# GREENHOUSE GAS TECHNICAL REPORT

## Introduction

This technical report examines the direct and indirect impacts of the Proposed Sunset & Everett Project on the east side of Sunset Boulevard north of Everett Street in the City of Los Angeles on greenhouse gas (GHG) emissions and global climate change. This analysis discloses GHG emissions generation and by addressing the Project's consistency with applicable GHG emission reduction plans, policies, and regulations. Calculation worksheets and documentation are included in the Technical Appendix to this analysis.

## Environmental Setting

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and storms. Global warming, a related concept, is the observed increase in average temperature of Earth's surface and atmosphere. One identified cause of global warming is an increase of GHG emissions in the atmosphere. GHG emissions are those compounds in Earth's atmosphere that play a critical role in determining Earth's surface temperature.

Earth's natural warming process is known as the "greenhouse effect." It is called the greenhouse effect because Earth and the atmosphere surrounding it are like a greenhouse with glass panes in that the glass allows solar radiation (sunlight) into Earth's atmosphere but prevents radiative heat from escaping, thus warming Earth's atmosphere. Some levels of GHG emissions keep the average surface temperature of Earth close to a hospitable 60 degrees Fahrenheit. However, it is believed that excessive concentrations of anthropogenic GHG emissions in the atmosphere can result in increased global mean temperatures, with associated adverse climatic and ecological consequences.[1]

Scientists studying the particularly rapid rise in global temperatures have determined that human activity has resulted in increased emissions of GHG emissions, primarily from the burning of fossil fuels (from motor vehicle travel, electricity generation, consumption of natural gas, industrial activity, manufacturing), deforestation, agricultural activity, and the decomposition of solid waste. Scientists refer to the global warming context of the past century as the "enhanced greenhouse effect" to distinguish it from the natural greenhouse effect.[2]

Global GHG emissions due to human activities have grown since pre-industrial times. As reported by the United States Environmental Protection Agency (USEPA), global carbon emissions from fossil fuels increased by over 16 times between 1900 and 2008 and by about 1.5 times between 1990 and

1 Intergovernmental Panel on Climate Change, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)].

2 Center for Climate and Energy Solutions, Climate Change 101: Understanding and Responding to Global Climate Change.

2008. In addition, in the Global Carbon Budget 2014 report, published in September 2014, atmospheric carbon dioxide ($CO_2$) concentrations in 2013 were found to be 43 percent above the concentration at the start of the Industrial Revolution, and the present concentration is the highest during at least the last 800,000 years.[3] Global increases in $CO_2$ concentrations are due primarily to fossil fuel use, with land use change providing another significant but smaller contribution. Regarding emissions of non-$CO_2$ GHG, these have also increased significantly since 1990. In particular, studies have concluded that it is very likely that the observed increase in methane ($CH_4$) concentration is predominantly due to agriculture and fossil fuel use.[4]

In August 2007, international climate talks held under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) led to the official recognition by the participating nations that global emissions of GHG must be reduced. According to the "Ad Hoc Working Group on Further Commitments of Annex I Parties under the Kyoto Protocol," avoiding the most catastrophic events forecast by the United Nations Intergovernmental Panel on Climate Change (IPCC) would entail emissions reductions by industrialized countries in the range of 25 to 40 percent below 1990 levels. Because of the Kyoto Protocol's Clean Development Mechanism, which gives industrialized countries credit for financing emission-reducing projects in developing countries, such an emissions goal in industrialized countries could ultimately spur efforts to cut emissions in developing countries as well.[5]

With regard to the adverse effects of global warming, as reported by the Southern California Association of Governments (SCAG), "Global warming poses a serious threat to the economic well-being, public health, and natural environment in southern California and beyond. The potential adverse impacts of global warming include, among others, a reduction in the quantity and quality of water supply, a rise in sea level, damage to marine and other ecosystems, and an increase in the incidences of infectious diseases. Over the past few decades, energy intensity of the national and state economy has been declining due to the shift to a more service-oriented economy. California ranked fifth lowest among the states in $CO_2$ emissions from fossil fuel consumption per unit of Gross State Product. However, in terms of total $CO_2$ emissions, California is second only to Texas in the nation and is the 12$^{th}$ largest source of climate change emissions in the world, exceeding most nations. The SCAG region, with close to half of the state's population and economic activities, is also a major contributor to the global warming problem."

GHG Emissions Background. GHG emissions include $CO_2$, $CH_4$, nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride ($SF_6$), and nitrogen trifluoride ($NF_3$).[6] Carbon dioxide is the most abundant GHG. Other GHG emissions are less abundant but have higher global warming potential than $CO_2$. Thus, emissions of other GHG emissions are frequently expressed in the equivalent mass of $CO_2$, denoted as $CO_2e$. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation,

3 C. Le Quéré, et al., Global Carbon Budget 2014, (Earth System Science Data, 2015, doi:10.5194/essd–7–47–2015).

4 USEPA, Atmospheric Concentrations of Greenhouse Gas, updated June 2015.

5 United Nations Framework Convention on Climate Change, Press Release—Vienna UN Conference Shows Consensus on Key Building Blocks for Effective International Response to Climate Change, August 31, 2007

6 As defined by California Assembly Bill (AB) 32 and Senate Bill (SB) 104.

transportation, heating, and cooking are the primary sources of GHG emissions. A general description of the GHG emissions is provided in Table 1.

Global Warming Potential (GWP) is one type of simplified index based upon radiative properties used to estimate the potential future impacts of emissions of different gases upon the climate system. The GWP is based on several factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of $CO_2$, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of $CO_2$. The higher the GWP, the more that a given gas warms the Earth compared to $CO_2$ over that period. A summary of the atmospheric lifetime and GWP of selected gases is presented in Table 2.[7] As indicated on the table, the GWP ranges from 1 to 22,800.

Projected Impacts of Global Warming in California. The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system and inability to accurately model it, the uncertainty surrounding climate change may never be eliminated. Nonetheless, the IPCC's Fifth Assessment Report, Summary for Policy Makers states that, "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 greenhouse gas concentrations and other anthropogenic forces together."[8] A report from the National Academy of Sciences concluded that 97 to 98 percent of the climate researchers most actively publishing in the field support the tenets of the IPCC in that climate change is very likely caused by human (i.e., anthropogenic) activity.[9]

According to the California Air Resources Board (CARB), the potential impacts in California due to global climate change may include: loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; more large forest fires; more drought years; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation. Below is a summary of some of the potential effects that could be experienced in California because of global warming and climate change.

***Air Quality.*** Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect and, therefore, its indirect effects, are uncertain. If higher temperatures are accompanied

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7 Atmospheric lifetime is defined as the time required to turn over the global Atmospheric burden. Source: Intergovernmental Panel on Climate Change, IPCC Third Assessment Report: Climate Change 2001 (TAR), Chapter 4: Atmospheric Chemistry and Greenhouse Gases, 2001, p. 247.

8 Intergovernmental Panel on Climate Change, Fifth Assessment Report, Summary for Policy Makers, page 5, 2013, http://ipcc.ch/report/ar5/syr/. Accessed April 2020.

9 Anderegg, William R. L., J.W. Prall, J. Harold, S.H., Schneider, Expert Credibility in Climate Change, Proceedings of the National Academy of Sciences of the United States of America. 2010;107:12107-12109.

by drier conditions, the potential for large wildfires could increase, which, in turn, would exacerbate air quality. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state.[10] However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires.

In 2009, the California Natural Resources Agency (CNRA) published the *California Climate Adaptation Strategy* as a response to the Governor's Executive Order S-13-2008.[11] The CNRA report lists specific recommendations for state and local agencies to best adapt to the anticipated risks posed by a changing climate. In accordance with the *California Climate Adaptation Strategy*, the California Energy Commission (CEC) was directed to develop a website on climate change scenarios and impacts that would be beneficial for local decision makers.[12] The website, known as Cal-Adapt, became operational in 2011[13] and provides a projection of potential future climate scenarios. The data are comprised of the average values (i.e., temperature, sea-level rise, snowpack) from a variety of scenarios and models and are meant to illustrate how the climate may change based on a variety of different potential social and economic factors.

***Water Supply.*** Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. Studies have found that, "[c]onsiderable uncertainty about precise impacts of climate change on California hydrology and water resources will remain until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change."[14] For example, some studies identify little change in total annual precipitation in projections for California while others show significantly more precipitation.[15] Warmer, wetter winters would increase the amount of runoff available for groundwater recharge; however, this additional runoff would occur at a time when some basins are either being recharged at their maximum capacity or are already full. Conversely, reductions in spring runoff and higher evapotranspiration because of higher temperatures could reduce the amount of water available for recharge.[16]

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10 California Environmental Protection Agency, Preparing California for Extreme Heat: Guidance and Recommendations, October 2013, https://www.cdph.ca.gov/Programs/OHE/CDPH%20Document%20Library/CCHEP-General/CDPH-EPA-2013-Preparing-CA-for-Extreme-Heat_ADA.pdf. Accessed April 2020

11 California Natural Resources Agency, Climate Action Team, 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008, 2009.

12 California Natural Resources Agency, Climate Action Team, 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008, 2009.

13 The Cal-Adapt website address is: http://cal-adapt.org.

14 Pacific Institute for Studies in Development, Environment and Security, Climate Change and California Water Resources: A Survey and Summary of the Literature, July 2003, page 5, http://www.pacinst.org/reports/climate_change_and_california_water_resources.pdf. Accessed April 2020.

15 Pacific Institute for Studies in Development, Environment and Security, Climate Change and California Water Resources: A Survey and Summary of the Literature, July 2003, http://www.pacinst.org/reports/climate_change_and_california_water_resources.pdf. Accessed April 2020.

16 California Natural Resources Agency, Safeguarding California: Reducing Climate Risk, an Update to the 2009 California Climate Adaptation Strategy, 2014.

The California Department of Water Resources report on climate change and effects on the State Water Project (SWP), the Central Valley Project, and the Sacramento-San Joaquin Delta, concludes that "climate change will likely have a significant effect on California's future water resources…[and] future water demand." It also reports that "much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain."[17] It also reports that the relationship between climate change and its potential effect on water demand is not well understood, but "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future." Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows.[18] In its *Fifth Assessment Report*, the IPCC states "Changes in the global water cycle in response to the warming over the 21st century will not be uniform. The contrast in precipitation between wet and dry regions and between wet and dry seasons will increase, although there may be regional exceptions."[19]

***Hydrology and Sea Level Rise.*** As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide, and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes: expansion of seawater as the oceans warm, and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

***Agriculture.*** California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. Higher $CO_2$ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.[20]

***Ecosystems and Wildlife.*** Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists expect that

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17 California Department of Water Resources Climate Change Report, Progress on Incorporating Climate Change into Planning and Management of California's Water Resources, July 2006, page 2-54, https://water.ca.gov/LegacyFiles/climatechange/docs/CCprogress_nov06.pdf. Accessed April 2020

18 California Department of Water Resources Climate Change Report, Progress on Incorporating Climate Change into Planning and Management of California's Water Resources, July 2006, page 2-75, https://water.ca.gov/LegacyFiles/climatechange/docs/CCprogress_nov06.pdf. Accessed April 2020

19 Intergovernmental Panel on Climate Change, Fifth Assessment Report, Summary for Policy Makers, 2013, page 20.

20 California Climate Change Center, Our Changing Climate: Assessing the Risks to California, 2006, https://www.ucsusa.org/resources/our-changing-climate-assessing-risks-california. Accessed April 2020.

the average global surface temperature could rise by 2-11.5°F (1.1-6.4°C) by 2100, with significant regional variation.[21] Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as 2 feet along most of the United States coastline. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes such as carbon cycling and storage.[22]

**Table 1**
**Description of Identified GHG Emissions[a]**

| Greenhouse Gas | General Description |
|---|---|
| **Carbon Dioxide ($CO_2$)** | An odorless, colorless GHG, which has both natural and anthropocentric sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources of $CO_2$ are burning coal, oil, natural gas, and wood. |
| **Methane ($CH_4$)** | A flammable gas and is the main component of natural gas. When one molecule of $CH_4$ is burned in the presence of oxygen, one molecule of $CO_2$ and two molecules of water are released. A natural source of $CH_4$ is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain $CH_4$, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle. |
| **Nitrous Oxide ($N_2O$)** | A colorless GHG. High concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. $N_2O$ is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, racecars, and as an aerosol spray propellant. |
| **Hydrofluorocarbons (HFCs)** | Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in $CH_4$ or ethane ($C_2H_6$) with chlorine and/or fluorine atoms. CFCs are non-toxic, non-flammable, insoluble, and chemically unreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. Because they destroy stratospheric ozone, the production of CFCs was stopped as required by the Montreal Protocol in 1987. HFCs are synthetic man-made chemicals that are used as a substitute for CFCs as refrigerants. HFCs deplete stratospheric ozone, but to a much lesser extent than CFCs. |
| **Perfluorocarbons (PFCs)** | PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface destroy the compounds. PFCs have |

[21] National Research Council, Advancing the Science of Climate Change, 2010, http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/Science-Report-Brief-final.pdf. Accessed April 2020.

[22] Parmesan, C., and H. Galbraith, Observed Impacts of Global Climate Change in the U.S., Prepared for the Pew Center on Global Climate Change, November 2004, https://www.c2es.org/site/assets/uploads/2004/11/observed-impacts-climate-change-united-states.pdf. Accessed April 2020.

**Table 1**
**Description of Identified GHG Emissions[a]**

| Greenhouse Gas | General Description |
|---|---|
| | very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. The two main sources of PFCs are primary aluminum production and semi-conductor manufacturing. |
| **Sulfur Hexafluoride ($SF_6$)** | An inorganic, odorless, colorless, non-toxic, and non-flammable gas. $SF_6$ is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection. |
| **Nitrogen Trifluoride ($NF_3$)** | An inorganic, non-toxic, odorless, non-flammable gas. $NF_3$ is used in the manufacture of semi-conductors, as an oxidizer of high-energy fuels, for the preparation of tetrafluorohydrazine, as an etchant gas in the electronic industry, and as a fluorine source in high power chemical lasers. |
| *GHG emissions identified in this table are ones identified in the Kyoto Protocol and other synthetic gases recently added to the IPCC's Fifth Assessment Report.*<br>*Source: Association of Environmental Professionals, Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Final, June 29, 2007; Environmental Protection Agency, Acute Exposure Guideline Levels (AEGLs) for Nitrogen Trifluoride; January 2009.* | |

**Table 2**
**Atmospheric Lifetimes and Global Warming Potential**

| Gas | Atmospheric Lifetime (years) | Global Warming Potential (100-year time horizon) |
|---|---|---|
| Carbon Dioxide ($CO_2$) | 50–200 | 1 |
| Methane ($CH_4$) | 12 (+/-3) | 25 |
| Nitrous Oxide ($N_2O$) | 114 | 298 |
| HFC-23: Fluoroform ($CHF_3$) | 270 | 14,800 |
| HFC-134a: 1,1,1,2-Tetrafluoroethane ($CH_2FCF_3$) | 14 | 1,430 |
| HFC-152a: 1,1-Difluoroethane ($C_2H_4F_2$) | 1.4 | 124 |
| PFC-14: Tetrafluoromethane ($CF_4$) | 50,000 | 7,390 |
| PFC-116: Hexafluoroethane ($C_2F_6$) | 10,000 | 12,200 |
| Sulfur Hexafluoride ($SF_6$) | 3,200 | 22,800 |
| Nitrogen Trifluoride ($NF_3$) | 740 | 17,200 |
| *Source: IPCC, Climate Change 2007: Working Group I: The Physical Science Basis, Direct Global Warming Potentials* | | |

## Regulatory Framework: Federal

In response to growing scientific and political concern with global climate change, federal and state entities have adopted a series of laws to reduce emissions of GHG emissions to the atmosphere.

***Federal Clean Air Act.*** The U.S. Supreme Court ruled in *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007), that $CO_2$ and other GHG emissions are pollutants under the federal Clean Air Act (CAA), which the USEPA must regulate if it determines they pose an endangerment to public health or welfare. The U.S. Supreme Court did not mandate that the USEPA enact regulations

to reduce GHG emissions. Instead, the Court found that the USEPA could avoid acting if it found that GHG emissions do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHG emissions contribute to climate change.

On April 17, 2009, the USEPA issued a proposed finding that GHG emissions contribute to air pollution that may endanger public health or welfare. On April 24, 2009, the proposed rule was published in the Federal Register under Docket ID No. EPA-HQ-OAR-2009-0171. The USEPA stated that high atmospheric levels of GHG emissions "are the unambiguous result of human emissions and are very likely the cause of the observed increase in average temperatures and other climatic changes." The USEPA further found that "atmospheric concentrations of greenhouse gases endanger public health and welfare within the meaning of Section 202 of the Clean Air Act." The findings were signed by the USEPA Administrator on December 7, 2009. The final findings were published in the Federal Register on December 15, 2009. The final rule was effective on January 14, 2010.[23] While these findings alone do not impose any requirements on industry or other entities, this action is a prerequisite to regulatory actions by the USEPA, including, but not limited to, GHG emissions standards for light-duty vehicles.

On April 4, 2012, the USEPA published a proposed rule to establish, for the first time, a new source performance standard for GHG emissions. Under the proposed rule, new fossil fuel–fired electric generating units larger than 25 megawatts (MW) are required to limit emissions to 1,000 pounds of $CO_2$ per MW-hour ($CO_2$/MWh) on an average annual basis, subject to certain exceptions. Subsequently, on April 23, 2018, the USEPA issued a policy stating that $CO_2$ emissions from biomass-fired and other biogenic sources would be considered carbon neutral when used for energy production at stationary sources.

On April 17, 2012, the USEPA issued emission rules for oil production and natural gas production and processing operations, which are required by the CAA under Title 40 of the Code of Federal Regulations, Parts 60 and 63. The final rules include the first federal air standards for natural gas wells that are hydraulically fractured, along with requirements for several other sources of pollution in the oil and gas industry that currently are not regulated at the federal level.[24]

***Corporate Average Fuel Economy (CAFE) Standards.*** In response to the *Massachusetts v. Environmental Protection Agency* ruling, the George W. Bush Administration issued Executive Order 13432 in 2007, directing the USEPA, the United States Department of Transportation (USDOT), and the United States Department of Energy (USDOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency for and GHG emissions from cars and light-duty trucks for model year 2011; in 2010, the USEPA and the NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

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23 USEPA, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, Final Rule.

24 USEPA, 2012 Final Rules for Oil and Natural Gas Industry, April 17, 2012, https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/2012-final-rules-oil-and-natural-gas-industry, accessed April 2020.

In 2010, President Obama issued a memorandum directing the USEPA, USDOT, USDOE, and NHTSA to establish additional standards regarding fuel efficiency and GHG emissions reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and NHTSA proposed stringent, coordinated federal GHG emissions and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards are projected to achieve 163 grams/mile of $CO_2$ in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon (mpg) if the standards were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021. In March 2020, NHTSA and USEPA adopted new less stringent standards covering model years 2021 through 2026.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011 the USEPA and the NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for $CO_2$ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program would reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.[25]

Building on the success of the first phase of standards, in August 2016, the USEPA and the NHTSA finalized Phase 2 standards for medium and heavy-duty vehicles through model year 2027 that will improve fuel efficiency and cut carbon pollution. The Phase 2 standards were to lower $CO_2$ emissions by approximately 1.1 billion metric tons and save vehicle owners fuel costs of about $170 billion.[26] On August 10, 2021, NHTA proposed new CAFE standards for 2024-2026 that would increase the stringency of standards by 8 percent per year rather than the previous 1.5 percent.

On September 19, 2019, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and USEPA issued a final action entitled the "One National Program Rules" to enable the federal government to provide nationwide uniform fuel economy and greenhouse gas (GHG) emission standards for automobile and light duty trucks. This action finalizes the Safe Affordable Fuel Efficient (SAFE) Vehicles Rule and clarifies that federal law preempts state and local tailpipe GHG emissions standards as well as zero emission vehicle (ZEV) mandates. The SAFE Vehicle Rule also withdraws the CAA waiver granted to the State of California that allowed the state to enforce its own Low Emission Vehicle program.[27] On March 31, 2020, Part II of the SAFE Vehicles was issued and sets carbon dioxide emissions and CAFE standards for passenger vehicles and light

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25 The emission reductions attributable to the regulations for medium- and heavy-duty trucks were not included in the Project's emissions inventory due to the difficulty in quantifying the reductions. Excluding these reductions results in a more conservative (i.e., higher) estimate of emissions for the Project.

26 USEPA and NHTSA Adopt Standards to Reduce GHG and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles for Model Year 2018 and Beyond, August 2016.

27 U.S. Department of Transportation and EPA. 2019. *One National Program Rule on Federal Preemption of State Fuel Economy Standards*, https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-one-national-program-federal-preemption-state#:~:text=In%20this%20action%20NHTSA%20is,and%20local%20programs%20are%20preempted.

duty trucks, covering model years 2021-2026.[28] On December 21, 2021, NHTA repealed the SAFE I Rule.

***Energy Independence and Security Act.*** The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and the NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks, and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of the EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."[29]

**Regulatory Framework: State**

***Scoping Plan for Achieving Carbon Neutrality (Scoping Plan).*** The Scoping Plan is a GHG emission reduction roadmap developed and updated by the California Air Resources Board (CARB) at least once every five years, as required by Assembly Bill (AB) 32. It lays out the transformations needed across various sectors to reduce GHG emissions and reach the State's climate targets. CARB published the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update) in November 2022, as the third update to the initial plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 target of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business as usual activities.[30] The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG targets. The 2013 Scoping Plan Update (adopted in 2014) assessed

28 U.S. Department of Transportation. 2020. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/final_safe_preamble_web_version_200330.pdf.

29 A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

30 CARB. 2008. Climate Change Scoping Plan. ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/document/adopted_scoping_plan.pdf.

progress toward achieving the 2020 target and made the case for addressing short-lived climate pollutants (SLCPs).[31] The 2017 Scoping Plan Update,[32] shifted focus to the newer Senate Bill (SB) 32 goal of a 40 percent reduction below 1990 levels by 2030 by laying out a detailed cost-effective and technologically feasible path to this target, and also assessed progress towards achieving the AB 32 goal of returning to 1990 GHG levels by 2020. The 2020 goal was ultimately reached in 2016, four years ahead of the schedule called for under AB 32.

The 2022 Scoping Plan Update is the most comprehensive and far-reaching Scoping Plan developed to date. It identifies a technologically feasible, cost-effective, and equity-focused path to achieve new targets for carbon neutrality by 2045 and to reduce anthropogenic GHG emissions to at least 85 percent below 1990 levels, while also assessing the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan.[33] The 2030 target is an interim but important stepping stone along the critical path to the broader goal of deep decarbonization by 2045. The relatively longer path assessed in the 2022 Scoping Plan Update incorporates, coordinates, and leverages many existing and ongoing efforts to reduce GHGs and air pollution, while identifying new clean technologies and energy. Given the focus on carbon neutrality, the 2022 Scoping Plan Update also includes discussion for the first time of the natural and working lands sectors as sources for both sequestration and carbon storage, and as sources of emissions as a result of wildfires. Table 3 summarizes the potential scenarios to reduce emissions through 2045.

