieve the 2030 target established by SB 32.

For transportation sector emissions, projected VMT under the cumulative General Plan conditions was obtained from the SACMET travel demand model based on the VMT attribution methodology known as the "Origin-Destination" method (Fehr & Peers 2017), as recommended by the CARB-appointed Regional Targets Advisory Committee (RTAC) for purposes of evaluating transportation plan consistency with SB 375 requirements (CAPCOA 2009).

Additional information regarding methods used in the CAP update, including the GHG emissions inventory, forecasts, reduction targets, and GHG emissions reduction measures that would be implemented in the Planning Area are included in **Appendix D** of this Draft EIR.

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Energy

Energy use related to the Project would include energy directly consumed for space heating and cooling, electricity- and gas-powered equipment (including industrial equipment), and interior and exterior lighting of all buildings (residential and commercial) in the Planning Area. Indirect energy consumption includes the energy used (by consuming other fuel types) for generation of electricity at power plants and the energy used for the treatment of water and the transportation of water to and from the Planning Area. Transportation-related energy consumption includes the use of fuels and electricity to power cars, trucks, and public transportation. Energy would also be consumed by equipment and vehicles used during construction and routine maintenance activities.

Levels of construction- and operation-related energy consumption by land uses developed under the proposed General Plan were estimated, including the number of megawatt-hours of electricity, therms of natural gas, gallons of gasoline, and gallons of diesel fuel. Energy consumption estimates were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 computer program (CAPCOA 2017). Where specific information about the land uses that would be developed under the proposed General Plan were not known, CalEEMod default values based on the location of the Planning Area were used. The following discussion summarizes the levels of energy consumption for each year of construction and for the first year of operation at full buildout. It also summarizes the gasoline and diesel consumption estimated for the City at full buildout of the proposed General Plan.

PROPOSED GENERAL PLAN POLICIES

The following goals, policies, and implementation programs from the proposed General Plan are specifically relevant to climate change and GHG emissions and energy consumption within the Planning Area. Numerous policies and programs in the General Plan address sustainable development, which influence operational mobile- and area-source emissions in the Planning Area. Policies and implementation programs throughout the Land Use and Mobility elements promote reductions in VMT through the mix and density of land uses, walkable neighborhood design, bicycle facilities and infrastructure, and public transportation facilities and infrastructure. In some cases, only components of General Plan policies were included. Refer to the full text of the General Plan for complete policy descriptions.

Land Use

Goal LU-1: A coordinated development pattern.

Policy LU-1-9: Encourage employee-intensive commercial and industrial uses to locate within walking distance of fixed transit stops. Encourage regional public transit providers to provide or increase coordinated services to areas with high concentrations of residents, workers, or visitors.

Goal LU-2: A focus on infill.

Policy LU-2-4: Require new infill development projects to be compatible with the character of surrounding areas and neighborhoods, support increased transit use, promote pedestrian and bicycle mobility, and increase housing diversity.

Goal LU-3: Expansion with purpose.

Policy LU-3-9: Public, Open Space, and Conservation land uses in Open Space/Conservation Districts should meet the following guidelines:

- Contain all areas located in the 100-year or 200-year floodplain, unless this would result in “islanding” of higher-density land uses. Areas located in the 100-year or 200-year floodplain shall be retained for agriculture if it is the existing use, continues to be economically viable, and would not result in islanding of higher-density land uses.

Policy LU-3-25: Require annexation proposals to demonstrate compliance with all of the following criteria:

- Criteria 2. The annexation proposal is consistent with the City’s multimodal transportation goals, including integration of alternative transportation facilities as applicable.

Policy LU-3-26: Require the following items be submitted with all annexation applications:

- Performance Standards. An analysis of the projected VMT and GHG emissions for the proposed development.

Goal LU-4: Thriving activity centers.

Policy LU-4-1: Establish activity centers as community gathering places characterized by the following design element related actions

- Prioritize pedestrian and bicycle access.
- Ensure local and regional transit connections are provided throughout each activity center.

Goal LU-5: Consistent, high-quality urban design.

Policy LU-5-12: Integrate sustainable stormwater management techniques in site design to reduce stormwater runoff and control erosion.

Goal LU-6: Context-appropriate development of land use policy areas

Policy LU-6-8: Support the development of transit-friendly land uses and densities in the Land Use Policy Area, consistent with the City-preferred alignment of the Blue Line extension and the light rail station.

Policy LU-6-10: Prioritize land development of the type and scale in the South Pointe Policy Area to allow for and support a fixed rail or BRT transit service with regional connectivity.

Agriculture

Goal AG-1: Integrated and sustained agriculture.

Policy AG-1-4: Cultivate local food systems that encourage health eating and support the regional economy.

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Policy AG-1-5: Support the protection of agricultural lands from future risk of conversion by requiring mitigation of the loss of qualified agricultural lands at a 1:1 ratio. The protection of existing agricultural land through the purchase of fee title or easements is not considered by the City to provide mitigation, because programs of this type result in a net loss of farmland.

Goal AG-2: Urban agriculture that is environmentally sustainable and a healthy food source.

Policy AG-2-1: Maintain existing, and facilitate the development of new and expanded, community gardens and farmers markets throughout Elk Grove.

Policy AG-2-2: Support urban agriculture opportunities such as backyard, rooftop, indoor, and other gardens that produce ecologically sound food for personal consumption.

Policy AG-2-3: Utilize the City's public works projects (e.g., parks, street tree planting, planted medians) as community gardens in locations deemed appropriate by the City.

Economic Development

Goal ED-3: Successful local businesses.

Policy ED-3-1: Promote a thriving local retail, personal services, and business services sector, particularly in the civic one, Old Town, and near major transit stops.

Regional Coordination

Goal RC-1: A new regional employment center.

Policy RC-1-5: In addition to establishing a primary Major Employment Center, consider options to develop additional Major Employment Centers in portions of the City with enough available undeveloped land and potential sufficient transit access to support such a center.

Goal RC-3: Regional mobility and infrastructure to support the local economy.

Policy RC-3-1: Integrate economic development and land use planning in Elk Grove with planning for regional transportation systems.

Policy RC-3-4: Advocate for fixed-transit service in Elk Grove as part of a coordinated regional network designed and routed to serve Major Employment Centers, residential centers, shopping centers, and colleges and universities.

Mobility

Goal MOB-1: A connected transportation network that provides for the safe and efficient movement of people and goods across all modes while accounting for environmental effects.

Policy MOB-1-1: Achieve State-mandated reductions in VMT by requiring land use and transportation projects to comply with the specific metrics and limits. These

metrics and limits shall be used as thresholds of significance in evaluating projects subject to CEQA.