**Table 3**
**Estimated Statewide Greenhouse Gas Emissions Reductions in the 2022 Scoping Plan**

| Emissions Scenario | GHG Emissions ($MMTCO_2e$) |
|---|---|
| **2019** | |
| 2019 State GHG Emissions | 404 |
| **2030** | |
| 2030 BAU Forecast | 312 |
| 2030 GHG Emissions without Carbon Removal and Capture | 233 |
| 2030 GHG Emissions with Carbon Removal and Capture | 226 |
| 2030 Emissions Target Set by AB 32 (i.e., 1990 level by 2030) | 260 |
| Reduction below Business-As-Usual necessary to achieve 1990 levels by 2030 | 52 (16.7%)[a] |
| **2045** | |
| 2045 BAU Forecast | 266 |
| 2045 GHG Emissions without Carbon Removal and Capture | 72 |
| 2045 GHG Emissions with Carbon Removal and Capture | (3) |

*$MMTCO_2e$ = million metric tons of carbon dioxide equivalents; parenthetical numbers represent negative values.*
*[a] 312 – 260 = 52. 52 / 312 = 16.7%*
*Source: CARB, Final 2022 Climate Change Scoping Plan, November 2022.*

31 CARB. 2014. First Update to the Climate Change Scoping Plan. ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.
32 CARB. 2017. California's 2017 Climate Change Scoping Plan. ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf.
33 CARB, California's 2017 Climate Change Scoping Plan, 2017, ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf.

The 2022 Scoping Plan Update reflects existing and recent direction in the Governor's Executive Orders and State Statutes, which identify policies, strategies, and regulations in support of and implementation of the Scoping Plan. Among these include Executive Order B-55-18 and AB 1279 (The California Climate Crisis Act), which identify the 2045 carbon neutrality and GHG reduction targets required for the Scoping Plan. Table 4 provides a summary of major climate legislation and executive orders issued since the adoption of the 2017 Scoping Plan.

**Table 4**
**Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan**

| Bill/Executive Order | Summary |
|---|---|
| **Assembly Bill 1279 (AB 1279) (Muratsuchi, Chapter 337, Statutes of 2022)**<br>*The California Climate Crisis Act* | AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that the Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable $CO_2$ removal solutions and carbon capture, utilization, and storage (CCUS) technologies.<br><br>This bill is reflected directly in the 2022 Scoping Plan Update. |
| **Senate Bill 905 (SB 905) (Caballero, Chapter 359, Statutes of 2022)**<br>*Carbon Capture, Removal, Utilization, and Storage Program* | SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate CCUS and carbon dioxide removal (CDR) projects and technology.<br>The bill requires CARB, on or before January 1, 2025, to adopt regulations creating a unified state permitting application for approval of CCUS and CDR projects. The bill also requires the Secretary of the Natural Resources Agency to publish a framework for governing agreements for two or more tracts of land overlying the same geologic storage reservoir for the purposes of a carbon sequestration project.<br><br>The 2022 Scoping Plan Update modeling reflects both CCUS and CDR contributions to achieve carbon neutrality. |
| **Senate Bill 846 (SB 846) (Dodd, Chapter 239, Statutes of 2022)**<br>*Diablo Canyon Powerplant: Extension of Operations* | SB 846 extends the Diablo Canyon Power Plant's sunset date by up to five additional years for each of its two units and seeks to make the nuclear power plant eligible for federal loans. The bill requires that the California Public Utilities Commission (CPUC) not include and disallow a load-serving entity from including in their adopted resource plan, the energy, capacity, or any attribute from the Diablo Canyon power plant. The 2022 Scoping Plan Update explains the emissions impact of this legislation. |
| **Senate Bill 1020 (SB 1020) (Laird, Chapter 361, Statutes of 2022)**<br>*Clean Energy, Jobs, and Affordability Act of 2022* | SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90 percent in 2035 and 95 percent in 2040. It accelerates the timeline required to have 100 percent renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035. This bill requires each state agency to individually achieve the 100 percent goal by 2035 with specified requirements. This bill requires the CPUC, California Energy Commission (CEC), and CARB, on or before December 1, 2023, and annually thereafter, to issue a joint reliability progress report that reviews system and local reliability.<br><br>The bill also modifies the requirement for CARB to hold a portion of its Scoping Plan workshops in regions of the state with the most significant |

| Bill/Executive Order | Summary |
|---|---|
| | exposure to air pollutants by further specifying that this includes communities with minority populations or low-income communities in areas designated as being in extreme federal non-attainment. The 2022 Scoping Plan Update describes the implications of this legislation on emissions. |
| **Senate Bill 1137 (SB 1137) (Gonzales, Chapter 365, Statutes of 2022)**<br>*Oil & Gas Operations: Location Restrictions: Notice of Intention: Health protection zone: Sensitive receptors* | SB 1137 prohibits the development of new oil and gas wells or infrastructure in health protection zones, as defined, except for purposes of public health and safety or other limited exceptions. The bill requires operators of existing oil and gas wells or infrastructure within health protection zones to undertake specified monitoring, public notice, and nuisance requirements. The bill requires CARB to consult and concur with the California Geologic Energy Management Division (CalGEM) on leak detection and repair plans for these facilities, adopt regulations as necessary to implement emission detection system standards, and collaborate with CalGEM on public access to emissions detection data. |
| **Senate Bill 1075 (SB 1075) (Skinner, Chapter 363, Statutes of 2022)**<br>*Hydrogen: Green Hydrogen: Emissions of Greenhouse Gases* | SB 1075 requires CARB, by June 1, 2024, to prepare an evaluation that includes: policy recommendations regarding the use of hydrogen, and specifically the use of green hydrogen, in California; a description of strategies supporting hydrogen infrastructure, including identifying policies that promote the reduction of GHGs and short-lived climate pollutants; a description of other forms of hydrogen to achieve emission reductions; an analysis of curtailed electricity; an estimate of GHG and emission reductions that could be achieved through deployment of green hydrogen through a variety of scenarios; an analysis of the potential for opportunities to integrate hydrogen production and applications with drinking water supply treatment needs; policy recommendations for regulatory and permitting processes associated with transmitting and distributing hydrogen from production sites to end uses; an analysis of the life-cycle GHG emissions from various forms of hydrogen production; and an analysis of air pollution and other environmental impacts from hydrogen distribution and end uses.<br><br>This bill would inform the production of hydrogen at the scale called for in the 2022 Scoping Plan Update. |
| **Assembly Bill 1757 (AB 1757) (Garcia, Chapter 341, Statutes of 2022)**<br>*California Global Warming Solutions Act of 2006: Climate Goal: Natural and Working Lands* | AB 1757 requires the California Natural Resources Agency (CNRA), in collaboration with CARB, other state agencies, and an expert advisory committee, to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions, that reduce GHG emissions in 2030, 2038, and 2045 by January 1, 2024. These targets must support state goals to achieve carbon neutrality and foster climate adaptation and resilience.<br><br>This bill also requires CARB to develop standard methods for state agencies to consistently track GHG emissions and reductions, carbon sequestration, and additional benefits from natural and working lands over time. These methods will account for GHG emissions reductions of CO2, methane, and nitrous oxide related to natural and working lands and the potential impacts of climate change on the ability to reduce GHG emissions and sequester carbon from natural and working lands, where feasible. This 2022 Scoping Plan Update describes the next steps and implications of this legislation for the natural and working lands sector. |
| **Senate Bill 1206 (SB 1206) (Skinner, Chapter 884, Statutes of 2022)** | SB 1206 mandates a stepped sales prohibition on newly produced high-global warming potential (GWP) HFCs to transition California's economy toward recycled and reclaimed HFCs for servicing existing HFC-based equipment. Additionally, SB 1206 also requires CARB to develop regulations to increase the adoption of very low-, i.e., GWP < 10, and no-GWP technologies in sectors that currently rely on higher-GWP HFCs. |

| Bill/Executive Order | Summary |
|---|---|
| *Hydrofluorocarbon gases: sale or distribution* | |
| **Senate Bill 27 (SB 27) (Skinner, Chapter 237, Statutes of 2021)**<br>*Carbon Sequestration: State Goals: Natural and Working Lands: Registry of Projects* | SB 27 requires CNRA, in coordination with other state agencies, to establish the Natural and Working Lands Climate Smart Strategy by July 1, 2023. This bill also requires CARB to establish specified CO2 removal targets for 2030 and beyond as part of its Scoping Plan. Under SB 27, CNRA is to establish and maintain a registry to identify projects in the state that drive climate action on natural and working lands and are seeking funding.<br><br>CNRA also must track carbon removal and GHG emission reduction benefits derived from projects funded through the registry.<br>This bill is reflected directly in the 2022 Scoping Plan Update as $CO_2$ removal targets for 2030 and 2045 in support of carbon neutrality. |
| **Senate Bill 596 (SB 596) (Becker, Chapter 246, Statutes of 2021)**<br>*Greenhouse Gases: Cement Sector: Net- zero Emissions Strategy* | SB 596 requires CARB, by July 1, 2023, to develop a comprehensive strategy for the state's cement sector to achieve net-zero-emissions of GHGs associated with cement used within the state as soon as possible, but no later than December 31, 2045. The bill establishes an interim target of 40 percent below the 2019 average GHG intensity of cement by December 31, 2035. Under SB 596, CARB must:<br><br>● Define a metric for GHG intensity and establish a baseline from which to measure GHG intensity reductions.<br>● Evaluate the feasibility of the 2035 interim target (40 percent reduction in GHG intensity) by July 1, 2028.<br>● Coordinate and consult with other state agencies.<br>● Prioritize actions that leverage state and federal incentives.<br>● Evaluate measures to support market demand and financial incentives to encourage the production and use of cement with low GHG intensity.<br><br>The 2022 Scoping Plan Update modeling is designed to achieve these outcomes. |
| **Executive Order N-82-20** | Governor Newsom signed Executive Order N-82-20 in October 2020 to combat the climate and biodiversity crises by setting a statewide goal to conserve at least 30 percent of California's land and coastal waters by 2030. The Executive Order also instructed the CNRA, in consultation with other state agencies, to develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advance the state's carbon neutrality goal and build climate resilience. In addition to setting a statewide conservation goal, the Executive Order directed CARB to update the target for natural and working lands in support of carbon neutrality as part of this Scoping Plan, and to take into consideration the NWL Climate Smart Strategy.<br><br>$CO_2$ Executive Order N-82-20 also calls on the CNRA, in consultation with other state agencies, to establish the California Biodiversity Collaborative (Collaborative). The Collaborative shall be made up of governmental partners, California Native American tribes, experts, business and community leaders, and other stakeholders from across the state. State agencies will consult the Collaborative on efforts to:<br><br>● Establish a baseline assessment of California's biodiversity that builds upon existing data and can be updated over time. |

| Bill/Executive Order | Summary |
|---|---|
| | ● Analyze and project the impact of climate change and other stressors in California's biodiversity.<br>● Inventory current biodiversity efforts across all sectors and highlight opportunities for additional action to preserve and enhance biodiversity.<br><br>CNRA also is tasked with advancing efforts to conserve biodiversity through various actions, such as streamlining the state's process to approve and facilitate projects related to environmental restoration and land management. The California Department of Food and Agriculture (CDFA) is directed to advance efforts to conserve biodiversity through measures such as reinvigorating populations of pollinator insects, which restore biodiversity and improve agricultural production.<br><br>The Natural and Working Lands Climate Smart Strategy informs the 2022 Scoping Plan Update. |
| **Executive Order N-79-20** | Governor Newsom signed Executive Order N-79-20 in September 2020 to establish targets for the transportation sector to support the state in its goal to achieve carbon neutrality by 2045. The targets established in this Executive Order are:<br><br>● 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035.<br>● 100 percent of medium- and heavy-duty vehicles will be zero-emission by 2045 for all operations where feasible, and by 2035 for drayage trucks.<br>● 100 percent of off-road vehicles and equipment will be zero-emission by 2035 where feasible.<br><br>The Executive Order also tasked CARB to develop and propose regulations that require increasing volumes of zero- electric passenger vehicles, medium- and heavy-duty vehicles, drayage trucks, and off-road vehicles toward their corresponding targets of 100 percent zero-emission by 2035 or 2045, as listed above.<br><br>The 2022 Scoping Plan Update modeling reflects achieving these targets. |
| **Executive Order N-19-19** | Governor Newsom signed Executive Order N-19-19 in September 2019 to direct state government to redouble its efforts to reduce GHG emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy. This Executive Order instructs the Department of Finance to create a Climate Investment Framework that:<br><br>● Includes a proactive strategy for the state's pension funds that reflects the increased risks to the economy and physical environment due to climate change.<br>● Provides a timeline and criteria to shift investments to companies and industry sectors with greater growth potential based on their focus of reducing carbon emissions and adapting to the impacts of climate change.<br>● Aligns with the fiduciary responsibilities of the California Public Employees' Retirement System, California State Teachers' Retirement System, and the University of California Retirement Program.<br><br>Executive Order N-19-19 directs the State Transportation Agency to leverage more than $5 billion in annual state transportation spending to help reverse the trend of increased fuel consumption and reduce GHG |

| Bill/Executive Order | Summary |
|---|---|
| | emissions associated with the transportation sector. It also calls on the Department of General Services to leverage its management and ownership of the state's 19 million square feet in managed buildings, 51,000 vehicles, and other physical assets and goods to minimize state government's carbon footprint. Finally, it tasks CARB with accelerating progress toward California's goal of five million ZEV sales by 2030 by:<br><br>● Developing new criteria for clean vehicle incentive programs to encourage manufacturers to produce clean, affordable cars.<br>● Proposing new strategies to increase demand in the primary and secondary markets for ZEVs.<br>● Considering strengthening existing regulations or adopting new ones to achieve the necessary GHG reductions from within the transportation sector.<br><br>The 2022 Scoping Plan Update modeling reflects efforts to accelerate ZEV deployment. |
| **Senate Bill 576 (SB 576) (Umberg, Chapter 374, Statutes of 2019)**<br><br>*Coastal Resources: Climate Ready Program and Coastal Climate Change Adaptation, Infrastructure and Readiness Program* | Sea level rise, combined with storm-driven waves, poses a direct risk to the state's coastal resources, including public and private real property and infrastructure. Rising marine waters threaten sensitive coastal areas, habitats, the survival of threatened and endangered species, beaches, other recreation areas, and urban waterfronts. SB 576 mandates that the Ocean Protection Council develop and implement a coastal climate adaptation, infrastructure, and readiness program to improve the climate change resiliency of California's coastal communities, infrastructure, and habitat. This bill also instructs the State Coastal Conservancy to administer the Climate Ready Program, which addresses the impacts and potential impacts of climate change on resources within the conservancy's jurisdiction. |
| **Assembly Bill 65 (AB 65) (Petrie- Norris, Chapter 347, Statutes of 2019)**<br><br>*Coastal Protection: Climate Adaption: Project Prioritization: Natural Infrastructure: Local General Plans* | This bill requires the State Coastal Conservancy, when it allocates any funding appropriated pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018, to prioritize projects that use natural infrastructure in coastal communities to help adapt to climate change. The bill requires the conservancy to provide information to the Office of Planning and Research on any projects funded pursuant to the above provision to be considered for inclusion into the clearinghouse for climate adaptation information. The bill authorizes the conservancy to provide technical assistance to coastal communities to better assist them with their projects that use natural infrastructure. |
| **Executive Order B-55-18** | Governor Brown signed Executive Order B-55-18 in September 2018 to establish a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. Policies and programs undertaken to achieve this goal shall:<br><br>● Seek to improve air quality and support the health and economic resiliency of urban and rural communities, particularly low-income and disadvantaged communities.<br>● Be implemented in a manner that supports climate adaptation and biodiversity, including protection of the state's water supply, water quality, and native plants and animals.<br><br>This Executive Order also calls for CARB to:<br><br>● Develop a framework for implementation and accounting that tracks progress toward this goal. |

| Bill/Executive Order | Summary |
|---|---|
| | ● Ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.<br>The 2022 Scoping Plan Update is designed to achieve carbon neutrality no later than 2045 and the modeling includes technology and fuel transitions to achieve that outcome. |
| **Senate Bill 100 (SB 100) (De León, Chapter 312, Statutes of 2018)**<br>*California Renewables Portfolio Standard Program: emissions of greenhouse gases* | Under SB 100, the CPUC, CEC, and CARB shall use programs under existing laws to achieve 100 percent clean electricity. The statute requires these agencies to issue a joint policy report on SB 100 every four years. The first of these reports was issued in 2021.<br><br>The 2022 Scoping Plan Update reflects the SB 100 Core Scenario resource mix with a few minor updates. |
| **Assembly Bill 2127 (AB 2127) (Ting, Chapter 365, Statutes of 2018)**<br>*Electric Vehicle Charging Infrastructure: Assessment* | This bill requires the CEC, working with CARB and the CPUC, to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030 and of reducing emissions of GHGs to 40 percent below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure.<br><br>This bill supports the deployment of ZEVs as modeled in the 2022 Scoping Plan Update. |
| **Senate Bill 30 (SB 30) (Lara, Chapter 614, Statutes of 2018)**<br>*Insurance: Climate Change* | This bill requires the Insurance Commissioner to convene a working group to identify, assess, and recommend risk transfer market mechanisms that, among other things, promote investment in natural infrastructure to reduce the risks of climate change related to catastrophic events, create incentives for investment in natural infrastructure to reduce risks to communities, and provide mitigation incentives for private investment in natural lands to lessen exposure and reduce climate risks to public safety, property, utilities, and infrastructure. The bill requires the policies recommended to address specified questions. |
| **Assembly Bill 2061 (AB 2061) (Frazier, Chapter 580, Statutes of 2018)**<br>*Near-zero-emission and Zero-emission Vehicles* | Existing state and federal law sets specified limits on the total gross weight imposed on the highway by a vehicle with any group of two or more consecutive axles. Under existing federal law, the maximum gross vehicle weight of that vehicle may not exceed 82,000 pounds. AB 2061 authorizes a near-zero- emission vehicle or a zero-emission vehicle to exceed the weight limits on the power unit by up to 2,000 pounds.<br><br>This bill supports the deployment of cleaner trucks as modeled in this 2022 Scoping Plan Update. |

The 2022 Scoping Plan Scenario identifies the need to accelerate AB32's 2030 target, from 40 percent to 48 percent below 1990 levels. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet these GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 Scoping Plan Update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

The Scoping Plan Scenario includes references to relevant statutes and Executive Orders, although it is not comprehensive of all existing new authorities for directing or supporting the actions described. Table 2-1 identifies actions related to a variety of sectors such as: smart growth and reductions in Vehicle Miles Traveled (VMT); light-duty vehicles (LDV) and zero-emission vehicles (ZEV); truck ZEVs; reduce fossil energy, emissions, and GHGs for aviation ocean-going vessels, port operations, freight and passenger rail, oil and gas extraction; and petroleum refining; improvements in electricity generation; electrical appliances in new and existing residential and commercial buildings; electrification and emission reductions across industries such as the for food products, construction equipment, chemicals and allied products, pulp and paper, stone/clay/glass/cement, other industrial manufacturing, and agriculture; retiring of combined heat and power facilities; low carbon fuels for transportation, business, and industry; improvements in non-combustion methane emissions, and introduction of low GWP refrigerants.

Achieving the targets described in the 2022 Scoping Plan Update will require continued commitment to and successful implementation of existing policies and programs, and identification of new policy tools and technical solutions to go further, faster. California's Legislature and state agencies will continue to collaborate to achieve the state's climate, clean air, equity, and broader economic and environmental protection goals. It will be necessary to maintain and strengthen this collaborative effort, and to draw upon the assistance of the federal government, regional and local governments, tribes, communities, academic institutions, and the private sector to achieve the state's near-term and longer-term emission reduction goals and a more equitable future for all Californians. The Scoping Plan acknowledges that the path forward is not dependent on one agency, one state, or even one country. However, the State can lead by engaging Californians and demonstrating how actions at the state, regional, and local levels of governments, as well as action at community and individual levels, can contribute to addressing the challenge.

Aligning local jurisdiction action with state-level priorities to tackle climate change and the outcomes called for in the 2022 Scoping Plan Update is identified as critical to achieving the statutory targets for 2030 and 2045. The 2022 Scoping Plan Update discusses the role of local governments in meeting the State's GHG reductions goals. Local governments have the primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth, economic growth, and the changing needs of their jurisdictions. They also make critical decisions on how and when to deploy transportation infrastructure, and can choose to support transit, walking, bicycling, and neighborhoods that do not force people into cars. Local governments also have the option to adopt building ordinances that exceed statewide building code requirements, and play a critical role in facilitating the rollout of ZEV infrastructure. As a result, local government decisions play a critical role in supporting state-level measures to contain the growth of GHG emissions associated with the transportation system and the built environment—the two largest GHG emissions sectors over which local governments have authority. The City has taken the initiative in combating climate change by developing programs and regulations such as the Green New Deal and Green Building Code. Each of these is discussed further below.

***Advanced Clean Cars Regulations.*** In 2012, CARB approved the Advanced Clean Cars (ACC) program, a new emissions-control program for model years 2015–2025.[34] The components of the Advance Clean Car program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero- Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[35]

On September 23, 2020, Governor Gavin Newsom signed Executive Order No. N-79-20 that phases out sales of new gas-powered passenger cars by 2035 in California with an additional ten-year transition period for heavy vehicles. The state would not restrict used car sales, nor forbid residents from owning gas-powered vehicles. In accordance with the Executive Order, CARB is developing a 2020 Mobile Source Strategy, a comprehensive analysis that presents scenarios for possible strategies to reduce the carbon, toxic and unhealthy pollution from cars, trucks, equipment, and ships. The strategies will provide important information for numerous regulations and incentive programs going forward by conveying what is necessary to address the aggressive emission reduction requirements.

In November 2022, the ACC II regulations took effect, setting annual ZEV and plug-in hybrid vehicle sales requirements for model years 2026 to 2035 (ZEV program) and increasingly more stringent exhaust and evaporative emission standards (LEV program) to ensure automakers phase out new sales of internal combustion engine vehicles.

***California Appliance Efficiency Regulations (Title 20, Sections 1601 through 1608).*** The 2014 Appliance Efficiency Regulations, adopted by the CEC, include standards for new appliances (e.g., refrigerators) and lighting, if they are sold or offered for sale in California. These standards include minimum levels of operating efficiency, and other cost- effective measures, to promote the use of energy- and water-efficient appliances.

***California Building Energy Efficiency Standards (Title 24, Part 6).*** California's Energy Efficiency Standards for Residential and Nonresidential Buildings, located at Title 24, Part 6 of the California Code of Regulations and commonly referred to as "Title 24," were established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.[36] The 2022 standards continue to improve upon previous standards for new construction of, and additions and alterations to, residential and non-residential buildings and became effective January 1, 2023. Compliance with Title 24 is enforced through the building permit process. Key changes included

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34 California Air Resources Board, California's Advanced Clean Cars Program, www.arb.ca.gov/msprog/acc/acc.htm, accessed April 2020.

35 Ibid.

36 California Energy Commission, 2019 Building Energy Efficiency Standards, https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency, accessed April 2020.

encouraging heat pump technology for space and water heating, setting electric-ready requirements for single-family homes, expanding solar photovoltaic system and battery storage standards, and strengthening ventilation standards to improve indoor air quality.

***California Green Building Standards (CALGreen Code).*** The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11) are mandatory green building standards for new structures. They focus on measures to reduce water consumption, GHG emissions, and materials and waste. These codes are updated every three years, with the 2022 CalGreen code updates effective January 1, 2023. New requirements address requirements for Level 2 electric vehicle chargers and use of solar photovoltaic shade structures instead of shade trees. Voluntary measures focus on higher EV charging requirements for parking facilities.

**Regulatory Framework: Regional**

***South Coast Air Quality Management District.*** The South Coast Air Quality Management District (SCAQMD) adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons, methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995;
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons by the year 2000;
- Develop recycling regulations for hydrochlorofluorocarbons (e.g., SCAQMD Rules 1411 and 1415);
- Develop an emissions inventory and control strategy for methyl bromide; and
- Support the adoption of a California GHG emission reduction goal.

***Southern California Association of Governments.*** To implement SB 375 and reduce GHG emissions by correlating land use and transportation planning, SCAG adopted the 2020-2045 RTP/SCS on September 3, 2020, calling for $639 billion in transportation investments and reducing VMT by 19 percent per capita from 2005 to 2035. The updated plan accommodates 21.3 percent growth in population from 2016 (3,933,800) to 2045 (4,771,300) and a 15.6 percent growth in jobs from 2016 (1,848,300) to 2045 (2,135,900). The updated RTP/SCS calls for several land use-based strategies to accommodate growth, minimize criteria pollutant emissions, and achieve climate change objectives:

- Decreasing drive-along work commutes by three percent
- Reducing per capita VMT by five percent and vehicle hours traveled per capita by nine percent
- Increasing transit commuting by two percent
- Reducing travel delay per capita by 26 percent

- Creating 264,500 new jobs annually
- Reducing greenfield development by 29 percent by focusing on smart growth
- Locating six more percent household growth in High Quality Transit Areas (HQTAs), which concentrate roadway repair investments, leverage transit and active transportation investments, reduce regional life cycle infrastructure costs, improve accessibility, create local jobs, and have the potential to improve public health and housing affordability.
- Locating 15 percent more jobs in HQTAs

The 2020-2045 RTP/SCS calls for a 19 percent reduction in per capita GHG emissions by 2035 from 2005 levels. This is intended to be consistent with CARB's performance targets during this same period. The bulk of these reductions are to come from transportation investments, pricing strategies, TDM strategies, and land use programs. On October 30, 2020, CARB accepted the RTP/SCS quantification of GHG emissions on October 30, 2020 (Executive Order G-20-239, SCAG 2020 SCS ARB Acceptance of GHG Quantification Determination).

**Regulatory Framework: Local**

***City of Los Angeles Green Building Code.*** On December 15, 2011, the Los Angeles City Council approved Ordinance No. 181,481, which amended Chapter IX of the Los Angeles Municipal Code (LAMC), referred to as the Los Angeles Green Building Code, by adding a new Article 9 to incorporate various provisions of the 2010 CALGreen Code. On December 20, 2016, the Los Angeles City Council approved Ordinance No. 184,692, which further amended Chapter IX of the LAMC, by amending certain provisions of Article 9 to reflect local administrative changes and incorporating by reference portions of the 2016 CALGreen Code. The 2020 Los Angeles Green Building Code incorporates by reference the mandatory requirements of the 2019 California Green Building Standards Code.

On November 29, 2022, the City Council adopted Ordinance 187714, which requires new development to be all electric powered, with the few exceptions (e.g., cooking equipment associated with any restaurants or eating facilities, gas-powered emergency backup systems). Equipment typically powered by natural gas such as space heating, water heating, cooking appliances and clothes drying would need to be powered by electricity for new construction. Exceptions are made for commercial restaurants, laboratory, and research and development uses. The LAMC is consistent with 2022 Title 24 goals of encouraging all-electric development which requires new residential uses to be electric-ready (wiring installed for all-electric appliances). Buildings in Los Angeles account for 43 percent of greenhouse gas emissions—more than any other sector in the City. These LAMC requirements ensure that new buildings being constructed are built to leverage the increasingly clean electric grid, which is anticipated to be carbon-free by 2035, rather than relying on fossil fuels.

***Housing Element (Housing Needs Assessment).*** The Housing Element of the General Plan is prepared pursuant to state law and provides planning guidance in meeting housing needs identified in the SCAG Regional Housing Needs Assessment (RHNA). The Housing Element identifies the City's housing conditions and needs, establishes the goals, objectives, and policies that are the foundation of the City's housing and growth strategy, and provides the array of programs the City intends to implement to create and preserve sustainable, mixed-income neighborhoods across the City.

The Housing Needs Assessment chapter discusses the City's population and housing stock to identify housing needs for a variety of household types across the City. The current RHNA goal for affordable housing within the City is approximately forty percent of new construction. However, the City's projections show affordable housing comprising twenty percent of new construction, which falls short of the forty percent RHNA goal. In order to address this shortfall in affordable housing, the Housing Element provides measures to streamline and incentivize development of affordable housing. Such measures include revising density bonuses for affordable housing; identifying locations which are ideal for funding programs to meet low-income housing goals; and rezoning areas to encourage low-income housing. With implementation of such measures to increase affordable housing, the Housing Element predicts a significant increase in housing production at all income ranges compared to previous cycles.

The Housing Element also promotes sustainability and resilience, and environmental justice through housing, as well as the need to reduce displacement. It encourages the utilization of alternatives to current parking standards that lower the cost of housing, support GHG and VMT goals and recognize the emergence of shared and alternative mobility. The Element also identifies housing strategies for energy conservation, water conservation, alternative energy sources and sustainable development which support conservation and reduce demand.

***City of Los Angeles Green New Deal.*** The April 2019 Green New Deal is designed to create sustainability-based performance targets through 2050 to advance economic, environmental, and equity objectives. It was the first four-year update to the City's first Sustainable City pLAn that was released in 2015. It augments, expands, and elaborates the City's vision for a sustainable future and tackles the climate emergency with accelerated targets and new aggressive goals.

While not solely focused on climate change, reduction of GHG emissions is one of eight benefits that help define its strategies and goals. These include reducing GHG emissions through near-term outcomes:

- Reduce potable water use per capita by 22.5 percent by 2025; 25 percent by 2035; and maintain or reduce 2035 per capita water use through 2050.
- Reduce building energy use per square feet for all building types 22 percent by 2025; 34 percent by 2035; and 44 percent by 2050 (from a baseline of 68 mBTU/sf in 2015).
- All new buildings will be net zero carbon by 2030 and 100 percent of buildings will be net zero carbon by 2050.
- Increase cumulative new housing unit construction to 150,000 by 2025; and 275,000 units by 2035.
- Ensure 57 percent of new housing units are built within 1,500 feet of transit by 2025; and 75 percent by 2035.

- Increase the percentage of all trips made by walking, biking, micro-mobility/ matched rides, or transit to at least 35 percent by 2025, 50 percent by 2035, and maintain at least 50 percent by 2050.
- Reduce VMT per capita by at least 13 percent by 2025; 39 percent by 2035; and 45 percent by 2050.
- Increase the percentage of electric and zero emission vehicles in the city to 25 percent by 2025; 80 percent by 2035; and 100 percent by 2050.
- Increase landfill diversion rate to 90 percent by 2025; 95 percent by 2035 and 100 percent by 2050.
- Reduce municipal solid waste generation per capita by at least 15 percent by 2030, including phasing out single-use plastics by 2028 (from a baseline of 17.85 lbs. of waste generated per capita per day in 2011).
- Eliminate organic waste going to landfill by 2028.
- Reduce urban/rural temperature differential by at least 1.7 degrees by 2025; and 3 degrees by 2035.
- Ensure the proportion of Angelenos living within 1/2 mile of a park or open space is at least 65 percent by 2025; 75 percent by 2035; and 100 percent by 2050.

***Mobility Plan 2035.*** In August 2015, the City Council adopted Mobility Plan 2035 (Mobility Plan), which serves as the City's General Plan circulation element. The City Council has adopted several amendments to the Mobility Plan since its initial adoption, including the most recent amendment on September 7, 2016.[37] The Mobility Plan incorporates "complete streets" principles and lays the policy foundation for how the City's residents interact with their streets. While the Mobility Plan 2035 mainly relates to transportation, certain components would serve to reduce VMT and mobile source GHG emissions. One component of the Mobility Plan is a GHG emission tracking program to establish compliance with SB 375, AB 32 and the region's Sustainable Community Strategy.

***Traffic Study Policies and Procedures.*** The City of Los Angeles Department of Transportation (LADOT) has developed the Transportation Assessment Guidelines (TAG) (July 2020) to provide the public, private consultants, and City staff with standards, guidelines, objectives, and criteria to be used in the preparation of a transportation impact study. The TAG is consistent with the City's goals to emphasize the importance of sustainability, smart growth, and reduction of GHG emissions in addition to traditional traffic flow considerations when evaluating and mitigating impacts to the transportation system because of land use policy decisions. The TAG prioritizes transportation demand management strategies and multi-modal strategies over automobile-centric solutions when mitigating project-related impacts to the City's transportation system. Through acknowledgement of an imminent update that will identify VMT reduction thresholds, the TAG stands as an implementing mechanism of the City's strategy to conform to the mandates and requirements of AB 32, SB 375, and SB 743.

[37] *Los Angeles Department of City Planning, Mobility Plan 2035: An Element of the General Plan, approved by City Planning Commission on June 23, 2016, and adopted by City Council on September 7, 2016.*

## Existing Conditions

***Existing Statewide GHG Emissions.*** GHG emissions are the result of both natural and human-influenced activities. Regarding human-influenced activities, motor vehicle travel, consumption of fossil fuels for power generation, industrial processes, heating and cooling, landfills, agriculture, and wildfires are the primary sources of GHG emissions. Without human intervention, Earth maintains an approximate balance between the emission of GHG emissions into the atmosphere and the storage of GHG emissions in oceans and terrestrial ecosystems. Events and activities, such as the industrial revolution and the increased combustion of fossil fuels (e.g., gasoline, diesel, coal), have contributed to the rapid increase in atmospheric levels of GHG emissions over the last 150 years.

As reported by the CEC, California contributes approximately one percent of global and 8.2 percent of national GHG emissions.[38] California represents approximately 12 percent of the national population. Approximately 80 percent of GHGs in California are $CO_2$ produced from fossil fuel combustion. The current California GHG inventory compiles statewide anthropogenic GHG emissions and carbon sinks/storage from years 2000 through 2019.[39] It includes estimates for $CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, and $SF_6$. The GHG inventory for California for years 2010 through 2019 is presented in Table 5. As shown therein, the GHG inventory for California in 2019 was 418.2 million $MTCO_2e$.

**Table 5**
**California GHG Inventory**
**(metric tons of carbon dioxide equivalent [$MTCO_2e$])**

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|
| **Transportation** | 161.2 | 162.6 | 166.2 | 169.8 | 171.2 | 169.6 | 166.1 |
| **Electric Power** | 91.7 | 92.5 | 90.3 | 89.0 | 88.8 | 89.2 | 88.2 |
| **Industrial** | 16.8 | 17.7 | 18.6 | 19.2 | 20.0 | 20.4 | 20.6 |
| **Commercial & Residential** | 91.4 | 88.9 | 84.8 | 68.6 | 62.1 | 63.1 | 58.8 |
| **Agriculture** | 161.2 | 162.6 | 166.2 | 169.8 | 171.2 | 169.6 | 166.1 |
| **High GWP** | 91.4 | 88.9 | 84.8 | 68.6 | 62.1 | 63.1 | 58.8 |
| **Recycling & Waste** | 91.7 | 92.5 | 90.3 | 89.0 | 88.8 | 89.2 | 88.2 |
| ***Total*** | 447.5 | 443.0 | 440.7 | 429.1 | 424.6 | 425.1 | 418.2 |

*Source: California Air Resources Board (2021). California Greenhouse Gas Emission Inventory - 2021 Edition. Data available at: https://ww3.arb.ca.gov/cc/inventory/data/data.htm*

***Existing Project Site Emissions.*** The Project Site is currently vacant of any improvements. As such, there are no anthropogenic emissions of GHGs from the Project Site.

[38] California Energy Commission, Tracking Progress, Greenhouse Gas Emission Reductions. https://www.energy.ca.gov/data-reports/tracking-progress. Accessed August 2023.

[39] A carbon inventory identifies and quantifies sources and sinks of greenhouse gases. Sinks are defined as a natural or artificial reservoir that accumulates and stores some carbon-containing chemical compound for an indefinite period.

**Methodology**

CEQA Guidelines Section 15064.4(a) assist lead agencies in determining the significance of the impacts of GHG emissions, giving them discretion to determine whether to assess impacts quantitatively or qualitatively. It calls for a good-faith effort to describe and calculate emissions. This emissions inventory also demonstrates the reduction in a project's incremental contribution of GHG emissions that results from regulations and requirements adopted as implementation efforts for these plans for the reduction or mitigation of GHG emissions. As such, it provides further justification that a project is consistent with plans adopted for the purpose of reducing and/or mitigating GHG emissions by a project and over time. The significance of a project's GHG emissions impacts is not based on the amount of GHG emissions resulting from that project.

The City, SCAQMD, Office of Planning and Research (OPR), CARB, California Air Pollution Control Officers Association (CAPCOA), and other applicable agencies have not adopted a numerical threshold of significance for assessing impacts related to GHG emissions. As a result, the methodology for evaluating a project's impacts related to GHG emissions focuses on its consistency with statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions.[40] This evaluation is the sole basis pursuant to CEQA for determining the significance of a project's GHG-related impacts on the environment.

Appendix D, Local Actions, of the 2022 Scoping Plan Update includes "recommendations intended to build momentum for local government actions that align with the State's climate goals, with a focus on local GHG reduction strategies (commonly referred to as climate action planning) and approval of new land use development projects, including through environmental review under the California Environmental Quality Act (CEQA)."

The State encourages local governments to adopt a CEQA-qualified CAP addressing the three priority areas (transportation electrification, VMT reduction, and building decarbonization). However, the State recognizes that almost 50 percent of jurisdictions do not have an adopted CAP, among other reasons because they are costly, requiring technical expertise, staffing, funding. Additionally, CAPs need to be monitored and updated as State targets change and new data is available. Jurisdictions that wish to take meaningful climate action (such as preparing a non-CEQA-qualified CAP or as individual measures) aligned with the State's climate goals in the absence of a CEQA-qualified CAP are advised to look to the three priority areas when developing local climate plans, measures, policies, and actions: (transportation electrification, VMT reduction, and building decarbonization). "By prioritizing climate action in these three priority areas, local governments can address the largest sources of GHGs within their jurisdiction."

The State also recognizes in Appendix D, Local Actions, of the Scoping Plan that each community or local area has distinctive situations and local jurisdictions must balance the urgent need for housing[41]

40 CEQA Guidelines, Section 14 CCR 15064.4.

41 The State recognizes the need for 2.5 million housing units over the next eight years, with one million being affordable units. See page 20, Appendix D, *2022 Scoping Plan Update, November 2022*

while demonstrating that a Project is in alignment with the State's Climate Goals. The State calls for the climate crisis and the housing crisis to be confronted simultaneously. Jurisdictions should avoid creating targets that are impossible to meet as a basis to determine significance. Ultimately, targets that make it more difficult to achieve statewide goals by prohibiting or complicating projects that are needed to support the State's climate goals, like infill development, low-income housing or solar arrays, are not consistent with the State's goals. The State also recognizes the lead agencies' discretion to develop evidence-based approaches for determining whether a project would have a potentially significant impact on GHG emissions.

The analysis also calculates the amount of GHG emissions from the Project using recommended air quality models. The primary purpose of quantifying the Project's GHG emissions is to satisfy CEQA Guidelines Section 15064.4(a). The estimated emissions inventory is also used to determine if there would be a reduction in the Project's incremental contribution of GHG emissions because of compliance with regulations requirements adopted to implement plans for reducing or mitigating GHG emissions. However, the significance of the Project's GHG emissions is not based on the amount of emissions from the Project.

***Consistency with Applicable Plans and Policies***

A consistency analysis has been provided that describes the Project's conflict with applicable plans and policies adopted for the purpose of reducing GHG emissions, included in the applicable portions of CARB's *Climate Change Scoping Plan* and the 2020-2045 RTP/SCS. In addition, this analysis assesses the Project's consistency with other plans (e.g., the Green New Deal) for informational purposes.

OPR encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform project analyses. Statewide, the Climate Change Scoping Plan provides measures to achieve AB 32 and SB 32 targets. On a regional level, SCAG's 2020-2045 RTP/SCS contains measures to achieve VMT reduction required by SB 375. The City does not have a programmatic mitigation plan from which to tier from, though it has adopted plans to help reduce GHG emissions.

As noted in CEQA Guidelines Section 15064.4(b)(3), consistency with such plans and policies "must reduce or mitigate the project's incremental contribution of greenhouse gas emissions." To demonstrate such incremental reductions, this chapter estimates reductions of project-related GHG emissions resulting from consistency with plans. Consistent with evolving scientific knowledge, approaches to GHG quantification may continue to evolve in the future.

A consistency analysis is provided below that describes the Project's consistency with performance-based standards in the applicable parts of CARB's *Climate Change Scoping Plan,* SCAG's 2020-2045 RTP/SCS, and the Green New Deal.

### *Quantification of Emissions*

This analysis quantifies the Project's GHG emissions for information purposes, considering the GHG reduction features that would be incorporated into the Project's design. It relies on the California Emissions Estimator Model® (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California, who provided data (e.g., emission factors, trip lengths, meteorology, source inventory) to account for local requirements and conditions. The model is considered by SCAQMD to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California.[42]

This analysis quantifies the Project's emissions and compares them to a Project without Reduction Features scenario, as defined by CARB's most updated projections for AB 32 and SB 32. This comparison is included for informational purposes to disclose the relative carbon efficiency of the Project and to determine if there would be a reduction in the Project's incremental contribution of GHG emissions based on compliance with regulations and requirements adopted to implement plans for reducing GHG emissions. The Project Without Reduction Features scenario does not consider site-specific conditions, Project design features, or prescribed mitigation measures. This approach is consistent with the concepts used in the CARB's *Climate Change Scoping Plan* for the implementation of AB 32. This methodology is used to analyze consistency with applicable GHG reduction plans and policies and demonstrate the efficacy of the measures contained therein, but it is not a threshold of significance. The Project Without Reduction Features scenario is similar to the approach currently used by the City with respect to evaluating a proposed development project's consistency with CARB's Scoping Plans. Currently, the City evaluates the proposed project under two scenarios—one scenario without GHG reduction measures (akin to the Project Without Reduction Features scenario) and a second scenario with GHG reduction measures.

The Project without Reduction Features scenario also does not account for energy efficiency measures that would go beyond Title 24 building standards or trip reductions from the co-location of uses and availability of public transit. However, the Project without Reduction Features does consider regulatory measures included in CARB's *Climate Change Scoping Plan,* SCAG's 2020-2045 RTP/SCS, and the Green New Deal.

### *Project GHG Emissions*

The California Climate Action Registry (Climate Registry) General Reporting Protocol provides basic procedures and guidelines for calculating and reporting GHG emissions from a number of general and

[42] California Air Pollution Control Officers Association, California Emissions Estimator Model, CalEEMod™, www.caleemod.com, accessed May 25, 2016.

industry-specific activities.[43] The General Reporting Protocol is based on the "Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard" developed by the World Business Council for Sustainable Development and the World Resources Institute through "a multi-stakeholder effort to develop a standardized approach to the voluntary reporting of GHG emissions."[44] Although no numerical thresholds of significance have been developed, and no specific protocols are available for land use projects, the General Reporting Protocol provides a basic framework for calculating and reporting GHG emissions from the project. The information provided in this section is consistent with the General Reporting Protocol's reporting requirements.

The General Reporting Protocol recommends the separation of GHG emissions into three categories that reflect different aspects of ownership or control over emissions. They include the following:

- Scope 1: Direct, onsite combustion of fossil fuels (e.g., natural gas, propane, gasoline, and diesel).
- Scope 2: Indirect, offsite emissions associated with purchased electricity or purchased steam.
- Scope 3: Indirect emissions associated with other emissions sources, such as third-party vehicles and embodied energy (e.g., energy used to convey, treat, and distribute water and wastewater).[45]

The General Reporting Protocol provides a range of basic calculations methods. However, the General Reporting Protocol calculations are typically designed for existing buildings or facilities. These retrospective calculation methods are not directly applicable to planning and development situations where buildings do not yet exist.

CARB recommends consideration of indirect emissions to provide a more complete picture of the GHG emissions footprint of a facility. Annually reported indirect energy usage aids the conservation awareness of a facility and provides information to CARB to be considered for future strategies.[46] For example, CARB has proposed requiring the calculation of direct and indirect GHG emissions as part of the AB 32 reporting requirements. Additionally, OPR has noted that lead agencies "should make a good-faith effort, based on available information, to calculate, model, or estimate… GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."[47] Therefore, direct and indirect emissions have been calculated for the Project.

A fundamental difficulty in the analysis of GHG emissions is the global nature of the existing and cumulative future conditions. Changes in GHG emissions can be difficult to attribute to a particular planning program or project because the planning effort or project may cause a shift in the locale for

43 California Climate Action Registry, General Reporting Protocol Version 3.1, January 2009.

44 Ibid.

45 Embodied energy is a scientific term that refers to the quantity of energy required to manufacture and supply to the point of use a product, material, or service.

46 California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (AB 32), Planning and Technical Support Division Emission Inventory Branch, October 19, 2007.

47 OPR Technical Advisory, p. 5.

some type of GHG emissions, rather than causing "new" GHG emissions. As a result, there is an inability to conclude whether a project's GHG emissions represent a net global increase, reduction, or no change in GHG emissions that would exist if the project were not implemented. The analysis of the Project's GHG emissions is particularly conservative in that it assumes all the GHG emissions are new additions to the atmosphere.

### *Construction*

The Project's construction emissions were calculated using CalEEMod Version 2022.1.1.17. Details of the modeling assumptions and emission factors are provided in the Technical Appendix. CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. GHG emissions during construction were forecasted based on the proposed construction schedule and included the mobile- source and fugitive dust emissions factors derived from CalEEMod.