- Policy MOB-1-2:** Prepare and regularly update guidelines for the preparation of transportation impact analyses for consistency with VMT policies.
- Policy MOB-1-4:** Consider all transportation modes and the overall mobility of these modes when evaluating transportation design and potential impacts during circulation planning.
- Goal MOB-3:** All streets in the city are complete and sensitive to context.
- Policy MOB-3-1:** Implement a balanced transportation system using a layered network approach to building Complete Streets that ensure the safety and mobility of all users, including pedestrians, cyclists, motorists, children, seniors, and people with disabilities.
- Policy MOB-3-2:** Support strategies that reduce reliance on single-occupancy private vehicles and promote the viability of alternative modes of transport.
- Policy MOB-3-3:** Whenever capital improvements are being performed within the public right-of-way that alter street design, retrofit the right-of-way to enhance multimodal access to the most practical extent possible.
- Policy MOB-3-6:** Execute Complete Streets design in accordance with neighborhood context and consistent with specific guidance in community plans or area plans, as applicable.
- Policy MOB-3-7:** Develop a complete and connected network of sidewalks, crossings, paths, and bike lanes that are convenient and attractive, with a variety of routes in pedestrian-oriented areas.
- Policy MOB-3-9:** Fund development, operation, and maintenance of facilities for bicycle and pedestrian networks proportionate to the travel percentage milestone goals for each mode of transportation in the Bicycle, Pedestrian, and Trails Master Plan.
- Policy MOB-3-15:** Utilize reduced parking requirements when and where appropriate to promote walkable neighborhoods and districts and to increase the use of transit and bicycles.
- Policy MOB-3-16:** Establish parking maximums, where appropriate, to prevent undesirable amounts of motor vehicle traffic in areas where pedestrian, bike, and transit use are prioritized.
- Policy MOB-3-17:** Ensure new multifamily and commercial developments provide bicycle parking and other bicycle support facilities appropriate for the users of the development.
- Goal MOB-4:** Active transportation for all.
- Policy MOB-4-1:** Ensure that community and area plans, specific plans, and development projects promote pedestrian and bicycle movement via direct, safe, and

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pleasant routes that connect destinations inside and outside the plan or project area. This may include convenient pedestrian and bicycle connections to public transportation.

Policy MOB-4-2: Provide on-site facilities and amenities for active transportation users at public facilities, including bicycle parking and/or storage and shaded seating areas.

Policy MOB-4-3: Prioritize infrastructure improvements that benefit bicycle and pedestrian safety and convenience around community facilities and locations in activity centers and other pedestrian-oriented areas over vehicle efficiency improvements.

Policy MOB-4-4: Employ the recommendations and guidelines in the Bicycle, Pedestrian, and Trails Master Plan when planning and designing bicycle, pedestrian, and trail facilities and infrastructure, including updates to the Capital Improvement Program.

Policy MOB-4-5: Encourage employers to offer incentives to reduce the use of vehicles for commuting to work and increase commuting by active transportation modes. Incentives may include a cash allowance in lieu of a parking space and on-site facilities and amenities for employees such as bicycle storage, shower rooms, lockers, trees, and shaded seating areas.

Goal MOB-5: A safe, connected, and convenient transit system.

Policy MOB-5-1: Support a pattern of land uses and development projects that are conducive to the provision of a robust transit service.

Policy MOB-5-2: Advocate for the City's preferred fixed transit alignment from north of the City to the Southeast Policy Area and ensure proposed projects are complementary to such an alignment.

Policy MOB-5-3: Consult with Regional Transit when identifying and designing Complete Streets improvements near likely light rail alignment corridors in order to prioritize access to and use of transit to sites along that corridor.

Policy MOB-5-4: Support mixed-use and high-density development applications close to existing and planned transit stops.

Policy MOB-5-5: Promote strong corridor connections to and between activity centers that are safe and attractive for all modes.

Policy MOB-5-6: Provide the appropriate level of transit service in all areas of Elk Grove, through fixed-route service in urban areas, and complementary demand response service in rural areas, so that transit-dependent residents are not cut off from community services, events, and activities.

Policy MOB-5-7: Maintain and enhance transit services throughout the City in a manner that ensures frequent, reliable, timely, cost-effective, and responsive service to meet the City's needs. Enhance transit services where feasible to accommodate growth and transit needs as funding allows.

- Policy MOB-5-8:** Continue working with community partners to expand public transit service that benefits Elk Grove workers, residents, students, and visitors. Examples of expanded transit service included increased service frequency, establishing additional routes and stops, and creating dedicated transit lanes that would provide enhanced transit priority.
- Policy MOB-5-9:** Encourage the extension of bus rapid transit and/or light rail service to existing and planned employment centers by requiring a dedication of right-of-way. Advocate and plan for light rail alignment and transit stop locations that best serve the needs to the community and fit within the planned mobility system.
- Policy MOB-5-10:** Encourage commuter rail transportation by providing for a potential train station location for Amtrak and/or other rail service providers along the Sacramento Subdivision line.
- Goal MOB-7:** Adequate mobility system maintenance and operation.
- Policy MOB-7-8:** Support and use infrastructure improvements and technological advancements such as intelligent transportation management tools to facilitate the movement and security of goods through the City in an efficient manner.
- Policy MOB-7-9:** Assist in the provision of support facilities for emerging technologies such as advanced fueling stations (e.g., electric and hydrogen) and smart roadway signaling/signage.
- Policy MOB-7-10:** Work with a broad range of agencies to encourage and support programs that increase regional average vehicle occupancy. Examples include providing traveler information, shuttles, preferential parking for carpools/vanpools, transit pass subsidies, road and parking pricing, and other methods.
- Policy MOB-7-11:** Encourage and create incentives for the use of environmentally friendly materials and innovative approaches in roadway designs that limit runoff and urban heat island effects. Examples include permeable pavement, bioswales, and recycled road base, asphalt, and concrete.

Community and Resource Protection

- Goal PT-2:** A connected parks and trails system.
- Policy PT-2-4:** Continue to implement the adopted Bicycle, Pedestrian, and Trails Master Plan and complete regular updates to the plan as necessary.
- Goal NR-2:** Preserved trees and urban forest.
- Policy NR-2-2:** Maximize and maintain tree coverage on public lands and in open spaces.
- Policy NR-2-4:** Maintain and enhance an urban forest by preserving and planting trees in appropriate densities and locations to maximize energy conservation and air quality benefits.
- Goal NR-3:** A clean and adequate water supply.