The calculations of the emissions generated during Project construction activities reflect the types and quantities of construction equipment that would be used to remove existing pavement, grade, and excavate the Project Site; construct the proposed building and related improvements; and plant new landscaping within the Project Site.

In accordance with SCAQMD's guidance, GHG emissions from construction were amortized (i.e., averaged annually) over the lifetime of the Project. Because emissions from construction activities occur over a relatively short-term period, they contribute a relatively small portion of the overall lifetime GHG emissions for the Project. In addition, GHG emissions reduction measures for construction equipment are relatively limited. Thus, SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime, so that GHG emissions reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies.[48] As a result, the Project's total construction GHG emissions were divided by 30 to determine an approximate annual construction emissions estimate comparable to operational emissions.

### *Operation*

Similar to construction, CalEEMod is used to calculate potential GHG emissions generated by new land uses on the Project Site, including area sources, electricity, natural gas, mobile sources, stationary sources (i.e., emergency generators), solid waste generation and disposal, and water usage/wastewater generation.

Area source emissions include landscaping equipment that are based on the size of the land uses (e.g., square footage or dwelling unit), the GHG emission factors for fuel combustion, and the global warming potential (GWP) values for the GHG emissions emitted.

GHG emissions associated with electricity demand are based on the size of the land uses, the electrical demand factors for the land uses, the GHG emission factors for the electricity utility provider, and the GWP values for the GHG emissions emitted. As with electricity, the emissions of GHG emissions associated with natural gas combustion are based on the size of the land uses, the natural gas

48 SCAQMD Governing Board Agenda Item 31, December 5, 2008.

combustion factors for the land uses in units of million British thermal units (MMBtu), the GHG emission factors for natural gas combustion, and the GWP values for the GHG emissions emitted.[49]

Mobile source GHG emissions are calculated based on an estimate of the Project's annual VMT, which is derived using CalEEMod based on the trip generation provided in the Transportation Study prepared for the Project. The CalEEMod-derived VMT values account for the daily and seasonal variations in trip frequency and length associated with new employee and visitor trips to and from the Project Site and other activities that generate a vehicle trip.

Stationary source GHG emissions are based on proposed stationary sources (i.e., emergency generators) that would be provided on the Project Site.

GHG emissions associated with solid waste disposal are based on the size of the Project's proposed land uses, the waste disposal rate for the land uses, the waste diversion rate, the GHG emission factors for solid waste decomposition, and the GWP values for the GHG emissions emitted.

GHG emissions related to water usage and wastewater generation are based on the size of the land uses, the water demand factors, the electrical intensity factors for water supply, treatment, and distribution, electrical intensity factors for wastewater treatment, the GHG emission factors for the electricity utility provider, and the GWP values for the GHG emissions emitted.

The analysis of Project GHG emissions at buildout uses assumptions in CARB's EMFAC2021 model (1.0.1) and considers actions and mandates expected to be in force in 2024 (e.g., Pavley I Standards, full implementation of California's 33 percent RPS by 2030 and 50 percent by 2050 and the California LCFS). In addition, because mobile source GHG emissions are directly dependent on the number of vehicle trips, a decrease in the number of project-generated trips because of project features (e.g., proximity to transit) would provide a proportional reduction in mobile source GHG emissions compared to a generic project without such locational benefits. Calculation of Project GHG emissions conservatively did not include actions and mandates that are not already in place but are expected to be enforced in 2024 (e.g., Pavley II, which could further reduce GHG emissions from use of light-duty vehicles by 2.5 percent). Similarly, emissions reductions regarding Cap-and-Trade were not included in this analysis as they applied to other future reductions in non-transportation sectors. As for the Cap-and-Trade program's benefits for the transportation sector, the analysis utilizes CARB's assumptions in EMFAC2021 for any short-term reductions in GHG emissions. By not speculating on potential regulatory conditions, the analysis takes a conservative approach that likely overestimates the Project's GHG emissions at buildout, because the state is expected to implement several policies and programs aimed at reducing GHG emissions from the land use and transportation sectors to meet the state's long-term climate goals.

[49] Energy consumption estimates with CalEEMod 2022.1.1.17 are based on the California Energy Commission's 2020 Residential Appliance Saturation Survey (residential uses) and 2021 Commercial Forecast database, both of which reflected the 2019 Title 24 energy efficiency standards. These energy consumption estimates were adjusted to reflect the 2022 Title 24 standards that cumulatively produce a 0.49 percent reduction in electricity use and 0.45 percent reduction in natural gas use when compared to the 2019 standards.

There are no GHG emissions thresholds adopted by the SCAQMD that are applicable to the Project. In 2008, SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds.[50] Within its October 2008 document, the SCAQMD proposed the use of a percent emission reduction target to determine significance for commercial/residential projects that emit greater than 3,000 $MTCO_2e$ per year. Under this proposal, such commercial and residential projects would have been assumed to have a less than significant impact on climate change. However, this proposed screening threshold was not adopted by the SCAQMD.

***Consistency with Applicable Plans and Policies***

A consistency analysis has been provided that describes the Project's compliance with or exceedance of performance-based standards, and consistency with applicable plans and policies adopted for the purpose of reducing GHG emissions, included in the applicable portions of the *Climate Change Scoping Plan*, the 2020-2045 RTP/SCS, and the Green New Deal.

As part of the *Climate Change Scoping Plan*, a statewide emissions inventory was developed as required by AB 32 which directs CARB to develop and track GHG emissions reductions to document progress towards the state GHG target. The emissions inventory also considers GHG emissions reduction measures developed by CARB to achieve state targets. Consistency with the *Climate Change Scoping Plan* is evaluated by comparing the Project's GHG reduction measures to those contained in the Scoping Plan.

As noted in CEQA Guidelines Section 15064.4(b)(3), consistency with such plans and policies "must reduce or mitigate the project's incremental contribution of greenhouse gas emissions." To demonstrate such incremental reductions, this chapter estimates reductions of project-related GHG emissions resulting from consistency with plans. Consistent with evolving scientific knowledge, approaches to GHG quantification may continue to evolve in the future.

While there are many ways to quantify the efficiency of the GHG reduction measures provided for in the plans and policies, this analysis compares the Project's GHG emissions to the emissions that would be generated by the Project in the absence of any GHG reduction measures (i.e., the Project Without Reduction Features scenario). This approach is consistent with the concepts used in CARB's Climate Change Scoping Plan. This methodology is used to analyze consistency with applicable GHG reduction plans and policies and demonstrate the efficacy of the measures contained therein, but it is not a threshold of significance.

The analysis in this section includes potential emissions under a Project Without Reduction Features scenarios and from the Project at build-out based on actions and mandates expected to be in force in 2027. Early-action measures identified in the Climate Change Scoping Plan that have not been approved were not credited in this analysis. By not speculating on potential regulatory conditions, the analysis takes a conservative approach that likely overestimates the Project's GHG emissions at build-out. The Project Without Reduction Features scenario is used to establish a comparison with project-generated GHG emissions. The Project Without Reduction Features scenario does not consider site-specific conditions, project design features, or prescribed mitigation measures. As an example, a Project Without Reduction Features scenario would apply a base ITE trip-generation rate for the project and would not consider site-specific benefits resulting from the proximity to public transportation.

**Thresholds of Significance**

***State CEQA Guidelines Appendix G***

In accordance with Appendix G of the State CEQA Guidelines (Appendix G), a project would have a significant impact related to GHG emissions if the project would do the following:

**a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;**

**b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHG emissions.**

The Project would comply with all applicable state and local regulatory requirements, including the provisions set forth in the City's Green Building Ordinance. Also, a TDM Program would be developed and would include strategies to promote non-auto travel and reduce the use of single-occupant vehicle trips. Furthermore, the Project would also include sustainability features related to water conservation and waste reduction.

**Project Impacts**

***Consistency with Applicable Plans and Policies***

The discussion below describes the extent the Project complies with or exceeds the performance-based standards included in the regulations outlined in the *Climate Change Scoping Plan* and the 2020-2045 RTP/SCS, each of which identify GHG-reducing measures that directly and indirectly apply to the Proposed Project. This analysis also evaluates the Project's consistency with City plans and programs that generally address climate change. As shown herein, the Project would be consistent with the applicable GHG reduction plans and policies.

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As discussed above, jurisdictions that want to take meaningful climate action (such as preparing a non-CEQA-qualified CAP or as individual measures) aligned with the State's climate goals in the absence of

a CEQA-qualified CAP should also look to the three priority areas (transportation electrification, VMT reduction, and building decarbonization). To assist local jurisdictions, the 2022 Scoping Plan Update presents a non-exhaustive list of impactful GHG reduction strategies that can be implemented by local governments within the three priority areas (Priority GHG Reduction Strategies for Local Government Climate Action Priority Areas).[51] A detailed assessment of goals, plans, policies implemented by the City which would support the GHG reduction strategies in the three priority areas is provided below. In addition, further details are provided regarding the correlation between these reduction strategies and applicable actions included in Table 2-1 (page 72) of the Scoping Plan (Actions for the Scoping Plan Scenario).

**Transportation Electrification**

The priority GHG reduction strategies for local government climate action related to transportation electrification are discussed below and would support the Scoping Plan action to have 100 percent of all new passenger vehicles to be zero-emission by 2035 (see Table 2-1 of the Scoping Plan).

- **Convert local government fleets to zero-emission vehicles (ZEV)**

CARB approved the Advanced Clean Cars II rule which codifies Executive Order N-79-20 and requires 100 percent of new cars and light trucks sold in California be zero-emission vehicles by 2035. The State has also adopted AB 2127, which requires the CEC to analyze and examine charging needs to support California's EVs in 2030. This report would help decision-makers allocate resources to install new EV chargers where they are needed most.

The City of LA Green New Deal (formerly Sustainable City pLAn 2019) identifies a number of measures to reduce VMT and associated GHG emissions. Such measures that would support the local reduction strategy include converting all city fleet vehicles to zero emission where technically feasible by 2028. Starting in 2021, all vehicle procurement followed a "zero emission first" policy for City fleets. The Green New Deal also establishes a target to increase the percentage of zero emission vehicles to 25 percent by 2025, 80 percent by 2035 and 100 percent by 2050. In order to achieve this goal, the City would build 20 Fast Charging Plazas throughout the City. The City would also install 28,000 publicly available chargers by 2028 to encourage adoption of ZEVs.

The City's goals of converting the municipal fleet to zero emissions and installation of EV chargers throughout the City would be consistent with the Scoping Plan goals of transitioning to EVs. Although this measure mainly applies to City fleets, the Project would not conflict with these goals by installing 26 EV charging stations and pre-wiring 66 other spaces for future charging facilities.

- **Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit**

[51] *Table 1 of Appendix D, 2022 Scoping Plan Update, November 2022.*

**streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans)**

The State has adopted AB 1236 and AB 970, which require cities to adopt streamline permitting procedures for EV charging stations. As a result, the City updated Section IX of the LAMC, which requires most new construction to designate 30 percent of new parking spaces as capable of supporting future electric vehicle supply equipment (EVSE). This would exceed the CALGreen 2022 requirements of 20 percent of new parking spaces as EV capable. The ordinance also requires new construction to install EVSE at ten percent of total parking spaces. This requirement also exceeds the CALGreen 2022 requirements of installing EVSE for 25 percent of EV capable parking spaces which is approximately five percent of total parking spaces. The City has also implemented programs to increase the amount of EV charging on city streets, EV carshare, and incentive programs for apartments to be retrofitted with EV chargers.

The City's goals of installing EV chargers throughout the City would be consistent with the Scoping Plan goals of transitioning to EVs. The Project would contribute to this by installing 26 EV charging stations and pre-wiring 66 other spaces for future charging facilities.

**VMT Reduction**

The priority GHG reduction strategies for local government climate action related to VMT reduction are discussed below and would support the Scoping Plan action to reduce VMT per capita 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045.

- **Reduce or eliminate minimum parking standards in new developments**

- **Implement parking pricing or transportation demand management pricing strategies**

The City of Los Angeles Mobility Plan 2035 which is the Transportation Element of the City's General Plan contains measures and programs related to VMT reduction throughout the City. With regard to parking standards, the implementation of Mobility Plan Programs and AB 2097 reduce or eliminate parking requirements for certain types of developments near transit (within half a mile). These reduction strategies and TDM programs would serve to reduce minimum parking standards and reduce vehicle trips.

The Project would limit parking to 263 spaces for the 327 residences and 9,462 square feet of commercial space. This will lower car ownership levels for residents and encourage workers and visitors to not drive to the commercial uses in the development. Therefore, the Project would be consistent and not conflict with this reduction strategy to reduce parking standards.

- **Implement Complete Streets policies and investments, consistent with general plan circulation element requirements**

The City of Los Angeles Mobility Plan 2035 established a "Complete Streets" planning framework which resulted in the City of Los Angeles Complete Streets Design Guide in 2015, consistent with California's

Complete Streets Act of 2008. A supplemental update to the Complete Streets Design Guide was adopted in 2020.

The Complete Streets Design Guide provides a number of measures to increase public access to electric shuttles, car sharing and walking. The Design Guide establishes guidelines for establishing on-street parking for car sharing. The City has also established BlueLA which is a car sharing network consisting of more than 100 electric vehicles located throughout the City. In addition, under the Green New Deal, the City would install 28,000 publicly available chargers by 2028 and introduce 135 new electric DASH buses.

This reduction strategy mainly applies to City traffic circulation. Nevertheless, the Project would include pedestrian network improvements to encourage active transportation, including street-facing entrances along Sunset Boulevard and a series of internal pedestrian walkways throughout the Project Site. As such, the Project would not conflict with implementation of Complete Streets policies.

- **Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, etc.**

- **Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking**

- **Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing the allowable density of a neighborhood)**

- **Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert "greenfield" land to urban uses (e.g., green belts, strategic conservation easements).**

These reduction strategies are supported through implementation of SB 375 which requires integration of planning processes for transportation, land-use and housing and generally encourages jobs/housing proximity, promote transit-oriented development (TOD), and encourages high-density residential/ commercial development along transit corridors. To implement SB 375 and reduce GHG emissions by correlating land use and transportation planning, SCAG adopted the 2020–2045 RTP/SCS, also referred to as Connect SoCal. The 2020–2045 RTP/SCS' "Core Vision" prioritizes the maintenance and management of the region's transportation network, expanding mobility choices by co-locating housing, jobs, and transit, and increasing investment in transit and complete streets. Please refer below for additional discussion of consistency with the 2020-2045 RTP/SCS.

On a local level, the City has developed the Complete Streets Design Guide which provides a number of reduction strategies to increase public access to electric shuttles, car sharing and walking, continues to build out networks in the Mobility Plan for pedestrians, bicyclists, and transit users, has implemented

an EV car sharing network, and is working towards increasing publicly available chargers, and introducing new electric DASH buses.

The Project is an infill development in an urbanized area that would concentrate new development consistent with the growth pattern encouraged in the RTP/SCS. The Project's convenient access to public transit and opportunities for walking and biking would reduce vehicle trips, VMT, and GHG emissions. The Project Site's mixed-use development plan will capture some trips normally destined for off-site locations and the proximity to commercial uses and services would encourage residents and employees to walk to nearby destinations to meet their shopping needs, thereby reduce VMT and GHG emissions. Therefore, the Project would be consistent with these reduction strategies.

California continues to experience a severe housing shortage. The State must plan for more than 2.5 million residential units over the next eight years, and no less than one million of those residential units must be affordable to lower-income households.[52] This represents more than double the housing planned for during the last eight years.[53] The housing crisis and the climate crisis must be confronted simultaneously, and it is possible to address the housing crisis in a manner that supports the State's climate and regional air quality goals.[54] CAPCOA's Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (CAPCOA's Handbook) provides a VMT reduction measurement for incorporation of low-income housing. Measure T-4 (Integrate Affordable and Below Market Rate Housing) shows a 28.6 percent reduction in VMT for low-income units in comparison to market rate units.

As discussed above, the City's Housing Element of the General Plan provides planning guidance in meeting housing needs identified in the SCAG Regional Housing Needs Assessment (RHNA). The current RHNA goal for affordable housing within the City is approximately forty percent of new construction. However, the City's projections show affordable housing comprising twenty percent of new construction, which falls short of the forty percent RHNA goal. In order to address this shortfall, the Housing Element identifies measures to encourage development of affordable housing such as revising density bonuses for affordable housing; identify locations which are ideal for funding programs to meet low-income housing goals; and rezone areas to encourage low-income housing. The Housing Element estimates that implementation of these measures would increase housing production at all income ranges compared to previous cycles.

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52 *California Department of Housing and Community Development. 2022. Statewide Housing Plan. Available at www.hcd.ca.gov/docs/statewide-housing-plan.pdf.*

53 *Ibid.*

54 *Elkind, E. N., Galante, C., Decker, N., Chapple, K., Martin, A., & Hanson, M. 2017. Right Type, Right Place: Assessing the Environmental and Economic Impacts of Infill Residential Development through 2030. Available at https://ternercenter.berkeley.edu/research-and-policy/right-type-right-place/.*

The City's 20-percent goal of low-income housing for new construction is applicable on a citywide basis and not applicable to an individual project. The Planning Department Housing Division found based, on market studies and experiences of other agencies, that mandating 20-percent affordable housing on individual projects is likely to reduce overall housing production, including low income housing, in the City and would be contrary to City and State policies. Pushing more housing outside of the City would be contrary to the Scoping Plan, as infill housing production in the City, which is a highly urbanized city with billions in transit infrastructure, lower average VMT than the SCAG region, is called for in the 2022 Scoping Plan.

The Project would expand the supply and diversity of housing in the City of Los Angeles. Within the 327 multi-family residences, 41 would be affordable units with additional live/work spaces that provide options for sustainable living. Further, the Project's location in an urbanized area with access to transportation alternatives would help promote transit use, while the limited parking would support reduced car ownership that can help reduce living costs and further the City's goals for promoting affordable housing. Residents and tenants will be provided with information about alternative transportation modes upon moving in, which could reduce vehicle use.

**Building Decarbonization**

The priority GHG reduction strategies for local government climate action related to electrification are discussed below and would support the Scoping Plan actions regarding meeting increased demand for electrification without new fossil gas-fire resources and all electric appliances beginning in 2026 (residential) and 2029 (commercial) (see Table 2-1 of the Scoping Plan).

- **Adopt all-electric new construction reach codes for residential and commercial uses**

California's transition away from fossil fuel–based energy sources will bring the project's GHG emissions associated with building energy use down to zero as our electric supply becomes 100 percent carbon free. California has committed to achieving this goal by 2045 through SB 100, the 100 Percent Clean Energy Act of 2018. SB 100 strengthened the State's Renewables Portfolio Standard (RPS) by requiring that 60 percent of all electricity provided to retail users in California come from renewable sources by 2030 and that 100 percent come from carbon-free sources by 2045. The land use sector will benefit from RPS because the electricity used in buildings will be increasingly carbon-free, but implementation does not depend (directly, at least) on how buildings are designed and built.

The City has updated the LAMC with requirements for all new buildings, with some exceptions to be all-electric, which will reduce GHG emissions related to natural gas combustion. Space heating, water heating and cooking for non-restaurant uses would be required to be powered by electricity. In future years, the LADWP will be required to increase the amount of renewable energy in the power mix to comply with SB 100 requirements. The combination of the all-electric LAMC regulations and increasing availability of renewable energy will serve to reduce GHG emissions from sources traditionally powered by natural gas.

The Project would be required to comply with the LAMC and would not include natural gas uses in residential, retail, and office uses. The restaurant uses are exempt from LAMC provisions, but would represent a small portion of the development. The Project would also include 26 electric vehicle charging stations and 66 more spaces with conduits and supplies for future charging stations. Therefore, the Project would be consistent with the LAMC and not conflict with State and local decarbonization objectives.

- **Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers)**

This reduction strategy would support the Scoping Plan action regarding electrification of appliances in existing residential buildings (see Table 2-1 of the Scoping Plan). The City and Los Angeles Department of Water and Power has established rebate programs to promote use of energy-efficient products and home upgrades. Under the LADWP's Consumer Rebate Program (CRP), residential customers would receive rebates for energy-efficient upgrades such as Cool Roofs, Energy Star Windows, HVAC upgrades, pool pumps and insulation upgrades. Such upgrades would serve to reduce wasteful energy and water usage and associated GHG emissions.

While the Project would not involve retrofit of existing buildings, it would design the HVAC system to be compliant with Title 24 and green building codes for energy efficiency.

Table 6 evaluates the Project's consistency with applicable reduction actions/strategies by emissions source category outlined in the *2022 Climate Change Scoping Plan Update*.[55] When compared to SB 32, the Proposed Project would be consistent with its objectives and the GHG reduction-related actions and strategies of the 2022 Scoping Plan. Table 6 confirms that the Proposed Project is consistent with the Scoping Plan's focus on increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries. Although a number of these strategies are currently promulgated, some have not yet been formally proposed or adopted. It is expected that these measures or similar actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets. Based on the following analysis, the Project would be consistent with the State's Climate Change Scoping Plan's objective of achieving carbon neutrality statewide by 2045 and reducing 2030 GHG emissions in accord with SB 32.

Based on the analysis in Table 6, the Project would be consistent with the State's 2022 Climate Change Scoping Plan and, thus, impacts related to consistency with the Scoping Plan would be less than significant impact.

55 An evaluation of stationary sources is not necessary as the stationary sources emissions will be created by emergency generators that would only be used in an emergency.

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| Smart Growth / Vehicle Miles Traveled (VMT) | VMT per capita reduced 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045 | SB 375: Reduce demand for fossil transportation fuels and GHG | **No Conflict.** The Project represents a mixed-use infill development within an urbanized area that would concentrate new residences and commercial uses within an HQTA and reduce per capita VMT and GHG emissions. The Project would be consistent with SB 375 and its VMT reduction goals, as well as the GHG and transportation goals of the 2020-2045 RTP/SCS. |
| Light-duty Vehicle (LDV) Zero Emission Vehicles (ZEVs) | 100% of Light Duty Vehicle sales are ZEV by 2035 | EO N-79-20: Reduce demand for fossil transportation fuels and GHGs, and improve air quality.<br><br>In November 2022, the Advanced Clean Cars II regulations took effect, setting ZEV and plug-in hybrid vehicle sales requirements for model years 2026 to 2035 (ZEV program) and increasingly stringent emission standards (LEV program) to ensure automakers phase out sales of internal combustion engine vehicles. | **No Conflict.** Emissions from vehicle engines from the Project would be regulated by State regulations governing technology and cleaner emissions. |
| Truck ZEVs | 100% of medium-duty (MDV)/HDV sales are ZEV by 2040 (AB 74 University of California Institute of Transportation Studies [ITS] report) | EO N-79-20: Reduce demand for fossil transportation fuels and GHGs, and improve air quality.<br><br>CARB's Advanced Clean Truck Regulation accelerates the transition of zero-emission medium- and heavy-duty vehicles from 2024 to 2035.<br><br>CARB also adopted the Innovative Clean Transit measure in 2018 that requires all public transit agencies to transition to zero emission fleets. | **No Conflict.** While the Project would not generate substantial medium- and heavy-duty truck traffic, it would not impede the advancement of cleaner trucks over time. |

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| Aviation | 20% of aviation fuel demand is met by electricity (batteries) or hydrogen (fuel cells) in 2045. Sustainable aviation fuel meets most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries. | CARB focuses on reducing emissions from ground support equipment and airport transit vehicles. It is also working with national and international entities to tighten aircraft emission standards.<br>AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** While the Project would not directly impact aviation industry, it would not impede the advancement of a cleaner aviation industry over time. |
| Ocean-going Vessels (OGVs) | 2020 OGV At-Berth regulation fully implemented, with most OGVs utilizing shore power by 2027. 25% of OGVs utilize hydrogen fuel cell electric technology by 2045. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory<br><br>In 2015, Executive Order B-32-15 called. For a less polluting freight transport system that addressed OGVs, transport refrigeration units, and clean trucks. | **No Conflict.** While the Project would not directly impact trade or OGVs, it would not impede the advancement of a cleaner on- or off-shore sources over time. |
| Port Operations | 100% of cargo handling equipment is zero-emission by 2037. 100% of drayage trucks are zero emission by 2035. | Executive Order N-79-20: Reduce demand for petroleum fuels and GHGs, and improve air quality.<br>AB 197: direct emissions reductions for sources covered by the AB 32 Inventory.<br><br>In 2015, Executive Order B-32-15 called. For a less polluting freight transport system that addressed OGVs, transport refrigeration units, and clean trucks. | **No Conflict.** While the Project would not directly impact trade or port operations, it would not impede the advancement of a cleaner on-shore sources over time. |
| Freight and Passenger rail | 100% of passenger and other locomotive sales are ZEV by 2030. 100% of line haul locomotive sales are ZEV by 2035. Line haul and passenger rail rely primarily on hydrogen fuel cell technology, and others primarily utilize electricity. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory<br><br>In 2015, Executive Order B-32-15 called. For a less polluting freight transport system that addressed OGVs, transport refrigeration units, and clean trucks. | **No Conflict.** While the Project would not directly impact freight or passenger rail, it would not impede the advancement of a cleaner locomotives over time. The Project's land uses would not include freight transportation or warehousing that would be subject to the California Sustainable Freight Action Plan. Therefore, the Project would not interfere or impede the |

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| | | | implementation of the Sustainable Freight Action Plan. |
| Oil and Gas Extraction | Reduce oil and gas extraction operations in line with petroleum demand by 2045. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** While the Project would not directly impact oil extraction, it would help reduce demand for petroleum products from energy, area, and mobile sources. |
| Petroleum Refining | CCS on majority of operations by 2030, beginning in 2028 Production reduced in line with petroleum demand. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** While the Project would not directly impact oil extraction, it would help reduce demand for petroleum products that require refining. |
| Electricity Generation | Sector GHG target of 38 $MMTCO_2e$ in 2030 and 30 $MMTCO_2e$ in 2035. Retail sales load coverage 20 gigawatts (GW) of offshore wind by 2045. Meet increased demand for electrification without new fossil gas-fired resources. | SB 350 and SB 100: Reduce GHGs and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not directly impact the sources of electricity generation. |
| New Residential and Commercial Buildings | All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would incorporate appliances that are consistent with Title 24 and Green Building requirements and consistent with the reduction of residential energy use. In accordance with City Ordinance 187714, the Project would be all-electric with the exception of any cooking equipment associated with any restaurants or eating facilities and any gas-powered emergency backup systems. |
| Existing Residential Buildings | 80% of appliance sales are electric by 2030 and 100% of | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would comply with Title 24 and Green |

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| | appliance sales are electric by 2035. Appliances are replaced at end of life such that by 2030 there are 3 million all-electric and electric-ready homes—and by 2035, 7 million homes—as well as contributing to 6 million heat pumps installed statewide by 2030. | | Building requirements during construction and any future retrofit or appliance replacement requirements. |
| Existing Commercial Buildings | 80% of appliance sales are electric by 2030, and 100% of appliance sales are electric by 2045. Appliances are replaced at end of life, contributing to 6 million heat pumps installed statewide by 2030. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not interfere with any future requirements to retrofit commercial appliances. |
| Food Products | 7.5% of energy demand electrified directly and/or indirectly by 2030; 75% by 2045 | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not directly impact the sources of energy for food production. |
| Construction Equipment | 25% of energy demand electrified by 2030 and 75% electrified by 2045 | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not directly impact the sources of energy for construction equipment. |
| Chemicals and Allied Products; Pulp and Paper | Electrify 0% of boilers by 2030 and 100% of boilers by 2045. Hydrogen for 25% of process heat by 2035 and 100% by 2045 Electrify 100% of other energy demand by 2045. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not directly impact the sources of energy for boilers. |
| Stone, Clay, Glass, and Cement | CCS on 40% of operations by 2035 and on all facilities by 2045 Process emissions reduced through alternative materials and CCS | SB 596: Reduce demand for fossil energy, process emissions, and GHGs, and improve air quality. AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not directly impact the sources of energy for stone, clay, glass, and cement facilities. |

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| Other Industrial Manufacturing | 0% energy demand electrified by 2030 and 50% by 2045 | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not directly impact the sources of energy for industrial facilities. |
| Combined Heat and Power | Facilities retire by 2040. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not affect facilities that produced heat and power. |
| Agriculture Energy Use | 25% energy demand electrified by 2030 and 75% by 2045 | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory | **No Conflict.** The Project would not affect directly agricultural sources of energy. |
| Low Carbon Fuels for Transportation | Biomass supply is used to produce conventional and advanced biofuels, as well as hydrogen. | AB 197: direct emissions reductions for sources covered by the AB 32 Inventory<br><br>In November 2022, the Advanced Clean Cars II regulations took effect, setting low emission standards for transportation. | **No Conflict.** This regulatory program applies to fuel suppliers, not directly to land use development. GHG emissions related to vehicular travel associated with the Project would benefit from this regulation because fuel used by Project-related vehicles would be required to comply with the LCFS. Mobile source GHG emissions estimates were calculated using CalEEMod that includes implementation of the LCFS into mobile source emission factors. The current LCFS targets a 20% reduction in CI from a 2010 baseline by 2030.<br><br>GHG emissions generated by Project-related vehicular travel would benefit from the Advanced Clean Cars Program. |
| Low Carbon Fuels for Buildings and Industry | In 2030s biomethane blended in pipeline Renewable hydrogen blended in fossil gas pipeline at 7% energy (~20% by volume), ramping up between 2030 and | SB 350: The Clean Energy and Pollution Reduction Act of 2015 increases the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy | **No Conflict.** The Project would comply with this this action/strategy being located within the LADWP service area and would comply with CalGreen and Title 24 energy |

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| | 2040 In 2030s, dedicated hydrogen pipelines constructed to serve certain industrial clusters | resources be increased to 50 percent by 2030. Required measures include increasing RPS to 50 percent of retail sales by 2030, establishing annual targets for statewide energy efficiency that achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.<br><br>SB 100: The California Renewables Portfolio Standard Program (2018) requires retail sellers to procure renewable energy that is at least 50 percent by December 31, 2026 and 60 percent by December 31, 2030. It requires local publicly owned electric utilities to procure a minimum quantity of electricity from renewable energy resources of 44 percent of retail sales by December 31, 2024 and 60 percent by December 31, 2030. | efficiency standards. LADWP must generate electricity that would increase renewable energy resources to 33 percent by 2020 and 50 percent by 2030. As LADWP would provide electricity service to the Project Site, by 2030 the Project would use electricity consistent with the requirements of SB 350. LADWP's 2021 LA100 Renewable Energy Study found that 45 percent of LADWP's electricity was from renewable sources in 2020 and that 100 percent of electricity could be achieved by 2045. In accordance with City Ordinance 187714, the Project would be all-electric with the exception of any cooking equipment associated with any restaurants or eating facilities and any gas-powered emergency backup systems.<br><br>As required under SB 350, doubling of the energy efficiency savings from retail customers by 2030 would primarily rely on the existing suite of building energy efficiency standards under CCR Title 24, Part 6 (consistency with this regulation is discussed below) and utility-sponsored programs such as rebates for high-efficiency appliances, HVAC systems, and insulation. |

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| Non-combustion Methane Emissions | Increase landfill and dairy digester methane capture. Some alternative manure management deployed for smaller dairies Moderate adoption of enteric strategies by 2030 Divert 75% of organic waste from landfills by 2025. Oil and gas fugitive methane emissions reduced 50% by 2030 and further reductions as infrastructure components retire in line with reduced fossil gas demand | SB 1383 (2016) requires CARB to set 2030 emission reduction targets of 40 percent for methane and hydrofluorocarbons and 50 percent black carbon emissions below 2013 levels. The Project would comply with the CARB SLCP Reduction Strategy by using HVAC equipment with lower GWP refrigerants. | **No Conflict.** This program applies to State regulators looking to reduce methane emissions from landfill and dairy facilities and is not directly related to development of the Project. However, the Project would not interfere or impede efforts to reduce such pollutants. |
| High GWP Potential Emissions | Low GWP refrigerants introduced as building electrification increases, mitigating HFC emissions | SB 605 (2014) directed CARB to develop a comprehensive Short-Lived Climate Pollutant (SLCP) strategy. | **No Conflict.** This program applies to State regulators looking to reduce high GWP refrigerants and is not directly related to development of the Project. However, the Project would not interfere or impede efforts to reduce such pollutants. |
| Natural and Working Lands | Conserve 30% of the state's NWL and coastal waters by 2030. Implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities—and in particular low-income, disadvantaged, and vulnerable communities. | EO N-82-20 and SB 27: CARB to include an NWL target in the Scoping Plan. AB 1757: Establish targets for carbon sequestration and nature-based climate solutions.<br><br>SB 1386: NWL are an important strategy in meeting GHG reduction goals. | **No Conflict.** This program applies to State regulators governing Natural and Working Lands and is not directly related to development of the Project. However, the Project would not interfere or impede implementation of the Integrated Natural and Working Lands Implementation Plan, EO N-82-20, SB 27, or SB 1386. |

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| Forests and Shrublands | At least 2.3 million acres treated statewide annually in forests, shrublands/chaparral, and grasslands, comprised of regionally specific management strategies that include prescribed fire, thinning, harvesting, and other management actions. No land conversion of forests, shrublands/chaparral, or grasslands. | Restore health and resilience to overstocked forests and prevent carbon losses from severe wildfire, disease, and pests. Improve air quality and reduce health costs related to wildfire emissions. Improve water quantity and quality and improve rural economies. Provide forest biomass for resource utilization.<br>EO B-52-18: CARB to increase the opportunity for using prescribed fire.<br><br>AB 1504 (Skinner, Chapter 534, Statutes of 2010): CARB to recognize the role forests play in carbon sequestration and climate mitigation. | **No Conflict.** This program applies to State regulators governing forest and shrubland management and is not directly related to development of the Project. However, the Project would not interfere or impede implementation of EO B-52-18, AB 1504, or the Forest Carbon Plan. |
| Grasslands | At least 2.3 million acres treated includes increased management of grasslands interspersed in forests to reduce fuels surrounding communities using management strategies appropriate for grasslands. No land conversion of forests, shrublands/chaparral, or grasslands. | | **No Conflict.** This program applies to State regulators of grasslands and is not directly related to development of the Project. However, the Project would not interfere or impede efforts to reduce fuels in grasslands surrounding communities. |
| Croplands | Implement climate smart practices for annual and perennial crops on ~80,000 acres annually. Land easements/ conservation on annual crops at ~5,500 acres annually. Increase organic agriculture to 20% of all cultivated acres by 2045 (~65,000 acres annually). | SB 859: Recognizes the ability of healthy soils practices to reduce GHG emissions from agricultural lands. | **No Conflict.** This program applies to State regulators overseeing croplands and is not directly related to development of the Project. However, the Project would not interfere or impede SB 859 and efforts to increase organic agriculture and conserve croplands. |
| Developed Lands | Increase urban forestry investment by 200% above | AB 2251 (Calderon, Chapter 186, Statutes of 2022): Increase urban tree canopy 10% by 2035. | **No Conflict.** This program applies to State regulators addressing urban |

**Table 6**
**Consistency Analysis—2022 Scoping Plan Update**

| Sector | Actions and Strategies | Statutes, Executive Orders, Other Direction | Project Consistency Analysis |
|---|---|---|---|
| | current levels and utilize tree watering that is 30% less sensitive to drought. Establish defensible space that accounts for property boundaries. | | forestry and is not directly related to development of the Project. However, the Project would not interfere or impede implementation of AB 2251 and efforts to increase the urban canopy. |
| Wetlands | Restore 60,000 acres of Delta wetlands | | **No Conflict.** This program applies to State regulators restoring Delta wetlands and is not directly related to development of the Project. However, the Project would not interfere or impede efforts to restore wetland ecologies. |
| Sparsely Vegetated Lands | Land conversion at 50% of the Reference Scenario land conversion rate. | | **No Conflict.** This program applies to State regulators slowing the conversion of sparsely vegetated lanes and is not directly related to development of the Project. However, the Project would not interfere or impede efforts to slow urban conversion of such lands. |
| Cap-and-Trade Program | Implement the post-2020 Cap-and-Trade Program with declining annual caps. | AB 398 was enacted in 2017 to extend and clarify the role of the state's Cap-and-Trade Program from January 1, 2021, through December 31, 2030. As part of AB 398, refinements were made to the Cap-and-Trade program to establish updated protocols and allocation of proceeds to reduce GHG emissions. | **Not Applicable.** This applies to the market-based program to reduce GHG emissions over time and is not applicable to a development project. |

Source: DKA Planning, 2023 based on California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality, Scoping Plan Scenario.

Based on the consistency discussion in Table 6, the Project would be consistent with the State's Climate Change Scoping Plan and thus, Project impacts related to consistency with the Scoping Plan would be less than significant impact.

In addition to the Project's consistency with applicable GHG emissions reduction regulations and strategies, the Project would not conflict with future anticipated statewide GHG emissions reductions goals. Specifically, CARB has outlined strategies for achieving the 2030 reduction target of 40 percent below 1990 levels, as mandated by SB 32 as well as carbon neutrality by 2045. These strategies include renewable resources for the state's electricity, increasing the fuel economy of vehicles and the penetration of zero-emission or hybrid vehicles into the vehicle fleet, reducing the rate of growth in VMT, supporting high-speed rail and other alternative transportation options, and use of high-efficiency appliances, water heaters, and HVAC systems.

The Project would also benefit from statewide and utility-provider efforts towards increasing the portion of electricity provided from renewable resources. SCE has committed to increasing renewable sources that exceed the Renewables Portfolio Standard requirements. The Project would include energy efficient mechanical systems, energy efficient glazing and window frames, Energy-Star appliances to be installed on-site, and the use of high-efficiency lighting. The Project would also benefit from statewide efforts to improve fuel economy of vehicles. The Project would also help reduce VMT growth given its design and complementary mix of uses at an infill site that is accessible to existing public transit. This includes Metro Lines 4 and 60 on Sunset Boulevard, Line 55 on Figueroa Street, as well as LADOT DASH (Lincoln Heights) circulator shuttle service on Cesar Chavez Avenue. Metro's Grand Avenue Arts/Bunker Hill rail station is 4,500 feet south of the Project Site, where the A (Blue) and B (Red) Lines provide rail access to the region.

*Regional: 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy*

Table 7 provides a comparison of the Project against the GHG-related performance measures of the 2020-2045 RTP/SCS.

**Table 7**
**Consistency with the 2020 RTP/SCS**

| Objectives | Consistency Analysis[a] |
|---|---|
| Increase percentage of region's total household growth occurring within HQTAs. | **No Conflict.** The Project would result in a net increase of 327 households in an HQTA and would expand the diversity of housing choices, with 41 affordable units and additional live/work spaces that provide options for sustainable living. |
| Increase percent of the region's total employment growth occurring within HQTAs. | **No Conflict.** The mixed-use project would also include commercial spaces on the ground level that would increase service-related jobs on the Project Site and support the region's efforts to create jobs-housing balance in HQTAs. |
| Decrease total acreage of greenfield or otherwise rural land uses converted to urban use. | **Consistent.** The Project is an infill development that would reduce the demand for sprawl development in greenfield or rural areas on the fringes of Southern California. |
| Decrease daily vehicle miles driven per person. | **Consistent.** The Project is an infill development amid heavy transit infrastructure that includes access to Metro local bus |

| Objectives | Consistency Analysis[a] |
|---|---|
| | services. The limited parking for 263 vehicles would reduce car ownership for residents that would further reduce daily VMT per capita. |
| Decrease average daily distance traveled for work and non-work trips (in miles) | **Consistent.** The Project is an infill development in the dense Sunset Boulevard corridor with a heavy density of housing and jobs amid transit infrastructure that would reduce per capita travel distances. |
| Increase percentage of work and non-work trips which are less than 3 miles in length. | **Consistent.** The Project is an infill development in the dense Sunset Boulevard corridor with a heavy density of housing and jobs amid transit infrastructure that would increase the rate of travel less than three miles in length. |
| Increase share of short trip lengths for commute purposes. | **Consistent.** The Project is an infill development in the dense Sunset Boulevard corridor with a heavy density of housing and jobs amid transit infrastructure that would shorten commute trips. |
| Decrease average minutes of delay experienced per capita due to traffic congestion. | **Consistent.** The Project is an infill development in the dense Sunset Boulevard corridor that will reduce the rate of growth in auto traffic and congestion by virtue of its transit and active transportation mode share given its location. |
| Decrease excess travel time resulting from the difference between a reference speed and actual speed. | **Consistent.** The Project is an infill development in the dense Sunset Boulevard corridor that will reduce the rate of growth in auto traffic and congestion by virtue of its transit and active transportation mode share given its location. As such, the Project would help reduce recurrent traffic congestion delay for general vehicles. |
| Decrease excess travel time for heavy-duty trucks result from the difference between reference speed and actual speed. | **Consistent.** The Project is an infill development in the dense Sunset Boulevard corridor that will reduce the rate of growth in auto traffic and congestion by virtue of its transit and active transportation mode share given its location. As such, the Project would help reduce recurrent traffic congestion delay for heavy-duty trucks. |
| Increase percentage of PM peak period trips completed within 45 minutes by travel mode. | **Consistent.** The Project is an infill development that will reduce the rate of growth in auto traffic and congestion by virtue of its transit accessibility and lower car ownership rates due to the limited parking. Because the Project's location will attract travel to and from the Sunset Boulevard corridor and local community, the share of PM peak period trips that are less than 45 minutes would increase when compared to an urban sprawl location. |
| Increase percentage of trips that use transit (work and all trips) | **Consistent.** The Project is an infill development with convenient access to public transit options, include Metro Lines 4 and 60 on Sunset Boulevard, Line 55 on Figueroa Street, as well as LADOT DASH (Lincoln Heights) circulator shuttle service on Cesar Chavez Avenue. Metro's Grand Avenue Arts/Bunker Hill rail station is 4,500 feet south of the Project |

| Objectives | Consistency Analysis[a] |
|---|---|
| | Site, where the A (Blue) and B (Red) Lines provide rail access to the region. |
| Decrease average travel time to work (all modes) | **Consistent.** The Project is an infill development that will reduce the rate of growth in auto traffic and congestion by virtue of its transit and active transportation mode share given its location. Because the Project's location will attract travel to and from the Sunset Boulevard corridor and local community, average travel time to work should be reduced when compared to an urban sprawl location. |
| Increase percentage of trips using either walking or biking (by trip type) | **Consistent.** The Project is located on the Sunset Boulevard corridor, with density of residential and commercial uses that are walkable. The location of additional residents and jobs will continue the corridor's ability to promote active transportation. |
| Reduce per capita GHG emissions (from 2005 levels) | **Consistent.** The Project is an infill development in the dense Sunset Boulevard corridor that will reduce the rate of growth in auto traffic and congestion by virtue of its transit accessibility and lower car ownership levels. As such, it is consistent with AB 32, SB 32, SB 375, and other initiatives designed to reduce per capita GHG emissions from 2005 levels. |
| Increase percentage of trips using a travel mode other than single occupancy vehicle (SOV) | **Consistent.** The Project is an infill development in the dense Sunset Boulevard corridor that will reduce the rate of growth in SOV use and congestion by virtue of its transit accessibility. Residents, workers, and visitors can use public transit, including Metro Lines 4 and 60 on Sunset Boulevard, Line 55 on Figueroa Street, as well as LADOT DASH (Lincoln Heights) circulator shuttle service on Cesar Chavez Avenue. Metro's Grand Avenue Arts/Bunker Hill rail station is 4,500 feet south of the Project Site, where the A (Blue) and B (Red) Lines provide rail access to the region. On-site bicycle parking for residents and workers can support bicycle transport in lieu of driving and two Metro bikeshare stations provide other options for active transportation. In addition, the live/work units will help reduce travel demand. |

Locally, the City has several conservation-based plans, programs, and requirements that also indirectly produce GHG reductions. While these are not considered climate action plans, the Proposed Project's consistency with these local initiatives is summarized.

*Local: City of Los Angeles General Plan Air Quality Element*

The Project would be consistent with the City's General Plan, specifically its 1989 Air Quality Element. While this Element did not explicitly address control of greenhouse gases, global climate change, or resiliency objectives, it did identify several goals focused on criteria pollutant emissions

that would be effective in reducing carbon-based emissions that contribute to climate change. Table 8 summarizes the Project's general consistency with this policy document.