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- Policy NR-3-2:** Integrate sustainable stormwater management techniques in site design to reduce stormwater runoff and control erosion during and after construction.
- Policy NR-3-6:** Continue interagency partnerships to support water conservation.
- Policy NR-3-7:** Continue to eliminate water use inefficiencies and maintain ongoing communication with water suppliers to ensure sustainable supply.
- Policy NR-3-8:** Reduce the amount of water used by residential and nonresidential uses by requiring compliance with adopted water conservation measures.
- Policy NR-3-9:** Promote the use of greywater systems and recycled water for irrigation purposes.
- Policy NR-3-10:** Improve the efficiency of water use at City facilities through retrofits and employee education.
- Policy NR-3-11:** Promote upgrades to existing buildings for water conservation.
- Policy NR-3-12:** Advocate for native and/or drought-tolerant landscaping in public and private projects.
- Goal NR-4:** Improved air quality.
- Policy NR-4-1:** Require all new development projects which have the potential to result in substantial air quality impacts to incorporate design, construction, and/or operational features that result in a reduction in emissions equal to 15 percent compared to an “unmitigated baseline project.” An “unmitigated baseline project” is a development project which is built and/or operated without the implementation of trip reduction, energy conservation, or similar features, including any such features which may be required by the Zoning Code or other applicable codes.
- Policy NR-4-3:** Implement and support programs that reduce mobile source emissions.
- Policy NR-4-4:** Promote pedestrian/bicycle access and circulation to encourage community residents to use alternative modes of transportation in order to minimize direct and indirect emissions of air contaminants.
- Policy NR-4-5:** Emphasize demand management strategies that seek to reduce single-occupant vehicle use in order to achieve State and federal air quality plan objectives.
- Policy NR-4-6:** Offer a public transit system that is an attractive alternative to the use of private motor vehicles.
- Policy NR-4-11:** Work with Sacramento County and the Sacramento Metropolitan Air Quality Management District to address cross-jurisdictional and regional transportation and air quality issues.
- Goal NR-5:** Reduced greenhouse gas emissions that align with local, state, and other goals.

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- Policy NR-5-1:** By 2030, reduce community-wide greenhouse gas emissions to 4.1 metric tons of carbon dioxide equivalent (MTCO₂e) per capita. By 2050, reduce community-wide greenhouse gas emissions to 1.4 MTCO₂e per capita to meet the State’s 2050 greenhouse gas emissions reduction goals.
- Policy NR-5-2:** Improve the health and sustainability of the community through improved regional air quality and reduction of greenhouse gas emissions that contribute to climate change.
- Policy NR-5-3:** Support efforts by the Sacramento Metropolitan Air Quality Management District and the California Air Resources Board to decrease greenhouse gas emissions from stationary sources.
- Policy NR-5-4:** Preserve, protect, and enhance, as appropriate, the community’s carbon sequestration resources to improve air quality and reduce net carbon emissions.
- Goal NR-6:** Reduced energy demand and increased renewable sources.
- Policy NR-6-1:** Promote energy efficiency and conservation strategies to help residents and businesses save money and conserve valuable resources.
- Policy NR-6-2:** Improve energy efficiency.
- Policy NR-6-3:** Promote innovation in energy efficiency.
- Policy NR-6-4:** Explore public-private partnerships to upgrade existing buildings for energy efficiency.
- Policy NR-6-5:** Encourage renewable energy options that are affordable and benefit all community members.
- Policy NR-6-6:** Encourage the use of solar energy systems in homes, commercial businesses, and City facilities as a form of renewable energy.
- Policy NR-6-7:** Promote energy conservation measures in new development to reduce on-site emissions and seek to reduce the energy impacts from new residential and commercial projects through investigation and implementation of energy efficiency measures during all phases of design and development.
- Goal SD-1:** Sustainable city management.
- Policy SD-1-1:** Participate in local, regional, and Statewide sustainability efforts and programs that further the goals and policies outlined in the General Plan.
- Policy SD-1-2:** Assess the City’s progress toward achieving its sustainability objectives.
- Policy SD-1-4:** Use funding and financing mechanisms to support sustainability and environmentally friendly government programs.
- Goal SD-2:** Green building.

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Policy SD-2-1: Incorporate green building techniques and best management practices in the site design, construction, and renovation of all public projects.

Policy SD-2-2: Support innovation and green building best management practices for all new private development.

Services, Health, and Safety

Goal ER-2: Minimal damage from flooding and drainage.

Policy ER-2-2: Require that all new projects not result in new or increased flooding impacts on adjoining parcels or on upstream and downstream areas.

Policy ER-2-3: Locate, and encourage other agencies to locate, new essential government service facilities and essential health care facilities outside of 100-year and 200-year flood hazard zones, except in cases where such locations would compromise facility functioning.

Policy ER-2-4: Relocated or harden existing essential government service facilities and essential health care facilities that are currently located inside of the 100-year and 200-year flood hazard zones.

Policy ER-2-6: Development shall not be permitted on land subject to flooding during a 100-year event, based on the most recent floodplain mapping prepared by the Federal Emergency Management Agency (FEMA) or updated mapping acceptable to the City of Elk Grove. Potential development in areas subject to flooding may be clustered onto portions of a site which are not subject to flooding, consistent with other policies of this General Plan.

Policy ER-2-10: Work with regional, county, and state agencies to develop mechanisms to finance the design and construction of flood management and drainage facilities to achieve an urban level of flood protection in affected areas.

Goal ER-6: An adaptable and resilient community.

Policy ER-6-1: Develop a guide of City procedures in the event of severe weather conditions such as excessive heat including the deployment of emergency services, opening of local cooling shelters, and community notification procedures.

Policy ER-6-2: Coordinate with the Sacramento County Office of Emergency Services (SacOES) and the County Department of Public Health to provide information to vulnerable populations on the resources available and key actions to take both for mitigation on their property in preparation of excessive heat events and services during events.

Policy ER-6-4: In construction of new roadways, utilize cool pavements and higher-albedo impervious materials as well as trees and foliage along rights-of-way.

Policy ER-6-5: Allocate funds as appropriate to address anticipated additional repairs to damaged infrastructure that will be required due to increased stress from climate effects such as extreme heat and storms.

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- Policy ER-6-6:** Work with the Sacramento County Water Agency, Elk Grove Water Agency, and other water utilities to support programs and conservation activities intended to help water customers voluntarily conserve approximately 10 percent over time.
- Policy ER-6-7:** Enforce the City's water conservation ordinance and State Water Resource Control Board regulations affecting local water agencies and encourage public reporting of violations.
- Policy ER-6-9:** Facilitate implementation of measures identified in the Metro Fire's Community Wildfire Protection Plan (CWPP) for the protection of human life and reduction in loss of property, critical infrastructure, and natural resources associated with wildfire.
- Policy ER-6-11:** Seek to provide the community with information relating to sustainability, climate change, and innovative development strategies.
- Goal INF-1:** An efficient water delivery and storage system.
- Policy INF-1-3:** Protect the quality and quantity of groundwater resources, including those which serve households and businesses which rely on private wells.
- Policy INF-1-4:** Establish and expand recycled water infrastructure for residential, commercial, industrial, and recreational facilities and support the use of reclaimed water for irrigation wherever feasible.
- Goal CIF-1:** Minimal solid waste generation.
- Policy CIF-1-1:** Facilitate recycling, reduction in the amount of waste, and reuse of materials to reduce the amount of solid waste sent to landfill from Elk Grove.
- Policy CIF-1-2:** Reduce municipal waste through recycling programs and employee education.
- Policy CIF-1-3:** Encourage businesses to emphasize resource efficiency and environmental responsibility and to minimize pollution and waste in their daily operations.
- Goal HTH-1:** Health living options for all residents.
- Policy HTH-1-3:** Provide comfortable, safe pedestrian and bicycle connections between residential areas and recreational opportunities.
- Policy HTH-1-5:** Promote access to healthy food options by preserving and expanding local food production.
- Policy HTH-1-6:** Support and consider incentives to encourage the development of new retail venues that sell local, fresh produce, including farmers markets, community-supported agriculture programs, and grocery stores, especially in underserved areas and near schools.
- Policy HTH-1.7:** Strive to increase the number of farmers markets and community gardens throughout the City.