**Table 8**
**Consistency with the City of Los Angeles Air Quality Element**

| Goal | Consistency Analysis |
|---|---|
| 1. Good air quality and mobility in an environment of continued population growth and healthy economy. | **No Conflict.** The Project is an infill development in the Sunset Boulevard corridor that would increase the density and diversity of housing options, increase commercial land uses, while minimizing congestion impacts on the region because of its proximity to public transit and density of population and jobs. |
| 2. Less reliance on single-occupant vehicles with fewer commute and non-work trips. | **No Conflict.** The Project is an infill development that will reduce reliance on the auto because of its proximity to public transit and general density of population and jobs. Residents, workers, and visitors can use public transit, including Metro Lines 4 and 60 on Sunset Boulevard, Line 55 on Figueroa Street, as well as LADOT DASH (Lincoln Heights) circulator shuttle service on Cesar Chavez Avenue. Metro's Grand Avenue Arts/Bunker Hill rail station is 4,500 feet south of the Project Site, where the A (Blue) and B (Red) Lines provide rail access to the region. On-site bicycle parking for residents and workers can support bicycle transport in lieu of driving and two Metro bikeshare stations provide other options for active transportation. In addition, the live/work units will help reduce travel demand. The Project would reduce single-occupant vehicle trips by discouraging car ownership and resulting single-occupant vehicle use because of the limited parking (263 spaces) for residents and merchants. |
| 3. Efficient management of transportation facilities and system infrastructure using cost-effective system management and innovative demand management techniques. | **No Conflict.** This goal is aimed at local public agencies that are tasked with managing both travel demand and the efficiency of the transportation system. However, the Proposed Project would not adversely impact the City's pursuit of system optimization. |
| 4. Minimal impact of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation, and air quality. | **No Conflict.** The Project is an infill development in the dense Sunset Boulevard corridor that would be consistent with the Element's focus on growing near transit facilities. Residents, workers, and visitors can use public transit, including Metro Lines 4 and 60 on Sunset Boulevard, Line 55 on Figueroa Street, as well as LADOT DASH (Lincoln Heights) circulator shuttle service on Cesar Chavez Avenue. Metro's Grand Avenue Arts/Bunker Hill rail station is 4,500 feet south of the Project Site, where the A (Blue) and B (Red) Lines |

| | |
|---|---|
| | provide rail access to the region. On-site bicycle parking for residents and workers can support bicycle transport in lieu of driving and two Metro bikeshare stations provide other options for active transportation. In addition, the live/work units will help reduce travel demand. The Project would reduce single-occupant vehicle trips by discouraging car ownership and resulting single-occupant vehicle use because of the limited parking (263 spaces) for residents and merchants. |
| 5. Energy efficiency through land use and transportation planning, the use of renewable resources and less polluting fuels, and the implementation of conservation measures including passive methods such as site orientation and free parking. | **No Conflict.** This goal is aimed at local public agencies and the need to optimize land use and transportation planning decisions. However, the Proposed Project would not adversely impact the City's pursuit of land use and transportation coordination. |
| 6. Citizen awareness of the linkages between personal behavior and air pollution, and participation in efforts to reduce air pollution. | **No Conflict.** This goal is focused on City outreach and public education about personal behavior and its connection to air pollution. Nevertheless, the Project would not interfere with this policy objective. Residents and commercial tenants would be provided with information about alternatives to driving upon moving in. |
| *Source: DKA Planning, 2023.* | |

*Local: City of Los Angeles Green New Deal (Sustainability pLAn)*

The Sustainable City pLAn was a mayoral initiative in 2015 and includes both short-term and long-term aspirations through 2035 in various topic areas, including: water, solar power, energy-efficient buildings, carbon and climate leadership, waste and landfills, housing and development, mobility and transit, and air quality, among others.[56]

The Green New Deal was a 2019 mayoral initiative that updated the Sustainable City pLAn, including both short-term and long-term aspirations through 2035 for water, solar power, energy-efficient buildings, carbon and climate leadership, waste and landfills, housing and development, mobility and transit, and air quality, among others.[57] Targets include ensuring 75 percent of new housing units within 1,500 feet of transit by 2046, reducing vehicle miles traveled per capita by 45 percent by 2050, and moving toward 100 percent zero emission vehicles by 2050.

Although the Green New Deal is not an adopted plan or directly applicable to private development projects, the Project would benefit from local access to Metro bus service. Further, the Project

[56] City of Los Angeles, Sustainable City pLAn, 2019.
[57] City of Los Angeles, Green New Deal, 2019.

would comply with CALGreen and would comply with the City's Solid Waste Management Policy Plan, the RENEW LA Plan, and the Exclusive Franchise System Ordinance (Ordinance No. 182,986) in furtherance of the aspirations included in the Green New Deal regarding energy-efficient buildings and waste and landfills. The Project would also provide secure short- and long-term bicycle storage areas for residents, employees, and visitors. Therefore, the Project would be consistent with the Green New Deal, and impacts would be less than significant.

*Conclusion*

In summary, the plan consistency analysis provided above demonstrates that the Project complies with the applicable plans, policies, regulations and GHG emissions reduction actions/strategies outlined in the *Climate Change Scoping Plan and Update*, the 2020-2045 RTP/SCS, the City's General Plan Air Quality Element, and the Green New Deal. Consistency with the above plans, policies, regulations, and GHG emissions reduction actions/strategies would reduce the Project's incremental contribution of GHG emissions. Thus, the Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing emissions of GHG emissions. Furthermore, because the Project is consistent and does not conflict with these plans, policies, and regulations, the Project's incremental increase in GHG emissions as described above would not result in a significant impact on the environment. Therefore, Project-specific impacts regarding climate change would be less than significant.

***Project Emissions***

In support of the consistency analysis above that describes the Project's compliance with, or exceedance of performance-based standards included in the regulations and policies outlined in the applicable portions of the *Climate Change Scoping Plan*, the 2020-2045 RTP/SCS, the City's General Plan Air Quality Element, and the Green New Deal, quantitative calculations are provided below.

The Project would generate direct and indirect GHG emissions because of different types of emissions sources, including the following:

- Construction: emissions associated with demolition of the existing motel uses and parking areas, shoring, excavation, grading, and construction-related equipment and vehicular activity;
- Area source: emissions associated with landscape equipment;
- Energy source (building operations): emissions associated with electricity and natural gas use for space heating and cooling, water heating, energy consumption, and lighting;
- Stationary source: emissions associated with stationary equipment (e.g., emergency generators);

- Mobile source: emissions associated with vehicles accessing the Project Site;
- Solid Waste: emissions associated with the decomposition of the waste, which generates methane based on the total amount of degradable organic carbon;
- Water/Wastewater: emissions associated with energy used to pump, convey, deliver, and treat water.
- Vegetation: emissions associated with sequestration from tree planting or removal; and
- Refrigerants: These are substances used in equipment for air conditioning and refrigeration. Most refrigerants are HFCs or blends of them, which can have high GWP values.

The Project would generate an incremental contribution to and a cumulative increase in GHG emissions. A specific discussion regarding potential GHG emissions associated with the construction and operational phases of the Project is provided below.

*Construction*

Project construction is anticipated to be completed in 2027 with occupancy the same year. A summary of construction details (e.g., schedule, equipment mix, and vehicular trips) and CalEEMod modeling output files are provided in the Technical Appendix. The GHG emissions associated with construction of the Project were calculated for each year of construction activity.

Construction of the Project is estimated to generate a total of 3,465 $MTCO_2e$ (Table 9). As recommended by the SCAQMD, the total GHG construction emissions were amortized over the 30-year lifetime of the Project (i.e., total construction GHG emissions were divided by 30 to determine an annual construction emissions estimate that can be added to the Project's operational emissions) to determine the Project's annual GHG emissions inventory.[58] This results in annual Project construction emissions of 116 $MTCO_2e$. A complete listing of the construction equipment by on-site and off-site activities, duration, and emissions estimation model input assumptions used in this analysis is included within the emissions calculation worksheets that are provided in the Technical Appendix.

**Table 9**
**Combined Construction-Related Emissions ($MTCO_2e$)**

| Year | $MTCO_2e$[a] |
|---|---|
| 2024 | 2 |
| 2025 | 1,200 |
| 2026 | 1,519 |
| 2027 | 744 |
| **Total** | **3,465** |

58 SCAQMD Governing Board Agenda Item 31, December 5, 2008.

| | |
|---|---|
| **Amortized Over 30 Years** | **116** |
| *a $CO_2e$ was calculated using CalEEMod version 2022.1.1.17. Detailed results are provided in the Technical Appendix.* | |
| *Source: DKA Planning, 2023.* | |

*Operation*

Area Source Emissions

Area source emissions were calculated using the CalEEMod emissions inventory model, which includes landscape maintenance equipment, use of consumer products, and other everyday sources. As shown in Table 10, the Project would result in eight $MTCO_2e$ per year from area sources.

**Table 10**
**Annual GHG Emissions Summary (Buildout)[a]**
**(metric tons of carbon dioxide equivalent [MTCO2e])**

| Year | $MTCO_2$[a] |
|---|---|
| Area[b] | 8 |
| Energy[c] (electricity and natural gas) | 605 |
| Mobile | 1,536 |
| Solid Waste[d] | 95 |
| Water/Wastewater[e] | 54 |
| Vegetation | -8 |
| Refrigerants | 3 |
| Construction | 116 |
| **Total Emissions** | **2,409** |

*a $CO_2e$ was calculated using CalEEMod and the results are provided in the Technical Appendix.*
*b Area source emissions are from landscape equipment and other operational equipment only; hearths omitted.*
*c Energy source emissions are based on CalEEMod default electricity and natural gas usage rates.*
*d Solid waste emissions are calculated based on CalEEMod default solid waste generation rates.*
*e Water/Wastewater emissions are calculated based on CalEEMod default water consumption rates.*
*Source: DKA Planning, 2023.*

Electricity and Natural Gas Generation Emissions

GHG emissions are emitted because of activities in buildings when electricity and natural gas are used as energy sources. Combustion of any type of fuel emits $CO_2$ and other GHG emissions directly into the atmosphere. When electricity is used in a building, the electricity generation typically takes place off-site at the power plant; electricity use in a building generally causes emissions in an indirect manner.

Electricity and natural gas emissions were calculated for the Project using the CalEEMod emissions inventory model, which multiplies an estimate of the energy usage by applicable emissions factors chosen by the utility company. GHG emissions from electricity use are directly dependent on the electricity utility provider. In this case, GHG emissions intensity factors for LADWP were selected in CalEEMod. The carbon intensity ((pounds per megawatt an hour (lbs/MWh)) for electricity generation was calculated for the Project buildout year based on LADWP projections. A straight-line interpolation was performed to estimate the LADWP carbon intensity factor for the Project buildout year. LADWP's carbon intensity projections also consider SB 350 RPS requirements for renewable energy.

This approach is conservative, given the 2018 chaptering of SB 100 (De Leon), which requires electricity providers to provide renewable energy for at least 60 percent of their delivered power by 2030 and 100 percent use of renewable energy and zero-carbon resources by 2045. SB 100 also increases existing renewable energy targets, called Renewables Portfolio Standard (RPS), to 44 percent by 2024 and 52 percent by 2027.

The 2022 Title 24 standards contain more substantial energy efficiency requirements for new construction, emphasizing the importance of building design and construction flexibility to establish performance standards that substantially reduce energy consumption for water hating, lighting, and insulation for attics and walls. In accordance with City Ordinance 187714, the Project would be all-electric with the exception of any cooking equipment associated with any restaurants or eating facilities and any gas-powered emergency backup systems.[59]

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building, such as in plug-in appliances. CalEEMod calculates energy use from systems covered by Title 24 (e.g., HVAC system, water heating system, and lighting system); energy use from lighting; and energy use from office equipment, appliances, plug-ins, and other sources not covered by Title 24 or lighting.

CalEEMod electricity and natural gas usage rates are based on the CEC-sponsored California Commercial End-Use Survey (CEUS) and the California Residential Appliance Saturation Survey (RASS) studies.[60] The data are specific for climate zones; therefore, Zone 11 was selected for the Project Site based on the zip code tool.

[59] Energy consumption estimates with CalEEMod 2022.1.1.17 are based on the California Energy Commission's 2020 Residential Appliance Saturation Survey (residential uses) and 2021 Commercial Forecast database, both of which reflected the 2019 Title 24 energy efficiency standards. These energy consumption estimates were adjusted to reflect the 2022 Title 24 standards that cumulatively produce a 0.49 percent reduction in electricity use and 0.45 percent reduction in natural gas use when compared to the 2019 standards.

[60] California Energy Commission, Commercial End-Use Survey, March 2006, and California Residential Appliance Saturation Survey, October 2010.

As shown in Table 10, Project GHG emissions from electricity and natural gas usage would result in a total of 605 $MTCO_2e$ per year. This reflects the all-electric plan for the residential uses.

Mobile Source Emissions

Mobile-source emissions were calculated using the SCAQMD-recommended CalEEMod emissions inventory model. CalEEMod calculates the emissions associated with on-road mobile sources associated with residents, employees, visitors, and delivery vehicles visiting the Project Site based on the number of daily trips generated and VMT.

Mobile source operational GHG emissions were calculated using CalEEMod and are based on the Project trip-generation estimates. To calculate daily trips, the number of hotel rooms and amount of building area for the restaurant uses were multiplied by the applicable trip-generation rates based on the Institute of Transportation Engineers (ITE)'s *Trip Generation, 11th Edition*.

The Project represents an infill development within an urbanized area that would concentrate residential and commercial uses within an HQTA.[61] The Project Site is in the dense Sunset Boulevard corridor with proximity to transit opportunities, which would encourage the use of alternative modes of transportation. Residents, workers, and visitors can use public transit, including Metro Lines 4 and 60 on Sunset Boulevard, Line 55 on Figueroa Street, as well as LADOT DASH (Lincoln Heights) circulator shuttle service on Cesar Chavez Avenue. Metro's Grand Avenue Arts/Bunker Hill rail station is 4,500 feet south of the Project Site, where the A (Blue) and B (Red) Lines provide rail access to the region. On-site bicycle parking for residents and workers can support bicycle transport in lieu of driving and two Metro bikeshare stations provide other options for active transportation. In addition, the live/work units will help reduce travel demand.

The Project characteristics listed below are consistent with the CAPCOA guidance document, *Quantifying Greenhouse Gas Mitigation Measures*, which provides emission reduction values for transportation related design techniques.[62] These techniques would reduce vehicle trips and VMT associated with the Project relative to the standard ITE trip generation rates, which would result in a comparable reduction in VMT and associated GHG emissions. Techniques applicable to the

61 The Project Site is also located in Transit Priority Area as defined by Public Resources Code Section 20199. Public Resources Code Section 21099 defines a "transit priority area" as an area within 0.5 miles of a major transit stop that is "existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations." Public Resources Code Section 21064.3 defines "major transit stop" as "a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods." Also refer to the City's ZIMAS System regarding the location of the Project Site within a Transit Priority Area..

62 CAPCOA, Quantifying Greenhouse Gas Mitigation Measures, 2010.

Project include the following (a brief description of the Project's relevance to the measure is also provided):

- **CAPCOA Measure LUT-1 – Increase Density:** Increased density, measured in terms of persons, jobs, or dwelling units per unit area, reduces emissions associated with transportation as it reduces the distance people travel for work or services and provides a foundation for the implementation of other strategies, such as enhanced transit services.

- **CAPCOA Measure LUT-3 – Increase Diversity of Urban and Suburban Developments (Mixed-Use):** The Project would introduce new residential and commercial uses on the Project Site. The increases in land use diversity, including different housing types, on the Project Site would reduce vehicle trips and VMT by encouraging visitors to walk and use non-automotive forms of transportation (i.e., public transit, biking), which would result in corresponding reductions in transportation-related emissions.

- **CAPCOA Measure LUT-4 – Increase Destination Accessibility:** The Project Site is in the dense Sunset Boulevard corridor, a regional job center, also easily accessible by public transportation. Access to multiple destinations, and commercial and retail uses in proximity to the Project Site would reduce vehicle trips and VMT compared to the statewide average and encourage walking and non-automotive forms of transportation and would result in corresponding reductions in transportation-related emissions because of the Project.

- **CAPCOA Measure LUT-5 – Increase Transit Accessibility:** The Project would be located near several transit opportunities, including Metro Lines 4 and 60 on Sunset Boulevard, Line 55 on Figueroa Street, as well as LADOT DASH (Lincoln Heights) circulator shuttle service on Cesar Chavez Avenue. Metro's Grand Avenue Arts/Bunker Hill rail station is 4,500 feet south of the Project Site, where the A (Blue) and B (Red) Lines provide rail access to the region.

- **CAPCOA Measure LUT-9 – Improve Design of Development:** The Project would enhance the pedestrian and bicycle environment through an attractive open space component and improved sidewalk and streetscape, which would enhance walkability in the Project vicinity. The Project would also locate a development with a high level of street access to Sunset Boulevard, which improves street accessibility and connectivity.

- **CAPCOA Measure SDT-2 – Traffic Calming Measures:** Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift results in a decrease in VMT. Streets within a half mile of the Project Site are equipped with sidewalks, and several of the intersections include marked crosswalks and/or count-down signal timers that calm traffic.

CalEEMod calculates VMT based on the type of land use, trip purpose, and trip type percentages for each land use subtype in the project (primary, diverted, and pass-by). As shown in Table 10,

the Project GHG emissions from mobile sources would result in a total of 1,536 $MTCO_2e$ per year. This estimate reflects reductions attributable to the Project's characteristics (e.g., infill project near transit that supports multi-modal transportation options), as described above.

Solid Waste Generation Emissions

Emissions related to solid waste were calculated using the CalEEMod emissions inventory model, which multiplies an estimate of the waste generated by applicable emissions factors provided in Section 2.4 of the USEPA's AP-42, Compilation of Air Pollutant Emission Factors. CalEEMod solid waste generation rates for each applicable land use were selected for this analysis. As shown in Table 10, the Project scenario is expected to result in a total of 95 $MTCO_2e$ per year from solid waste that accounts for a 50-percent recycling/diversion rate.[63]

Water Usage and Wastewater Generation Emissions

GHG emissions are related to the energy used to convey, treat, and distribute water, and treat wastewater. Thus, these emissions are generally indirect emissions from the production of electricity to power these systems. Three processes are necessary to supply potable water; these include (1) supply and conveyance of the water from the source; (2) treatment of the water to potable standards; and (3) distribution of the water to individual users. After use, energy is used as the wastewater is treated and reused as reclaimed water.

Emissions related to water usage and wastewater generation were calculated for the Project using the CalEEMod emissions inventory model, which multiplies an estimate of the water usage by the applicable energy intensity factor to determine the embodied energy necessary to supply potable water.[64] GHG emissions are then calculated based on the amount of electricity consumed multiplied by the GHG emissions intensity factors for the utility provider. In this case, embodied energy for Southern California supplied water and GHG emissions intensity factors for LADWP were selected in CalEEMod. Water usage rates were calculated consistent with the requirements under City Ordinance No. 184,248, 2022 California Plumbing Code (which is based on the 2021 Uniform Plumbing Code), 2022 CALGreen, Los Angeles Plumbing Code, and Los Angeles Green Building Code, and reflect an approximately 20-percent reduction as compared to the base demand.

LADWP's programs includes programs designed to reduce indoor water consumption and wastewater generation by 20 percent. These include the 2022 requirements for installation of the latest ultra-high efficiency plumbing fixtures, the standards that promote increasing water-resistant turf and incorporating rainfall capture techniques in project designs, aggressive outdoor

63 AB 341 (2012) increased the Statewide waste diversion goal from 50 to 75 percent from baseline rates established by CalRecycle by 2020 and beyond. Further, SB 1383 (2016) requires jurisdictions to reduce 75 percent of organic waste disposal in landfills by 2030.

64 The intensity factor reflects the average pounds of $CO_2e$ per megawatt generated by a utility company.

water consumption programs through its Landscape ordinance, and water recycling programs designed to increase recycled water to 59,000 acre-feet by 2035.

As shown in Table 10, Project GHG emissions from water/wastewater usage would result in a total of 54 $MTCO_2e$ per year, which reflects a 20-percent reduction in water/wastewater emissions consistent with building code requirements as compared to the Project without sustainability features related to water conservation.

Vegetation

The planting of 84 trees throughout the development will help to sequester carbon emissions. These trees would generally be 24" box trees, which equates to about two inches of diameter at breast height (DBH), or about 4'6" above the ground. These will help to capture and reduce GHG emissions. As illustrated in Table 10, proposed trees would reduce eight $MTCO_2e$ per year.

Refrigerants

Emissions related to cooling structures and refrigeration needs were calculated using the CalEEMod emissions inventory model. As shown in Table 10, the Project scenario is expected to result in a total of three $MTCO_2e$ per year from use of refrigerants that used HFCs and have high GWP values.

Combined Construction and Operational Emissions

As shown in Table 10, when taking into consideration implementation of project design features, including the requirements set forth in the City's Green Building Code and the full implementation of current state mandates, the GHG emissions for the Project would equal 2,409 $MTCO_2e$ annually (as amortized over 30 years).

Estimated Reduction of Project Related GHG Emissions Resulting from Consistency with Plans

As noted earlier, one approach to demonstrating a project's consistency with GHG plans is to show how a project will reduce its incremental contribution through a Project Without Reduction Features comparison. The analysis in this section includes potential emissions under a Project Without Reduction Features scenario and from the Project at build-out based on actions and mandates in force in 2027.

As shown in Table 11, the emissions for the Project and its associated CARB 2024 Project Without Reduction Features scenario are estimated to be 1,374 and 2,152 $MTCO_2e$ per year, respectively, which shows the Project would reduce emissions by 36.1 percent from CARB's 2024 Project Without Reduction Features scenario.

**Table 11**
**Estimated Reduction of Project-Related GHG Emissions Resulting from Consistency with Plans**

| Scenario and Source | Project Without Reduction Features Scenario* | As Proposed Scenario | Reduction from Project Without Reduction Features Scenario | Change from Project Without Reduction Features Scenario |
|---|---|---|---|---|
| Area Sources | 8 | 8 | - | 0% |
| Energy Sources | 1,043 | 605 | -438 | -42% |
| Mobile Sources | 2,188 | 1,536 | -652 | -30% |
| Waste Sources | 95 | 95 | - | 0% |
| Water Sources | 54 | 54 | - | 0% |
| Vegetation | -8 | -8 | - | 0% |
| Refrigerants | 3 | 3 | - | 0% |
| Construction | 116 | 116 | - | 0% |
| **Total Emissions** | 3,499 | 2,409 | -1,090 | -31.2% |

*Daily construction emissions amortized over 30-year period pursuant to SCAQMD guidance. Annual construction emissions derived by taking total emissions over duration of activities and dividing by construction period.*
** Project Without Reduction Features scenario does not assume 30% reduction in in mobile source emissions from Pavley emission standards (19.8%), low carbon fuel standards (7.2%), vehicle efficiency measures 2.8%); does not assume 42% reduction in energy production emissions from the State's renewables portfolio standard (33%), natural gas extraction efficiency measures (1.6%), and natural gas transmission and distribution efficiency measures (7.4%).*
*Source: DKA Planning, 2023.*

The analysis in this section uses the 2022 Scoping Plan's statewide goals as one approach to evaluate the Project's incremental contribution to climate change. The methodology is to compare the Project's emissions as proposed to the Project's emissions as if the Project were built using a Project Without Reduction Features approach in terms of design, methodology, and technology. This means the Project's emissions were calculated as if the Project was constructed with project design features to reduce GHG emissions that are not required by state or local code and with several regulatory measures adopted in furtherance of AB 32.

While the AB 32 Scoping Plan's cumulative statewide objectives were not intended to serve as the basis for project-level assessments, this analysis finds that its Project Without Reduction Features comparison based on the Scoping Plan is appropriate, because the Project would contribute to statewide GHG emissions reduction goals. Specifically, the Project's mixed-use nature and location in an existing urban setting provide opportunities to reduce transportation-related emissions. First, it would capture vehicle travel on-site that would have normally been destined for off-site locations. This produces substantial reductions in the amount of vehicle trips and VMT that no longer are made. Second, it would eliminate many vehicle trips, because travel to and from the Project Site could be captured by public transit and active transportation instead. Finally, it would attract existing trips on the street network that would divert to the proposed development.