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SouthEast Policy Area Community Plan

Goal SEPA-1: An efficient roadway network.

Policy SEPA-1.3: Provide for the future extension of fixed transit service through the Plan Area via Big Horn Boulevard and Bilby Road.

Goal SEPA-4: A wide range of housing types.

Policy SEPA-4.1: Support a wide range of housing types in the Plan Area. Residential developers are encouraged to be innovative and responsive to the changing lifestyle of future residents and trends toward transit, telecommuting, zero-emissions vehicles, and other.

Goal SEPA-10: Sustainable design.

Policy SEPA-10.1: Require development in the Plan Area to provide opportunities for implementation of sustainable design principles. Design opportunities include, but are not limited to, the following:

- Orienting homes and buildings in an east-west alignment for southern exposure to take advantage of passive or natural heating or cooling.
- Incorporating photovoltaic and other renewable energy systems into building and site design.
- Incorporating low-impact development features, such as bioswales and permeable materials for paved areas.

Eastern Elk Grove Community Plan

Goal EEG-2: Enhanced stream corridors and wetlands.

Policy EEG-2.8: Require the provision of pedestrian and bicycle access between the industrial properties and trail systems in adjacent open space areas.

Goal EEG-3: A complete circulation system.

Policy EEG-3.3: Include a network of interconnected bicycle and pedestrian facilities within the Community Plan area.

CLIMATE ACTION PLAN UPDATE

The Elk Grove City Council adopted the 2013 CAP with the primary objective to reduce GHG emissions throughout the community and prepare for climate change. The 2013 CAP was designed to reduce community-wide emissions 15 percent below 2005 levels by the year 2020, and to set the City on a course to achieve a long-term emissions reduction goal to reduce emissions by an additional 80 percent by 2050.

The GHG emissions projections in **Table 5.7-4** account for the land use pattern and demographic assumptions contained in the General Plan, which were incorporated into the SACMET travel demand model. GHG emissions from mobile sources and energy consumption (e.g., electricity

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and natural gas) from residential and nonresidential land uses are the largest sources of GHG emissions in the City.

**TABLE 5.7-4
CITY OF ELK GROVE COMMUNITY-WIDE GREENHOUSE GAS EMISSIONS INVENTORY AND LEGISLATIVE-ADJUSTED
EMISSIONS FORECASTS (MTCO₂E/YEAR)**

| Sector | 2013 | 2020 | 2030 | 2050 |
|---------------------------------|----------------|------------------|----------------|------------------|
| Residential Energy | 231,400 | 245,995 | 240,585 | 289,705 |
| Commercial/Industrial Energy | 129,860 | 142,309 | 144,486 | 198,485 |
| On-Road Vehicles | 430,340 | 541,455 | 524,978 | 681,001 |
| Off-Road Vehicles | 93,340 | 27,206 | 14,685 | 20,648 |
| Solid Waste | 26,260 | 36,181 | 39,817 | 47,781 |
| Wastewater | 3,854 | 4,251 | 5,083 | 6,781 |
| Water | 2,708 | 2,421 | 2,182 | 2,910 |
| Agriculture | 1,030 | 2,585 | 1,061 | 299 |
| Total | 918,790 | 1,002,402 | 972,878 | 1,247,610 |
| GHG Emissions Reduction Targets | N/A | 1,384,355 | 888,509 | 401,347 |

**Note: MTCO₂e = metric tons of carbon dioxide equivalent; GHG = greenhouse gas; N/A = not applicable. Due to rounding, the total may not be the sum of component parts.*

The City is updating the General Plan concurrently with an update to the CAP. The proposed General Plan includes Policy NR-5-1 to achieve a GHG emissions reduction target of 7.6 MTCO₂e per capita by the year 2020, and 4.1 MTCO₂e per capita by the year 2030. The proposed General Plan also recommends a longer-term goal for GHG reductions of 1.4 MTCO₂e per capita by 2050. This longer-term goal is based on statewide directives in Executive Order S-3-05 to reduce GHG emissions to 80 percent below 1990 levels by 2050. The CAP update is designed to meet these targets and thus serves as a vehicle for implementing the updated General Plan.

Total GHG emissions reductions require to meet the targets account for both State and federal regulatory actions, and locally based GHG emissions reductions in the CAP Update, which are summarized below in **Table 5.7-6**. Additional net GHG emissions reductions would be required to meet the long-term goal for 2050; however, the scale of reductions required to achieve the much more aggressive longer-term emissions reduction goals will require significant improvements the availability and/or cost of technology, as well as potential increased reductions from ongoing State and federal legislative actions.

A comprehensive list of specific General Plan policies and programs that correspond with the proposed GHG emissions reduction measures in the CAP Update are included in **Table 5.7-6**. As shown in the table, the GHG reduction measures in the CAP Update are consistent with the proposed General Plan policies. The GHG emissions reduction measures apply to existing development, new development, or both, depending on the measure and implementation methods. Implementation of the GHG emissions reduction measures in the proposed CAP Update would reduce GHG emissions by approximately 94,778 MTCO₂e below 2020 projected emissions. When combined with State and federal legislative reductions, per capita GHG emissions would meet the target of 7.6 MTCO₂e per capita by 2020. Detailed assumptions and emissions reduction estimates associated with the proposed GHG reduction measures are shown in **Appendix D** of this Draft EIR. Wherever assumptions could be supported regarding expected participation and

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emissions reduction potential of the proposed GHG reduction measures in the CAP Update, those assumptions were documented in **Appendix D**.

PROJECT IMPACTS AND MITIGATION MEASURES

Generate GHG Emissions and Consistency with Scoping Plan (Standards of Significance 1 and 2)

Impact 5.7.1 Development that would occur under the proposed General Plan Update would result in construction- and operational-related GHG emissions that contribute to climate change on a cumulative basis. However, the General Plan and the associated CAP Update would result in GHG emissions reductions sufficient to meet GHG reduction targets and goals, which are consistent and aligned with the goals identified 2017 Scoping Plan to meet the statewide GHG emission reduction targets for 2020 and 2030, as established by AB 32 and SB 32. Thus, this impact would be **less than significant**.

Development that would occur under the proposed General Plan would result in construction- and operation-related GHG emissions that would contribute to climate change on a cumulative basis. Detailed construction information for individual projects is unknown at this time but would typically involve use of heavy-duty equipment, construction worker commute trips, material deliveries, and vendor trips. These activities would result in GHG emissions limited in duration for any given project, but when taken together over buildout of the General Plan, could be considerable. Long-term operational sources of GHG emissions associated with the proposed General Plan would include mobile sources (e.g., vehicle exhaust), energy consumption (e.g., electricity and natural gas), solid waste (e.g., emissions that would occur at a landfill associated with solid waste decomposition), wastewater treatment, and water consumption (e.g., electricity used to deliver and treat water consumed by customers in the Planning Area). Operational GHG emissions associated with buildout of the proposed General Plan are summarized in **Appendix D**.

Growth assumptions (**Table 5.7-5**) relied upon for the City's GHG emissions projections are presented in **Table 5.7-4**. Because GHG emissions from vehicles are one of the largest sources of GHG emissions in the Planning Area, VMT is an important metric to help measure progress toward reducing GHG emissions. VMT per capita is expected to increase by about 60 percent in the Planning Area through the buildout horizon, which means that vehicle trips or trip lengths are expected to increase.

**TABLE 5.7-5
GENERAL PLAN GROWTH ASSUMPTIONS AND ACTIVITY DATA**

| | 2013 | 2020 | 2030 | 2050 |
|----------------|-------------|---------------|---------------|---------------|
| Population | 163,093 | 181,257 | 218,503 | 291,481 |
| Employment | 45,463 | 51,704 | 68,632 | 93,423 |
| Housing | 52,783 | 58,095 | 70,033 | 102,765 |
| VMT | 878,312,710 | 1,304,308,676 | 1,705,930,899 | 2,509,175,345 |
| VMT per capita | 5,385 | 7,196 | 7,807 | 8,608 |

Source: City of Elk Grove 2018

Note: VMT = vehicle miles traveled estimated using SACMET travel demand model calculated according to "Origin-Destination" method.

Proposed CAP Update Strategies and General Plan Policies That Provide Mitigation

Policies in the General Plan that would reduce construction-related GHG emissions from development include Policy NR-4-1, which requires all new development project with the potential to result in substantial air quality impacts to incorporate design, construction, and/or operational features that result in a reduction in emissions equivalent to 15 percent compared to an “unmitigated baseline project.” Policy NR-4-8 requires development projects to incorporate best management practices during construction activities to reduce emissions of criteria pollutants and Policy NR-4-13 requires coordination with the SMAQMD on the review of proposed development projects, specifically projects that could conflict with any applicable air quality plans and/or the State Implementation Plan. These policies would result in projects incorporating feasible best practices for reducing GHG emissions from construction activities.

Implementation Actions listed under “Environment, Conservation and Sustainability” of the General Plan commit the City to assess and monitor performance of GHG emissions reduction efforts through 2030, and progress toward meeting long-term GHG emissions reduction goals.

The CAP Update contains a comprehensive strategy that achieves a community-wide GHG emissions reduction target of 7.6 MTCO₂e per capita by 2020 and 4.1 MTCO₂e per capita by 2030. The CAP Update is designed to implement the General Plan by demonstrating specific GHG reduction measures and implementing actions for achieving the General Plan’s proposed GHG emissions reduction policy of 7.6 MTCO₂e per capita by 2020, 4.1 MTCO₂e per capita by 2030, and 1.4 MTCO₂e per capita by 2050 (see Policy NR-5-1).

Conclusion

The estimated GHG emissions reduction potential of CAP actions are summarized in **Table 5.7-6**. The GHG emissions reductions presented in **Table 5.7-6** are estimates and not precise values. The estimates are based on conservative assumptions and performance standards that are included in the proposed CAP Update.

The City’s forecast emissions under the General Plan, both without and with the GHG emissions reduction measures in the CAP Update, are presented relative to the 2020, 2030, and 2050 GHG reduction targets and goals in **Figure 5.7-1**. The CAP Update would meet (and exceed) the 2020 target with a 446,677 MTCO₂e/year surplus and exceed the 2030 target with a 62,893 MTCO₂e per year surplus.

**TABLE 5.7-6
SUMMARY OF GREENHOUSE GAS EMISSIONS REDUCTION ACTIONS**

| CAP Action | Location in General Plan | Action Description | GHG Reduction (MTCO ₂ e/year) | | |
|------------|--------------------------|---|--|--------|--------|
| | | | 2020 | 2030 | 2050 |
| BE-1 | NR-6-1 | Promote Energy Conservation | 1,876 | 4,340 | 11,393 |
| BE-2 | NR-6-2 | Upgrade Residential Appliances in Existing Development | 4,487 | 10,134 | 19,250 |
| BE-3 | NR-6-2 | Upgrade Nonresidential Appliances in Existing Development | 912 | 2,116 | 5,642 |

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| CAP Action | Location in General Plan | Action Description | GHG Reduction (MTCO _{2e} /year) | | |
|--|---|--|--|-----------|-----------|
| | | | 2020 | 2030 | 2050 |
| BE-4 | NR-6-1; NR-6-2; NR-6-3; SD-2-1; SD-2-2 | Encourage or Require Green Building Practices in New Construction ¹ | 59 | 924 | 3,836 |
| BE-5 | NR-6-1; NR-6-2; NR-6-3; SD-2-1; SD-2-2 | Phase in Zero Net Energy Standards in New Construction | 0 | 29,930 | 163,902 |
| BE-6 | NR-6-1; NR-6-2; NR-6-3; SD-2-1; SD-2-2 | Encourage or Require Green Building Practices in Existing Buildings | 1,986 | 3,404 | 8,511 |
| BE-7 | NR-6-6; NR-6-5 | Solar PV in Residential and Commercial Development | 5,488 | 13,459 | 44,544 |
| BE-8 | NR-6-6 | SMUD Greenergy and SolarShares Programs | 12,193 | 19,846 | 33,167 |
| BE-9 | NR-2-2; NR-2-3; NR-2-4 | Increase City Tree Planting | 173 | 421 | 1,235 |
| RC-1 | CIF-1.1; CIF-1.2; CIF-1.3 | Waste Reduction | 5,272 | 10,169 | 16,957 |
| RC-2 | CIF-1.1; CIF-1.2 | Reduce Organic Waste | 3,208 | 6,791 | 9,713 |
| TACM-1 | MOB-3.5; MOB-6.4; MOB-7.8 | Local Goods | 4,388 | 7,008 | 9,935 |
| TACM-2 | NR-4-6 | Transit Oriented Development | 3,189 | 6,963 | 14,613 |
| TACM-3 | NR-4-5 | Intra-City Transportation Demand Management | 5,485 | 9,344 | 24,838 |
| TACM-4 | NR-4-4; PT-2-4; MOB-1.5; MOB-3.1; MOB-3.7; MOB-3.9; MOB-3.15; MOB-3.16; MOB-3.17; MOB-4.2; MOB-4.3; MOB-4.4; MOB-4.5; HTH-1.3 | Pedestrian and Bicycle Travel | 3,299 | 4,265 | 5,533 |
| TACM-5 | H-2-1 | Affordable Housing | 12,028 | 16,018 | 21,193 |
| TACM-6 | MOB-1.1; NR-4-3 | Vehicle Miles Traveled Reduction Policy | NA | NA | NA |
| TACM-7 | N/A | Traffic Calming Measures | 274 | 292 | 828 |
| TACM-8 | NR-4-8 | Tier 4 Final Construction Equipment | 0 | 644 | 892 |
| TACM-9 | MOB-7.9 | Install EV Charging Stations | 316 | 794 | 689 |
| Citywide GHG Emissions without Legislative Reductions (BAU) | | | 1,199,232 | 1,523,936 | 2,174,042 |
| Total GHG Reductions Achieved from Legislative Reductions and General Plan Actions | | | 261,554 | 647,866 | 1,232,101 |