*Post-2030 Analysis*

Recent studies show that the state's existing and proposed regulatory framework will put the state on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted.[65] Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the state to meet the 2050 target. After the findings of these studies, SB 32 was passed on September 8, 2016, and would require the state board to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. As discussed above, the new plan, outlined in SB 32, involves increasing renewable energy use, imposing tighter limits on the carbon content of gasoline and diesel fuel, putting more electric cars on the road, improving energy efficiency, and curbing emissions from key industries.

As discussed above, SCAG's 2020-2045 RTP/SCS establishes a regulatory framework for achieving GHG reductions from the land use and transportation sectors pursuant to SB 375 and the state's long-term climate policies. The 2020-2045 RTP/SCS ensures VMT reductions and other measures that reduce regional emissions from the land use and transportation sectors.

The Project is the type of land use development that is encouraged by the RTP/SCS to reduce VMT and expand multi-modal transportation options for the region to achieve the GHG reductions from the land use and transportation sectors required by SB 375, which, in turn, advances the state's long-term climate policies. By furthering implementation of SB 375, the Project supports regional land use and transportation GHG reductions consistent with state climate targets for 2020 and beyond. In addition, the Project would be consistent with the Actions and Strategies set forth in the 2020-2045 RTP/SCS. Therefore, the Project would be consistent with the 2020-2045 RTP/SCS.

*Conclusion*

Given the Project's consistency with state, SCAG, and City GHG emissions reduction goals and objectives, the Project is consistent with applicable plans, policies, and regulations adopted for

65 Energy and Environmental Economics (E3). "Summary of the California State Agencies' PATHWAYS Project: Long-term Greenhouse Gas Reduction Scenarios" (April 2015); Greenblatt, Jeffrey, Energy Policy, "Modeling California Impacts on Greenhouse Gas Emissions" (Vol. 78, pp. 158–172). The California Air Resources Board, California Energy Commission, California Public Utilities Commission, and the California Independent System Operator engaged E3 to evaluate the feasibility and cost of a range of potential 2030 targets along the way to the state's goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. With input from the agencies, E3 developed scenarios that explore the potential pace at which emission reductions can be achieved, as well as the mix of technologies and practices deployed. E3 conducted the analysis using its California PATHWAYS model. Enhanced specifically for this study, the model encompasses the entire California economy with detailed representations of the buildings, industry, transportation, and electricity sectors.

the purpose of reducing the emissions of GHGs. In the absence of adopted standards and established significance thresholds, and given this consistency, it is concluded that the Project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable.

**Cumulative Impacts**

As explained above, the analysis of a project's GHG emissions is inherently a cumulative impacts analysis, because climate change is a global problem, and the emissions from any single project alone would be negligible. Accordingly, the analysis above considered the potential for the Project to contribute to the cumulative impact of global climate change.

The analysis shows that the Project is consistent with CARB's *Climate Change Scoping Plan*, particularly its emphasis on the identification of emission reduction opportunities that promote economic growth while achieving greater energy efficiency and accelerating the transition to a low-carbon economy. The analysis also shows that the Project would be consistent with the 2020-2045 RTP/SCS, which would serve to reduce regional GHG emissions from the land use and transportation sectors by 2020 and 2035. In addition, the Project would comply with the LA Green Plan, which emphasizes improving energy conservation and energy efficiency, increasing renewable energy generation, and changing transportation and land use patterns to reduce auto dependence. Furthermore, the Project would generally comply with the aspirations of the City's Air Quality Element and Green New Deal, which includes specific targets related to housing and development, and mobility and transit. Given the Project's consistency with statewide, regional, and local plans adopted for the reduction of GHG emissions, it is concluded that the Project's incremental contribution to greenhouse gas emissions and their effects on climate change would not be cumulatively considerable. For these reasons, the Project's cumulative contribution to global climate change is less than significant.

# TECHNICAL APPENDIX

DouglasKim+Associates,LLC

# GREENHOUSE GAS EMISSIONS

# Sunset Everett (Future) Detailed Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Sunset Everett (Future) |
| Construction Start Date | 12/24/2024 |
| Operational Year | 2027 |
| Lead Agency | City of Los Angeles |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 0.50 |
| Precipitation (days) | 16.8 |
| Location | 1185 W Sunset Blvd, Los Angeles, CA 90026, USA |
| County | Los Angeles-South Coast |
| City | Los Angeles |
| Air District | South Coast AQMD |
| Air Basin | South Coast |
| TAZ | 4029 |
| EDFZ | 16 |
| Electric Utility | Los Angeles Department of Water & Power |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.17 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 327 | Dwelling Unit | 2.30 | 311,838 | 37,095 | — | 773 | — |
| High Turnover (Sit Down Restaurant) | 9.46 | 1000sqft | 0.16 | 9,462 | 0.00 | — | — | — |
| Enclosed Parking with Elevator | 263 | Space | 0.00 | 105,200 | 0.00 | — | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

| Sector | # | Measure Title |
|---|---|---|
| Energy | E-15 | Require All-Electric Development |

# 2. Emissions Summary

## 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Unmit. | — | 16,841 | 16,841 | 0.69 | 0.75 | 19.0 | 17,018 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Unmit. | — | 12,746 | 12,746 | 0.54 | 0.76 | 0.49 | 12,891 |
| Average Daily (Max) | — | — | — | — | — | — | — |
| Unmit. | — | 9,067 | 9,067 | 0.38 | 0.36 | 5.41 | 9,174 |
| Annual (Max) | — | — | — | — | — | — | — |
| Unmit. | — | 1,501 | 1,501 | 0.06 | 0.06 | 0.90 | 1,519 |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — |
| 2025 | — | 12,950 | 12,950 | 0.53 | 0.75 | 19.0 | 13,111 |
| 2026 | — | 12,840 | 12,840 | 0.53 | 0.43 | 17.5 | 12,999 |
| 2027 | — | 16,841 | 16,841 | 0.69 | 0.47 | 18.4 | 17,018 |
| Daily - Winter (Max) | — | — | — | — | — | — | — |
| 2024 | — | 858 | 858 | 0.04 | 0.10 | 0.04 | 888 |
| 2025 | — | 12,746 | 12,746 | 0.54 | 0.76 | 0.49 | 12,891 |
| 2026 | — | 12,641 | 12,641 | 0.53 | 0.43 | 0.45 | 12,783 |
| 2027 | — | 12,538 | 12,538 | 0.42 | 0.42 | 0.42 | 12,675 |
| Average Daily | — | — | — | — | — | — | — |
| 2024 | — | 14.1 | 14.1 | < 0.005 | < 0.005 | 0.01 | 14.6 |
| 2025 | — | 7,126 | 7,126 | 0.31 | 0.36 | 4.64 | 7,245 |
| 2026 | — | 9,067 | 9,067 | 0.38 | 0.31 | 5.41 | 9,174 |
| 2027 | — | 4,447 | 4,447 | 0.15 | 0.13 | 2.22 | 4,493 |
| Annual | — | — | — | — | — | — | — |
| 2024 | — | 2.34 | 2.34 | < 0.005 | < 0.005 | < 0.005 | 2.42 |
| 2025 | — | 1,180 | 1,180 | 0.05 | 0.06 | 0.77 | 1,200 |
| 2026 | — | 1,501 | 1,501 | 0.06 | 0.05 | 0.90 | 1,519 |
| 2027 | — | 736 | 736 | 0.02 | 0.02 | 0.37 | 744 |

## 2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — |
| 2025 | — | 12,950 | 12,950 | 0.53 | 0.75 | 19.0 | 13,111 |
| 2026 | — | 12,840 | 12,840 | 0.53 | 0.43 | 17.5 | 12,999 |
| 2027 | — | 16,841 | 16,841 | 0.69 | 0.47 | 18.4 | 17,018 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Daily - Winter (Max) | — | — | — | — | — | — | — |
| 2024 | — | 858 | 858 | 0.04 | 0.10 | 0.04 | 888 |
| 2025 | — | 12,746 | 12,746 | 0.54 | 0.76 | 0.49 | 12,891 |
| 2026 | — | 12,641 | 12,641 | 0.53 | 0.43 | 0.45 | 12,783 |
| 2027 | — | 12,538 | 12,538 | 0.42 | 0.42 | 0.42 | 12,675 |
| Average Daily | — | — | — | — | — | — | — |
| 2024 | — | 14.1 | 14.1 | < 0.005 | < 0.005 | 0.01 | 14.6 |
| 2025 | — | 7,126 | 7,126 | 0.31 | 0.36 | 4.64 | 7,245 |
| 2026 | — | 9,067 | 9,067 | 0.38 | 0.31 | 5.41 | 9,174 |
| 2027 | — | 4,447 | 4,447 | 0.15 | 0.13 | 2.22 | 4,493 |
| Annual | — | — | — | — | — | — | — |
| 2024 | — | 2.34 | 2.34 | < 0.005 | < 0.005 | < 0.005 | 2.42 |
| 2025 | — | 1,180 | 1,180 | 0.05 | 0.06 | 0.77 | 1,200 |
| 2026 | — | 1,501 | 1,501 | 0.06 | 0.05 | 0.90 | 1,519 |
| 2027 | — | 736 | 736 | 0.02 | 0.02 | 0.37 | 744 |

## 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Unmit. | 194 | 15,459 | 15,652 | 20.3 | 0.54 | 49.2 | 16,370 |
| Mit. | 194 | 14,421 | 14,615 | 20.2 | 0.53 | 49.2 | 15,329 |
| % Reduced | — | 7% | 7% | < 0.5% | < 0.5% | — | 6% |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Unmit. | 194 | 14,952 | 15,146 | 20.3 | 0.56 | 17.9 | 15,839 |
| Mit. | 194 | 13,915 | 14,108 | 20.3 | 0.56 | 17.9 | 14,798 |
| % Reduced | — | 7% | 7% | < 0.5% | < 0.5% | — | 7% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Average Daily (Max) | — | — | — | — | — | — | — |
| Unmit. | 194 | 14,009 | 14,203 | 20.3 | 0.52 | 29.4 | 14,895 |
| Mit. | 194 | 12,972 | 13,165 | 20.2 | 0.52 | 29.4 | 13,855 |
| % Reduced | — | 7% | 7% | < 0.5% | < 0.5% | — | 7% |
| Annual (Max) | — | — | — | — | — | — | — |
| Unmit. | 32.1 | 2,319 | 2,351 | 3.36 | 0.09 | 4.86 | 2,466 |
| Mit. | 32.1 | 2,148 | 2,180 | 3.35 | 0.09 | 4.86 | 2,294 |
| % Reduced | — | 7% | 7% | < 0.5% | < 0.5% | — | 7% |

## 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Sector | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Mobile | — | 10,559 | 10,559 | 0.53 | 0.43 | 32.2 | 10,732 |
| Area | 0.00 | 70.1 | 70.1 | < 0.005 | < 0.005 | — | 70.4 |
| Energy | — | 4,676 | 4,676 | 0.35 | 0.04 | — | 4,695 |
| Water | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Waste | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Refrig. | — | — | — | — | — | 17.0 | 17.0 |
| Vegetation | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Total | 194 | 15,459 | 15,652 | 20.3 | 0.54 | 49.2 | 16,370 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Mobile | — | 10,123 | 10,123 | 0.55 | 0.45 | 0.83 | 10,272 |
| Area | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Energy | — | 4,676 | 4,676 | 0.35 | 0.04 | — | 4,695 |
| Water | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Waste | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Refrig. | — | — | — | — | — | 17.0 | 17.0 |
| Vegetation | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Total | 194 | 14,952 | 15,146 | 20.3 | 0.56 | 17.9 | 15,839 |
| Average Daily | — | — | — | — | — | — | — |
| Mobile | — | 9,132 | 9,132 | 0.51 | 0.41 | 12.3 | 9,280 |
| Area | 0.00 | 48.0 | 48.0 | < 0.005 | < 0.005 | — | 48.2 |
| Energy | — | 4,676 | 4,676 | 0.35 | 0.04 | — | 4,695 |
| Water | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Waste | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Refrig. | — | — | — | — | — | 17.0 | 17.0 |
| Vegetation | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Total | 194 | 14,009 | 14,203 | 20.3 | 0.52 | 29.4 | 14,895 |
| Annual | — | — | — | — | — | — | — |
| Mobile | — | 1,512 | 1,512 | 0.09 | 0.07 | 2.04 | 1,536 |
| Area | 0.00 | 7.95 | 7.95 | < 0.005 | < 0.005 | — | 7.98 |
| Energy | — | 774 | 774 | 0.06 | 0.01 | — | 777 |
| Water | 4.78 | 33.2 | 37.9 | 0.49 | 0.01 | — | 53.8 |
| Waste | 27.3 | 0.00 | 27.3 | 2.73 | 0.00 | — | 95.4 |
| Refrig. | — | — | — | — | — | 2.82 | 2.82 |
| Vegetation | — | -7.75 | -7.75 | — | — | — | -7.75 |
| Total | 32.1 | 2,319 | 2,351 | 3.36 | 0.09 | 4.86 | 2,466 |

## 2.6. Operations Emissions by Sector, Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Sector | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Mobile | — | 10,559 | 10,559 | 0.53 | 0.43 | 32.2 | 10,732 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Area | 0.00 | 70.1 | 70.1 | < 0.005 | < 0.005 | — | 70.4 |
| Energy | — | 3,638 | 3,638 | 0.26 | 0.03 | — | 3,655 |
| Water | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Waste | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Refrig. | — | — | — | — | — | 17.0 | 17.0 |
| Vegetation | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Total | 194 | 14,421 | 14,615 | 20.2 | 0.53 | 49.2 | 15,329 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Mobile | — | 10,123 | 10,123 | 0.55 | 0.45 | 0.83 | 10,272 |
| Area | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Energy | — | 3,638 | 3,638 | 0.26 | 0.03 | — | 3,655 |
| Water | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Waste | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Refrig. | — | — | — | — | — | 17.0 | 17.0 |
| Vegetation | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Total | 194 | 13,915 | 14,108 | 20.3 | 0.56 | 17.9 | 14,798 |
| Average Daily | — | — | — | — | — | — | — |
| Mobile | — | 9,132 | 9,132 | 0.51 | 0.41 | 12.3 | 9,280 |
| Area | 0.00 | 48.0 | 48.0 | < 0.005 | < 0.005 | — | 48.2 |
| Energy | — | 3,638 | 3,638 | 0.26 | 0.03 | — | 3,655 |
| Water | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Waste | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Refrig. | — | — | — | — | — | 17.0 | 17.0 |
| Vegetation | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Total | 194 | 12,972 | 13,165 | 20.2 | 0.52 | 29.4 | 13,855 |
| Annual | — | — | — | — | — | — | — |
| Mobile | — | 1,512 | 1,512 | 0.09 | 0.07 | 2.04 | 1,536 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Area | 0.00 | 7.95 | 7.95 | < 0.005 | < 0.005 | — | 7.98 |
| Energy | — | 602 | 602 | 0.04 | 0.01 | — | 605 |
| Water | 4.78 | 33.2 | 37.9 | 0.49 | 0.01 | — | 53.8 |
| Waste | 27.3 | 0.00 | 27.3 | 2.73 | 0.00 | — | 95.4 |
| Refrig. | — | — | — | — | — | 2.82 | 2.82 |
| Vegetation | — | -7.75 | -7.75 | — | — | — | -7.75 |
| Total | 32.1 | 2,148 | 2,180 | 3.35 | 0.09 | 4.86 | 2,294 |

# 3. Construction Emissions Details

## 3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 203 | 203 | 0.01 | < 0.005 | — | 204 |
| Demolition | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 3.34 | 3.34 | < 0.005 | < 0.005 | — | 3.35 |
| Demolition | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 0.55 | 0.55 | < 0.005 | < 0.005 | — | 0.55 |
| Demolition | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 66.9 | 66.9 | < 0.005 | < 0.005 | 0.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 588 | 588 | 0.03 | 0.09 | 0.04 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 1.12 | 1.12 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 9.66 | 9.66 | < 0.005 | < 0.005 | 0.01 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 0.18 | 0.18 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 1.60 | 1.60 | < 0.005 | < 0.005 | < 0.005 | — |

## 3.2. Demolition (2024) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 203 | 203 | 0.01 | < 0.005 | — | 204 |
| Demolition | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 3.34 | 3.34 | < 0.005 | < 0.005 | — | 3.35 |
| Demolition | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 0.55 | 0.55 | < 0.005 | < 0.005 | — | 0.55 |
| Demolition | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 66.9 | 66.9 | < 0.005 | < 0.005 | 0.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 588 | 588 | 0.03 | 0.09 | 0.04 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 1.12 | 1.12 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 9.66 | 9.66 | < 0.005 | < 0.005 | 0.01 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 0.18 | 0.18 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 1.60 | 1.60 | < 0.005 | < 0.005 | < 0.005 | — |

## 3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 2,717 | 2,717 | 0.11 | 0.02 | — | 2,726 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 81.9 | 81.9 | < 0.005 | < 0.005 | — | 82.2 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 13.6 | 13.6 | < 0.005 | < 0.005 | — | 13.6 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 98.3 | 98.3 | < 0.005 | < 0.005 | 0.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 4,675 | 4,675 | 0.25 | 0.73 | 0.28 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 3.01 | 3.01 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 141 | 141 | 0.01 | 0.02 | 0.14 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 0.50 | 0.50 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 23.3 | 23.3 | < 0.005 | < 0.005 | 0.02 | — |

## 3.4. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 2,717 | 2,717 | 0.11 | 0.02 | — | 2,726 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 81.9 | 81.9 | < 0.005 | < 0.005 | — | 82.2 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 13.6 | 13.6 | < 0.005 | < 0.005 | — | 13.6 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 98.3 | 98.3 | < 0.005 | < 0.005 | 0.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 4,675 | 4,675 | 0.25 | 0.73 | 0.28 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 3.01 | 3.01 | < 0.005 | < 0.005 | < 0.005 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 141 | 141 | 0.01 | 0.02 | 0.14 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 0.50 | 0.50 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 23.3 | 23.3 | < 0.005 | < 0.005 | 0.02 | — |

## 3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 2,460 | 2,460 | 0.10 | 0.02 | — | 2,469 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 2,460 | 2,460 | 0.10 | 0.02 | — | 2,469 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 506 | 506 | 0.02 | < 0.005 | — | 507 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 83.7 | 83.7 | < 0.005 | < 0.005 | — | 84.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 277 | 277 | 0.01 | 0.01 | 1.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 4,618 | 4,618 | 0.25 | 0.72 | 10.7 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 262 | 262 | 0.01 | 0.01 | 0.03 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 4,620 | 4,620 | 0.25 | 0.72 | 0.28 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 54.7 | 54.7 | < 0.005 | < 0.005 | 0.09 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 949 | 949 | 0.05 | 0.15 | 0.95 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 9.05 | 9.05 | < 0.005 | < 0.005 | 0.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 157 | 157 | 0.01 | 0.02 | 0.16 | — |

## 3.6. Grading (2025) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 2,460 | 2,460 | 0.10 | 0.02 | — | 2,469 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 2,460 | 2,460 | 0.10 | 0.02 | — | 2,469 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 506 | 506 | 0.02 | < 0.005 | — | 507 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 83.7 | 83.7 | < 0.005 | < 0.005 | — | 84.0 |
| Dust From Material Movement | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 277 | 277 | 0.01 | 0.01 | 1.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 4,618 | 4,618 | 0.25 | 0.72 | 10.7 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 262 | 262 | 0.01 | 0.01 | 0.03 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 4,620 | 4,620 | 0.25 | 0.72 | 0.28 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 54.7 | 54.7 | < 0.005 | < 0.005 | 0.09 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 949 | 949 | 0.05 | 0.15 | 0.95 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 9.05 | 9.05 | < 0.005 | < 0.005 | 0.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 157 | 157 | 0.01 | 0.02 | 0.16 | — |