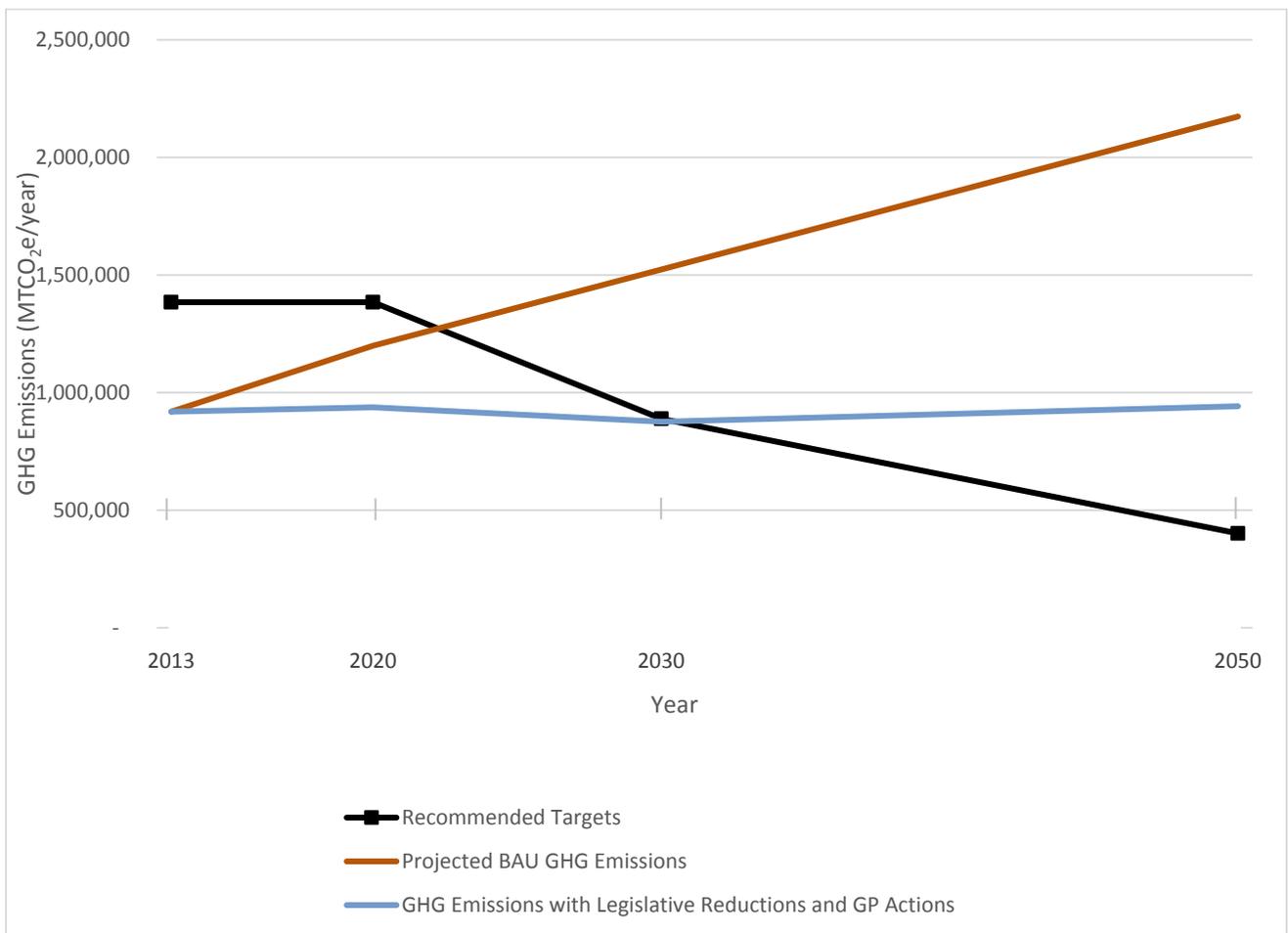
5.7 GREENHOUSE GAS EMISSIONS AND ENERGY

| CAP Action | Location in General Plan | Action Description | GHG Reduction (MTCO _{2e} /year) | | |
|---|--------------------------|--------------------|--|----------|---------|
| | | | 2020 | 2030 | 2050 |
| Citywide GHG Emissions with Legislative Reduction and General Plan Actions | | | 937,678 | 876,070 | 941,941 |
| Target GHG Reductions | | | 1,384,355 | 888,509 | 401,347 |
| Additional GHG Reductions Needed to Meet Targets | | | (446,677) | (62,893) | 448,186 |
| GHG Emissions per Capita with Legislative Reductions and General Plan Actions | | | 5.2 | 3.8 | 2.9 |

Source: Data compiled by Ascent Environmental 2018

Notes: CAP = Climate Action Plan; GHG = greenhouse gas; MTCO_{2e} = metric tons of carbon dioxide equivalent.

**FIGURE 5.7-1
CITY OF ELK GROVE GENERAL PLAN PROJECTED GREENHOUSE GAS EMISSIONS AND REDUCTION TARGETS**



Notes: BAU = business-as-usual; does not account for GHG reduction actions from the General Plan or the 2013 CAP; GHG = greenhouse gas; GP = general plan; MTCO_{2e} = metric tons of carbon dioxide equivalent.

5.7 GREENHOUSE GAS EMISSIONS AND ENERGY

Although implementation of the proposed General Plan would result in both direct and indirect GHG emissions, the CAP and proposed General Plan policies would reduce emissions consistent with local GHG emissions reduction targets that are aligned with the statewide 2020 and 2030 targets established by the State's Scoping Plan. The proposed General Plan, along with the proposed CAP Update, would be consistent with the directives of AB 32, the Global Warming Solutions Act of 2006, which requires the State to reduce GHG emissions to 1990 levels by 2020, and SB 32, which requires the State to reduce GHG emissions 40 percent below 1990 levels by 2030. Therefore, the proposed General Plan and CAP Update would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. This impact would be **less than significant**.

Mitigation Measures

No additional mitigation required beyond compliance with the CAP Update and proposed General Plan policies.

Potential to Conflict with Long-term Statewide GHG Emissions Reduction Goal for 2050 (Standard of Significance 2)

Impact 5.7.2 Adoption of the proposed General Plan and CAP Update would result in emission reductions that are consistent with statewide reduction targets for 2020 and 2030. However, based on current emission estimates for the City projected for 2050, and considering the proposed policies and programs included in the General Plan and CAP Update, the proposed General Plan and CAP Update would likely not result in sufficient GHG reductions for the City to meet the longer-term goal for 2050 as stated in EO S-3-05. Thus, this impact would be **potentially significant**.

As noted in the 2017 Scoping Plan, the long-term goal of achieving a GHG emissions reduction of 80 percent below 1990 levels by 2050, equivalent to 2 MTCO_{2e} per capita, represents the State's commitment to achieving its "fair share" of GHG emissions reductions required under the Paris Agreement, which identified scientifically-based global emissions levels required to put the world on track to limit global warming to below 2°C, thereby avoiding the most catastrophic and dangerous impacts of global climate change (CARB 2017b, p. 99). Additionally, the 2020 and 2030 targets codified into State law per AB 32 and SB 32 were established consistent with the long-term trajectory of emissions reductions required to achieve the 2050 goal.

Although the statewide GHG reduction goals for 2050 have not been codified, it is still considered imperative that projects demonstrate progress toward achieving longer-term GHG reduction goals under CEQA. A recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014) 231 Cal.App.4th 1056, examined whether EO S-3-05 should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. The case was reviewed by the California Supreme Court in January 2017 and a decision was released on July 13, 2017. The California Supreme Court ruled that SANDAG did not abuse its discretion by declining to adopt EO S-3-05 as a measure of significance for the specific GHG reduction target years, especially in analyzing the significance of impacts in 2050. Despite this, the California Supreme Court cautioned that future analyses may have greater capacity to analyze impacts through 2050 and would be required to perform those analyses if that capacity is achievable.

CAP Update and Proposed General Plan Policies That Provide Mitigation

The proposed General Plan includes Policy NR-5-1 that requires the City to achieve GHG emissions reductions that are consistent with State targets. Additionally, as stated in the proposed General Plan implementation programs under "CAP and GHG emissions inventory updates," the City would conduct an update of the community-wide GHG emissions inventory every five years to assess progress to date in meeting the adopted targets, and periodically update the CAP in response to post-2030 emissions reduction targets and associated updates to the Scoping Plan that could be approved by the State, in light of State's long-term 2050 emission reduction goal established by EO S-3-05 and guidance stated in the 2017 Scoping Plan.

Conclusion

As discussed above under Impact 5.7-1, adoption of the proposed General Plan and CAP Update would result in emissions reductions that would ensure the City would meet the 2020 and 2030 emissions limits of 7.6 and 4.1 MTCO₂e per capita, respectively. As a result of the GHG reduction measures listed in the CAP Update, per capita emissions would continue to decline beyond 2030. As shown in **Table 5.7-6**, 2050 per capita emissions would be reduced to 2.9 MTCO₂e.

However, based on current emission estimates for the City projected for 2050, and considering the proposed policies and programs listed above under Impact 5.7-1, the proposed General Plan would not result in sufficient GHG reductions for the City to meet the longer-term 2050 goal of 1.4 MTCO₂e per capita. Additional technological advances across multiple sectors would be required to reduce emissions further, combined with additional regulatory actions at the State or federal levels that are currently unknown beyond the year 2030. Currently, the 2017 Scoping Plan only identifies known commitments and proposed actions that will be taken by the State to achieve the 2030 target. Furthermore, the State has not yet proposed a detailed update to the Scoping Plan for future targets that may be adopted beyond 2030 on the path to meeting the 2050 goal. The City would continue to monitor the status of communitywide GHG emissions over time; monitor and report on progress toward achieving adopted GHG reduction goals through implementation of the General Plan and CAP; and, identify new or modified GHG reduction measures that would achieve longer-term, post-2030 targets that may be set by the State or others in the future. This is a **significant** impact.

Mitigation Measures

No additional feasible mitigation available beyond compliance with the CAP Update and proposed General Plan policies.

Despite the General Plan policies, implementation programs, and CAP Update GHG reduction measures that would be implemented under the Project, per capita emissions would not meet the long-term adjusted statewide emissions reduction goal of 1.4 MTCO₂e per capita by 2050, consistent with EO S-3-05 and the 2017 Scoping Plan. No additional mitigation or information regarding future available technology advancements or future State plans for achieving post-2030 emission reductions is available at this time that can be further quantified. This impact would be **significant and unavoidable**.

Energy Use and Conservation (Standards of Significance 3, 4, 5, and 6)

Impact 5.7.3 Land uses developed and operated under the proposed General Plan would increase electricity and natural gas consumption. Buildings developed under the proposed General Plan would comply with CCR Title 24 standards for

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building energy efficiency, and actions under the proposed CAP would include zero net energy requirements in 2020 and 2030 for residential and commercial development, respectively. Actions under the proposed General Plan and CAP would include the requirement of a 15 percent VMT reduction for new development projects, installation of more bicycle and pedestrian infrastructure, as well as improved public transportation options that would reduce VMT and associated consumption of automotive fuel. Construction-related energy consumption would be temporary and not require additional capacity or increased peak or base period demands for electricity or other forms of energy. Thus, energy consumption associated with the development of the project would not result in wasteful, inefficient, or unnecessary consumption of energy. Further, development of the project would not conflict with a State or local plan for renewable energy or energy efficiency. This impact would be **less than significant**.

Appendix F of the State CEQA Guidelines requires the consideration of the energy implications of a project. CEQA requires mitigation measures to reduce “wasteful, inefficient, and unnecessary” energy usage (PRC Section 21100, subdivision [b][3]). Neither the law nor the State CEQA Guidelines establish criteria that define wasteful, inefficient, or unnecessary use. Compliance with CCR Title 24 Energy Efficiency Standards and zero net energy building standards in 2020 and 2030 for residential and commercial, respectively, would result in energy-efficient buildings. However, compliance with building codes does not adequately address all potential energy impacts during construction and operation. For example, energy would be required to transport people and goods to and from the Planning Area.

Construction-Related Energy

Energy would be required to construct, operate, and maintain construction equipment and to produce and transport construction materials associated with the construction of the development of the proposed General Plan. The one-time energy expenditure required to construct the physical buildings and infrastructure associated with the development would be nonrecoverable. Most energy consumption would result from operation of construction equipment and vehicle trips associated with commutes by construction workers and haul trucks supplying materials.

An estimated 4,525,380 gallons of gasoline and 228,362 gallons of diesel would be consumed each year during construction in the Planning Area, as shown in **Table 5.7-7**. The energy needs for project construction would be temporary and are not anticipated to require additional capacity or increase peak or base period demands for electricity or other forms of energy. Use of construction equipment and associated energy consumption would be typical of that associated with construction of new residential and commercial projects in a suburban setting.

**TABLE 5.7-7
CONSTRUCTION ENERGY CONSUMPTION**

| | Gallons/Year |
|----------|---------------------|
| Gasoline | 4,525,380 |
| Diesel | 228,362 |

Transportation Energy

Fuel use estimates were calculated from the combination of fuel consumption rates and fuel mix by vehicle class from CARB’s EMFAC2014 model with overall VMT and mode share by vehicle class modeled for the project in CalEEMod (see Section 5.3 “Air Quality,” and **Appendix C** of this Draft EIR). State and federal regulations regarding standards for vehicles in California are designed to reduce wasteful, unnecessary, and inefficient use of energy for transportation. Implementing the proposed General Plan and CAP Update would include VMT reduction requirements for new development, new bicycle and pedestrian facilities, improved public transit, and other trip reducing measures.

Fuel consumption associated with vehicle trips generated by implementation of the project would not be considered inefficient, wasteful, or unnecessary in comparison to that associated with other, similar cities in the region. The estimated weekday daily VMT (74,519,700 miles) in the region is based on the regional average for 2036 as reported in the Sacramento Area Council of Government’s 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (2016). Daily VMT associated with project buildout would be 4,562,035, accounting for approximately 6 percent of regional VMT. Annual VMT associated with the Project would be 1,665,142,793 and would consume 85,397,417 gallons of gasoline per year and 24,600,519 gallons of diesel per year (**Table 5.7-8**).

Per capita fuel consumption associated with buildout of the General Plan would result in decreased gasoline use per capita by 19 percent and an increase in diesel consumption by 51 percent.

**TABLE 5.7-8
ANNUAL GASOLINE AND DIESEL CONSUMPTION ASSOCIATED WITH THE PROPOSED GENERAL PLAN**

| Vehicle Category | Gasoline (gallons/year) | | Diesel (gallons/year) | |
|-----------------------------|-------------------------|-----------------------|-----------------------|-----------------------|
| | Baseline | Proposed General Plan | Baseline | Proposed General Plan |
| Passenger Vehicles | 34,133,190 | 42,159,997 | 185,725 | 450,827 |
| Trucks | 40,940,306 | 42,230,806 | 10,707,147 | 23,127,574 |
| Buses | 608,793 | 791,113 | 859,796 | 979,188 |
| Other Vehicles | 264,065 | 215,501 | 43,575 | 42,930 |
| Total (All Vehicle Types) | 75,946,355 | 85,397,417 | 11,796,244 | 24,600,519 |
| Population | 171,059 | 236,346 | 171,059 | 236,346 |
| Per Capita Fuel Consumption | 444 | 361 | 69 | 104 |

Source: Data compiled by Ascent Environmental 2018

Existing Regulations, CAP Update, and Proposed General Plan Policies That Provide Mitigation

The project would reduce the City’s VMT by reductions in VMT from new development, new bicycle and pedestrian facilities, and improved transit connections and trip reduction features through the following policies and programs:

- CAP Measure TACM-1 – Local Goods
- CAP Measure TACM-2 – Transit Oriented Development

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- CAP Measure TACM-3 – Intra-City Transportation Demand Management
- CAP Measure TACM-4 – Pedestrian and Bicycle Travel
- CAP Measure TACM-5 – Affordable Housing
- CAP Measure TACM-6 – Vehicle Miles Traveled Reduction Policy
- CAP Measure TACM-7 – Traffic Calming Measures
- CAP Measure TACM-9 – Electric Vehicle Charging Stations
- GP Zoning Code Update
 - Requirements for bicycle parking, pedestrian amenities, and transit access (as applicable) for new commercial and multifamily residential development
 - Requirements for new commercial and multifamily residential developments to provide electric vehicle charging stations
- GP Design Guidelines Update
 - Transit-oriented development design guidelines
 - Pedestrian environment and amenities
 - Shade requirements for new commercial and multifamily residential development
- GP Housing Programs
 - Continue to promote and support energy efficiency in new construction by encouraging developers to utilize SMUD energy programs and other energy efficiency programs
 - Continue to encourage participation in SMUD’s PV Pioneer program by issuing PV system permits at no charge upon SMUD’s approval
- GP Transportation Plans and Programs
 - Transportation Demand Management (TDM) Program updates
 - City employee incentives for alternative transportation
 - Coordination for regional TDM efforts
 - Citywide complete streets analysis
 - Bicycle, Pedestrian, and Trails Master Plan update
 - Review of and modifications to transit service
 - Incentives for alternative fueling stations

- Coordination for EV charging facility incentives
- GP Financing and Budgeting
 - Funding for transit and active transportation improvements

BUILDING ENERGY

Operation of residential, commercial, educational, and industrial buildings in the Planning Area would include typical use of electricity and natural gas for lighting, space and water heating, appliances, and landscape maintenance activities. Indirect energy use would include wastewater treatment and solid waste removal. Implementing the project would increase electricity and natural gas consumption in the region relative to existing conditions and would require construction of new utility connections and potentially new substations. **Table 5.7-9** summarizes estimated operational energy demand at buildout.

Existing Regulations, CAP Update, and Proposed General Plan Policies That Provide Mitigation

Buildings constructed in the Planning Area would meet the CCR Title 24 standards for energy efficiency that are in effect at the time of construction. Future development would occur consistent with the General Plan over several decades, and these standards likely would continue to be updated in the future to require improved building energy efficiency. Per capita electricity building energy would decrease by 20 percent between baseline and buildout of the proposed General Plan, and natural gas building energy would decrease 14 percent during the same time.

Implementation of the following actions and programs in the proposed General Plan and CAP would further reduce building energy consumption in new development:

- CAP Measure BE-1 – Promote Energy Conservation
- CAP Measure BE-4 – CALGreen Tier 1: New Construction
- CAP Measure BE-5 – Zero Net Energy: New Construction
- CAP Measure BE-7 – Solar PV in All Residential and Commercial Development
- CAP Measure BE-9 – Increase Tree Planting
- GP Building Code Update
 - Update the building code to incorporate current state requirements for green building
 - Adopt a requirement for new single family residential development to pre-wire for plug-in electric vehicles
- GP Environment, Conservation and Sustainability
 - Outreach on energy conservation and renewable energy programs and incentives

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- Remove Municipal Code impediments to renewable energy programs and incentives
- GP City Services and Operations
 - Urban forestry best management practices
 - Energy and water retrofits for City facilities
 - Solar energy systems for City facilities

**TABLE 5.7-9
OPERATIONAL ENERGY CONSUMPTION ASSOCIATED WITH PROPOSED GENERAL PLAN AT FULL BUILDOUT**

| | Electricity (kWh/year) | | Natural Gas (kBTU/year) | |
|-------------------------------|------------------------|-----------------------|-------------------------|-----------------------|
| | Baseline | Proposed General Plan | Baseline | Proposed General Plan |
| Total Energy Consumption | 64,737,634 | 71,515,795 | 111,963,831 | 132,583,176 |
| Per Capita Energy Consumption | 378 | 303 | 655 | 561 |

Source: Data compiled by Ascent Environmental 2018

Notes: kWh = kilowatt hours; kBTU = thousand British thermal units.

Conclusion

According to Appendix F of the State CEQA Guidelines, the means to achieve the goals of conserving energy including decreasing overall per capita energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. These actions would reduce building energy consumption and would reduce per capita energy use for both electricity and natural gas building energy. Through the policies and actions of the proposed General Plan and CAP, incorporation of bicycle and pedestrian facilities and increased transit availability and trip reduction features, implementing the project would not result in a wasteful or inefficient use of transportation-related energy. Further, implementation of the project would not conflict with State or local plans for renewable energy or energy efficiency.

Energy consumption through construction, transportation, or building operation associated with the project would not be considered wasteful, inefficient, or unnecessary. This impact would be **less than significant**.

Mitigation Measures

No additional mitigation required beyond compliance with the CAP Update and proposed General Plan policies.

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