## 3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,324 | 7,324 | 0.30 | 0.06 | — | 7,349 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,324 | 7,324 | 0.30 | 0.06 | — | 7,349 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 3,067 | 3,067 | 0.12 | 0.02 | — | 3,078 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 508 | 508 | 0.02 | < 0.005 | — | 510 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,921 | 3,921 | 0.17 | 0.13 | 14.4 | — |
| Vendor | — | 1,705 | 1,705 | 0.07 | 0.24 | 4.67 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,717 | 3,717 | 0.17 | 0.14 | 0.37 | — |
| Vendor | — | 1,706 | 1,706 | 0.07 | 0.24 | 0.12 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 1,580 | 1,580 | 0.07 | 0.06 | 2.60 | — |
| Vendor | — | 714 | 714 | 0.03 | 0.10 | 0.85 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 262 | 262 | 0.01 | 0.01 | 0.43 | — |
| Vendor | — | 118 | 118 | < 0.005 | 0.02 | 0.14 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.8. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,324 | 7,324 | 0.30 | 0.06 | — | 7,349 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,324 | 7,324 | 0.30 | 0.06 | — | 7,349 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 3,067 | 3,067 | 0.12 | 0.02 | — | 3,078 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 508 | 508 | 0.02 | < 0.005 | — | 510 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,921 | 3,921 | 0.17 | 0.13 | 14.4 | — |
| Vendor | — | 1,705 | 1,705 | 0.07 | 0.24 | 4.67 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,717 | 3,717 | 0.17 | 0.14 | 0.37 | — |
| Vendor | — | 1,706 | 1,706 | 0.07 | 0.24 | 0.12 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 1,580 | 1,580 | 0.07 | 0.06 | 2.60 | — |
| Vendor | — | 714 | 714 | 0.03 | 0.10 | 0.85 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 262 | 262 | 0.01 | 0.01 | 0.43 | — |
| Vendor | — | 118 | 118 | < 0.005 | 0.02 | 0.14 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.9. Building Construction (2026) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,321 | 7,321 | 0.30 | 0.06 | — | 7,347 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,321 | 7,321 | 0.30 | 0.06 | — | 7,347 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 5,230 | 5,230 | 0.21 | 0.04 | — | 5,248 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 866 | 866 | 0.04 | 0.01 | — | 869 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,842 | 3,842 | 0.16 | 0.13 | 13.0 | — |
| Vendor | — | 1,676 | 1,676 | 0.07 | 0.24 | 4.53 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,643 | 3,643 | 0.17 | 0.13 | 0.34 | — |
| Vendor | — | 1,677 | 1,677 | 0.07 | 0.24 | 0.12 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 2,640 | 2,640 | 0.12 | 0.10 | 4.02 | — |
| Vendor | — | 1,197 | 1,197 | 0.05 | 0.17 | 1.40 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 437 | 437 | 0.02 | 0.02 | 0.67 | — |
| Vendor | — | 198 | 198 | 0.01 | 0.03 | 0.23 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.10. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,321 | 7,321 | 0.30 | 0.06 | — | 7,347 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,321 | 7,321 | 0.30 | 0.06 | — | 7,347 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 5,230 | 5,230 | 0.21 | 0.04 | — | 5,248 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 866 | 866 | 0.04 | 0.01 | — | 869 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,842 | 3,842 | 0.16 | 0.13 | 13.0 | — |
| Vendor | — | 1,676 | 1,676 | 0.07 | 0.24 | 4.53 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,643 | 3,643 | 0.17 | 0.13 | 0.34 | — |
| Vendor | — | 1,677 | 1,677 | 0.07 | 0.24 | 0.12 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 2,640 | 2,640 | 0.12 | 0.10 | 4.02 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vendor | — | 1,197 | 1,197 | 0.05 | 0.17 | 1.40 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 437 | 437 | 0.02 | 0.02 | 0.67 | — |
| Vendor | — | 198 | 198 | 0.01 | 0.03 | 0.23 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.11. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,321 | 7,321 | 0.30 | 0.06 | — | 7,346 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,321 | 7,321 | 0.30 | 0.06 | — | 7,346 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 2,163 | 2,163 | 0.09 | 0.02 | — | 2,171 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 358 | 358 | 0.01 | < 0.005 | — | 359 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,769 | 3,769 | 0.16 | 0.13 | 11.7 | — |
| Vendor | — | 1,643 | 1,643 | 0.07 | 0.23 | 4.29 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,573 | 3,573 | 0.05 | 0.13 | 0.30 | — |
| Vendor | — | 1,644 | 1,644 | 0.07 | 0.23 | 0.11 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 1,071 | 1,071 | 0.01 | 0.04 | 1.50 | — |
| Vendor | — | 486 | 486 | 0.02 | 0.07 | 0.55 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 177 | 177 | < 0.005 | 0.01 | 0.25 | — |
| Vendor | — | 80.4 | 80.4 | < 0.005 | 0.01 | 0.09 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.12. Building Construction (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,321 | 7,321 | 0.30 | 0.06 | — | 7,346 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 7,321 | 7,321 | 0.30 | 0.06 | — | 7,346 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 2,163 | 2,163 | 0.09 | 0.02 | — | 2,171 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 358 | 358 | 0.01 | < 0.005 | — | 359 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,769 | 3,769 | 0.16 | 0.13 | 11.7 | — |
| Vendor | — | 1,643 | 1,643 | 0.07 | 0.23 | 4.29 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Worker | — | 3,573 | 3,573 | 0.05 | 0.13 | 0.30 | — |
| Vendor | — | 1,644 | 1,644 | 0.07 | 0.23 | 0.11 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 1,071 | 1,071 | 0.01 | 0.04 | 1.50 | — |
| Vendor | — | 486 | 486 | 0.02 | 0.07 | 0.55 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 177 | 177 | < 0.005 | 0.01 | 0.25 | — |
| Vendor | — | 80.4 | 80.4 | < 0.005 | 0.01 | 0.09 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 3,354 | 3,354 | 0.14 | 0.03 | — | 3,366 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Architectural Coatings | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 597 | 597 | 0.02 | < 0.005 | — | 599 |
| Architectural Coatings | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 98.9 | 98.9 | < 0.005 | < 0.005 | — | 99.2 |
| Architectural Coatings | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 754 | 754 | 0.03 | 0.03 | 2.35 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 129 | 129 | < 0.005 | < 0.005 | 0.18 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 21.4 | 21.4 | < 0.005 | < 0.005 | 0.03 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.14. Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 3,354 | 3,354 | 0.14 | 0.03 | — | 3,366 |
| Architectural Coatings | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 597 | 597 | 0.02 | < 0.005 | — | 599 |
| Architectural Coatings | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 98.9 | 98.9 | < 0.005 | < 0.005 | — | 99.2 |
| Architectural Coatings | — | — | — | — | — | — | — |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 754 | 754 | 0.03 | 0.03 | 2.35 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 129 | 129 | < 0.005 | < 0.005 | 0.18 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 21.4 | 21.4 | < 0.005 | < 0.005 | 0.03 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.15. Trenching (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 391 | 391 | 0.02 | < 0.005 | — | 393 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 23.6 | 23.6 | < 0.005 | < 0.005 | — | 23.7 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 3.91 | 3.91 | < 0.005 | < 0.005 | — | 3.92 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 104 | 104 | < 0.005 | < 0.005 | 0.38 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 6.01 | 6.01 | < 0.005 | < 0.005 | 0.01 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — |
| Worker | — | 1.00 | 1.00 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

## 3.16. Trenching (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 391 | 391 | 0.02 | < 0.005 | — | 393 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 23.6 | 23.6 | < 0.005 | < 0.005 | — | 23.7 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Off-Road Equipment | — | 3.91 | 3.91 | < 0.005 | < 0.005 | — | 3.92 |
| Onsite truck | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Offsite | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Worker | — | 104 | 104 | < 0.005 | < 0.005 | 0.38 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — |
| Worker | — | 6.01 | 6.01 | < 0.005 | < 0.005 | 0.01 | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Annual | — | — | — | — | — | — | — |
| Worker | — | 1.00 | 1.00 | < 0.005 | < 0.005 | < 0.005 | — |
| Vendor | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |
| Hauling | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — |

# 4. Operations Emissions Details

## 4.1. Mobile Emissions by Land Use

### 4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 7,934 | 7,934 | 0.40 | 0.32 | 24.2 | 8,065 |
| High Turnover (Sit Down Restaurant) | — | 2,625 | 2,625 | 0.13 | 0.10 | 8.02 | 2,667 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | — | 10,559 | 10,559 | 0.53 | 0.43 | 32.2 | 10,732 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 7,607 | 7,607 | 0.42 | 0.34 | 0.63 | 7,720 |
| High Turnover (Sit Down Restaurant) | — | 2,516 | 2,516 | 0.13 | 0.11 | 0.21 | 2,552 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | — | 10,123 | 10,123 | 0.55 | 0.45 | 0.83 | 10,272 |
| Annual | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | — | 1,257 | 1,257 | 0.07 | 0.06 | 1.70 | 1,278 |
| High Turnover (Sit Down Restaurant) | — | 254 | 254 | 0.02 | 0.01 | 0.34 | 259 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | — | 1,512 | 1,512 | 0.09 | 0.07 | 2.04 | 1,536 |

### 4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 7,934 | 7,934 | 0.40 | 0.32 | 24.2 | 8,065 |
| High Turnover (Sit Down Restaurant) | — | 2,625 | 2,625 | 0.13 | 0.10 | 8.02 | 2,667 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | — | 10,559 | 10,559 | 0.53 | 0.43 | 32.2 | 10,732 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 7,607 | 7,607 | 0.42 | 0.34 | 0.63 | 7,720 |
| High Turnover (Sit Down Restaurant) | — | 2,516 | 2,516 | 0.13 | 0.11 | 0.21 | 2,552 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | — | 10,123 | 10,123 | 0.55 | 0.45 | 0.83 | 10,272 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 1,257 | 1,257 | 0.07 | 0.06 | 1.70 | 1,278 |
| High Turnover (Sit Down Restaurant) | — | 254 | 254 | 0.02 | 0.01 | 0.34 | 259 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Total | — | 1,512 | 1,512 | 0.09 | 0.07 | 2.04 | 1,536 |

## 4.2. Energy

### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 2,031 | 2,031 | 0.14 | 0.02 | — | 2,041 |
| High Turnover (Sit Down Restaurant) | — | 583 | 583 | 0.04 | 0.01 | — | 586 |
| Enclosed Parking with Elevator | — | 735 | 735 | 0.05 | 0.01 | — | 738 |
| Total | — | 3,348 | 3,348 | 0.24 | 0.03 | — | 3,364 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 2,031 | 2,031 | 0.14 | 0.02 | — | 2,041 |
| High Turnover (Sit Down Restaurant) | — | 583 | 583 | 0.04 | 0.01 | — | 586 |
| Enclosed Parking with Elevator | — | 735 | 735 | 0.05 | 0.01 | — | 738 |
| Total | — | 3,348 | 3,348 | 0.24 | 0.03 | — | 3,364 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 336 | 336 | 0.02 | < 0.005 | — | 338 |
| High Turnover (Sit Down Restaurant) | — | 96.5 | 96.5 | 0.01 | < 0.005 | — | 97.0 |
| Enclosed Parking with Elevator | — | 122 | 122 | 0.01 | < 0.005 | — | 122 |
| Total | — | 554 | 554 | 0.04 | 0.01 | — | 557 |

### 4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 2,034 | 2,034 | 0.14 | 0.02 | — | 2,043 |
| High Turnover (Sit Down Restaurant) | — | 583 | 583 | 0.04 | 0.01 | — | 586 |
| Enclosed Parking with Elevator | — | 735 | 735 | 0.05 | 0.01 | — | 738 |
| Total | — | 3,351 | 3,351 | 0.24 | 0.03 | — | 3,367 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 2,034 | 2,034 | 0.14 | 0.02 | — | 2,043 |
| High Turnover (Sit Down Restaurant) | — | 583 | 583 | 0.04 | 0.01 | — | 586 |
| Enclosed Parking with Elevator | — | 735 | 735 | 0.05 | 0.01 | — | 738 |
| Total | — | 3,351 | 3,351 | 0.24 | 0.03 | — | 3,367 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 337 | 337 | 0.02 | < 0.005 | — | 338 |
| High Turnover (Sit Down Restaurant) | — | 96.5 | 96.5 | 0.01 | < 0.005 | — | 97.0 |
| Enclosed Parking with Elevator | — | 122 | 122 | 0.01 | < 0.005 | — | 122 |
| Total | — | 555 | 555 | 0.04 | 0.01 | — | 557 |

### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | — | 1,040 | 1,040 | 0.09 | < 0.005 | — | 1,043 |
| High Turnover (Sit Down Restaurant) | — | 287 | 287 | 0.03 | < 0.005 | — | 288 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | 1,327 | 1,327 | 0.12 | < 0.005 | — | 1,331 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 1,040 | 1,040 | 0.09 | < 0.005 | — | 1,043 |
| High Turnover (Sit Down Restaurant) | — | 287 | 287 | 0.03 | < 0.005 | — | 288 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | 1,327 | 1,327 | 0.12 | < 0.005 | — | 1,331 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 172 | 172 | 0.02 | < 0.005 | — | 173 |
| High Turnover (Sit Down Restaurant) | — | 47.6 | 47.6 | < 0.005 | < 0.005 | — | 47.7 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | 220 | 220 | 0.02 | < 0.005 | — | 220 |

### 4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| High Turnover (Sit Down Restaurant) | — | 287 | 287 | 0.03 | < 0.005 | — | 288 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Total | — | 287 | 287 | 0.03 | < 0.005 | — | 288 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| High Turnover (Sit Down Restaurant) | — | 287 | 287 | 0.03 | < 0.005 | — | 288 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | 287 | 287 | 0.03 | < 0.005 | — | 288 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| High Turnover (Sit Down Restaurant) | — | 47.6 | 47.6 | < 0.005 | < 0.005 | — | 47.7 |
| Enclosed Parking with Elevator | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | 47.6 | 47.6 | < 0.005 | < 0.005 | — | 47.7 |

## 4.3. Area Emissions by Source

### 4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | — | — | — | — | — | — |
| Architectural Coatings | — | — | — | — | — | — | — |
| Landscape Equipment | — | 70.1 | 70.1 | < 0.005 | < 0.005 | — | 70.4 |
| Total | 0.00 | 70.1 | 70.1 | < 0.005 | < 0.005 | — | 70.4 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Consumer Products | — | — | — | — | — | — | — |
| Architectural Coatings | — | — | — | — | — | — | — |
| Total | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Annual | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | — | — | — | — | — | — |
| Architectural Coatings | — | — | — | — | — | — | — |
| Landscape Equipment | — | 7.95 | 7.95 | < 0.005 | < 0.005 | — | 7.98 |
| Total | 0.00 | 7.95 | 7.95 | < 0.005 | < 0.005 | — | 7.98 |

### 4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Source | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | — | — | — | — | — | — |
| Architectural Coatings | — | — | — | — | — | — | — |
| Landscape Equipment | — | 70.1 | 70.1 | < 0.005 | < 0.005 | — | 70.4 |
| Total | 0.00 | 70.1 | 70.1 | < 0.005 | < 0.005 | — | 70.4 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | — | — | — | — | — | — |
| Architectural Coatings | — | — | — | — | — | — | — |
| Total | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Annual | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Architectural Coatings | — | — | — | — | — | — | — |
| Landscape Equipment | — | 7.95 | 7.95 | < 0.005 | < 0.005 | — | 7.98 |
| Total | 0.00 | 7.95 | 7.95 | < 0.005 | < 0.005 | — | 7.98 |

## 4.4. Water Emissions by Land Use

### 4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | 23.4 | 163 | 187 | 2.41 | 0.06 | — | 264 |
| High Turnover (Sit Down Restaurant) | 5.50 | 37.0 | 42.5 | 0.57 | 0.01 | — | 60.8 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | 23.4 | 163 | 187 | 2.41 | 0.06 | — | 264 |
| High Turnover (Sit Down Restaurant) | 5.50 | 37.0 | 42.5 | 0.57 | 0.01 | — | 60.8 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | 3.87 | 27.0 | 30.9 | 0.40 | 0.01 | — | 43.8 |
| High Turnover (Sit Down Restaurant) | 0.91 | 6.12 | 7.03 | 0.09 | < 0.005 | — | 10.1 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 4.78 | 33.2 | 37.9 | 0.49 | 0.01 | — | 53.8 |

### 4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | 23.4 | 163 | 187 | 2.41 | 0.06 | — | 264 |
| High Turnover (Sit Down Restaurant) | 5.50 | 37.0 | 42.5 | 0.57 | 0.01 | — | 60.8 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | 23.4 | 163 | 187 | 2.41 | 0.06 | — | 264 |
| High Turnover (Sit Down Restaurant) | 5.50 | 37.0 | 42.5 | 0.57 | 0.01 | — | 60.8 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 28.9 | 200 | 229 | 2.97 | 0.07 | — | 325 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | 3.87 | 27.0 | 30.9 | 0.40 | 0.01 | — | 43.8 |
| High Turnover (Sit Down Restaurant) | 0.91 | 6.12 | 7.03 | 0.09 | < 0.005 | — | 10.1 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 4.78 | 33.2 | 37.9 | 0.49 | 0.01 | — | 53.8 |

## 4.5. Waste Emissions by Land Use

### 4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | 104 | 0.00 | 104 | 10.4 | 0.00 | — | 364 |
| High Turnover (Sit Down Restaurant) | 60.7 | 0.00 | 60.7 | 6.07 | 0.00 | — | 212 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | 104 | 0.00 | 104 | 10.4 | 0.00 | — | 364 |
| High Turnover (Sit Down Restaurant) | 60.7 | 0.00 | 60.7 | 6.07 | 0.00 | — | 212 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | 17.2 | 0.00 | 17.2 | 1.72 | 0.00 | — | 60.3 |
| High Turnover (Sit Down Restaurant) | 10.0 | 0.00 | 10.0 | 1.00 | 0.00 | — | 35.2 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 27.3 | 0.00 | 27.3 | 2.73 | 0.00 | — | 95.4 |

### 4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | 104 | 0.00 | 104 | 10.4 | 0.00 | — | 364 |
| High Turnover (Sit Down Restaurant) | 60.7 | 0.00 | 60.7 | 6.07 | 0.00 | — | 212 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | 104 | 0.00 | 104 | 10.4 | 0.00 | — | 364 |
| High Turnover (Sit Down Restaurant) | 60.7 | 0.00 | 60.7 | 6.07 | 0.00 | — | 212 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 165 | 0.00 | 165 | 16.5 | 0.00 | — | 576 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | 17.2 | 0.00 | 17.2 | 1.72 | 0.00 | — | 60.3 |
| High Turnover (Sit Down Restaurant) | 10.0 | 0.00 | 10.0 | 1.00 | 0.00 | — | 35.2 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | 27.3 | 0.00 | 27.3 | 2.73 | 0.00 | — | 95.4 |

## 4.6. Refrigerant Emissions by Land Use

### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | 2.23 | 2.23 |
| High Turnover (Sit Down Restaurant) | — | — | — | — | — | 14.8 | 14.8 |
| Total | — | — | — | — | — | 17.0 | 17.0 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | 2.23 | 2.23 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| High Turnover (Sit Down Restaurant) | — | — | — | — | — | 14.8 | 14.8 |
| Total | — | — | — | — | — | 17.0 | 17.0 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | 0.37 | 0.37 |
| High Turnover (Sit Down Restaurant) | — | — | — | — | — | 2.45 | 2.45 |
| Total | — | — | — | — | — | 2.82 | 2.82 |

### 4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | 2.23 | 2.23 |
| High Turnover (Sit Down Restaurant) | — | — | — | — | — | 14.8 | 14.8 |
| Total | — | — | — | — | — | 17.0 | 17.0 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | 2.23 | 2.23 |
| High Turnover (Sit Down Restaurant) | — | — | — | — | — | 14.8 | 14.8 |
| Total | — | — | — | — | — | 17.0 | 17.0 |
| Annual | — | — | — | — | — | — | — |
| Apartments Mid Rise | — | — | — | — | — | 0.37 | 0.37 |
| High Turnover (Sit Down Restaurant) | — | — | — | — | — | 2.45 | 2.45 |
| Total | — | — | — | — | — | 2.82 | 2.82 |

## 4.7. Offroad Emissions By Equipment Type

### 4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

### 4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

## 4.8. Stationary Emissions By Equipment Type

### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

### 4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

## 4.9. User Defined Emissions By Equipment Type

### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

### 4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Equipment Type | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 0.42 | 0.42 | — | — | — | — |
| Orange Wattle | — | -1.38 | -1.38 | — | — | — | — |
| Marina Strawberry Tree | — | -2.19 | -2.19 | — | — | — | — |
| Oklahoma Texas Redbud | — | -1.66 | -1.66 | — | — | — | — |
| Australian Willow | — | -0.54 | -0.54 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -1.73 | -1.73 | — | — | — | — |
| Olive | — | -0.41 | -0.41 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -2.07 | -2.07 | — | — | — | — |
| Coast Live Oak | — | -1.76 | -1.76 | — | — | — | — |
| undefined | — | — | — | — | — | — | -11.3 |
| Subtotal | — | -11.3 | -11.3 | — | — | — | -11.3 |
| Sequestered | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 1.05 | 1.05 | — | — | — | — |
| Orange Wattle | — | -0.79 | -0.79 | — | — | — | — |
| Marina Strawberry Tree | — | -2.98 | -2.98 | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Oklahoma Texas Redbud | — | -3.38 | -3.38 | — | — | — | — |
| Australian Willow | — | -5.18 | -5.18 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -5.23 | -5.23 | — | — | — | — |
| Olive | — | -2.81 | -2.81 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -12.5 | -12.5 | — | — | — | — |
| Coast Live Oak | — | -3.67 | -3.67 | — | — | — | — |
| undefined | — | — | — | — | — | — | -35.5 |
| Subtotal | — | -35.5 | -35.5 | — | — | — | -35.5 |
| Removed | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | — | — | — | — | — | — |
| Orange Wattle | — | — | — | — | — | — | — |
| Marina Strawberry Tree | — | — | — | — | — | — | — |
| Oklahoma Texas Redbud | — | — | — | — | — | — | — |
| Australian Willow | — | — | — | — | — | — | — |
| Saratoga Hybrid Laurel | — | — | — | — | — | — | — |
| Olive | — | — | — | — | — | — | — |
| Fruitless Olive | — | — | — | — | — | — | — |
| Catalina Cherry | — | — | — | — | — | — | — |
| Coast Live Oak | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — |
| Total | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 0.42 | 0.42 | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Orange Wattle | — | -1.38 | -1.38 | — | — | — | — |
| Marina Strawberry Tree | — | -2.19 | -2.19 | — | — | — | — |
| Oklahoma Texas Redbud | — | -1.66 | -1.66 | — | — | — | — |
| Australian Willow | — | -0.54 | -0.54 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -1.73 | -1.73 | — | — | — | — |
| Olive | — | -0.41 | -0.41 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -2.07 | -2.07 | — | — | — | — |
| Coast Live Oak | — | -1.76 | -1.76 | — | — | — | — |
| undefined | — | — | — | — | — | — | -11.3 |
| Subtotal | — | -11.3 | -11.3 | — | — | — | -11.3 |
| Sequestered | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 1.05 | 1.05 | — | — | — | — |
| Orange Wattle | — | -0.79 | -0.79 | — | — | — | — |
| Marina Strawberry Tree | — | -2.98 | -2.98 | — | — | — | — |
| Oklahoma Texas Redbud | — | -3.38 | -3.38 | — | — | — | — |
| Australian Willow | — | -5.18 | -5.18 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -5.23 | -5.23 | — | — | — | — |
| Olive | — | -2.81 | -2.81 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -12.5 | -12.5 | — | — | — | — |
| Coast Live Oak | — | -3.67 | -3.67 | — | — | — | — |
| undefined | — | — | — | — | — | — | -35.5 |
| Subtotal | — | -35.5 | -35.5 | — | — | — | -35.5 |
| Removed | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Orange Wattle | — | — | — | — | — | — | — |
| Marina Strawberry Tree | — | — | — | — | — | — | — |
| Oklahoma Texas Redbud | — | — | — | — | — | — | — |
| Australian Willow | — | — | — | — | — | — | — |
| Saratoga Hybrid Laurel | — | — | — | — | — | — | — |
| Olive | — | — | — | — | — | — | — |
| Fruitless Olive | — | — | — | — | — | — | — |
| Catalina Cherry | — | — | — | — | — | — | — |
| Coast Live Oak | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — |
| Total | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Annual | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 0.07 | 0.07 | — | — | — | — |
| Orange Wattle | — | -0.23 | -0.23 | — | — | — | — |
| Marina Strawberry Tree | — | -0.36 | -0.36 | — | — | — | — |
| Oklahoma Texas Redbud | — | -0.27 | -0.27 | — | — | — | — |
| Australian Willow | — | -0.09 | -0.09 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -0.29 | -0.29 | — | — | — | — |
| Olive | — | -0.07 | -0.07 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -0.34 | -0.34 | — | — | — | — |
| Coast Live Oak | — | -0.29 | -0.29 | — | — | — | — |
| undefined | — | — | — | — | — | — | -1.87 |
| Subtotal | — | -1.87 | -1.87 | — | — | — | -1.87 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sequestered | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 0.17 | 0.17 | — | — | — | — |
| Orange Wattle | — | -0.13 | -0.13 | — | — | — | — |
| Marina Strawberry Tree | — | -0.49 | -0.49 | — | — | — | — |
| Oklahoma Texas Redbud | — | -0.56 | -0.56 | — | — | — | — |
| Australian Willow | — | -0.86 | -0.86 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -0.87 | -0.87 | — | — | — | — |
| Olive | — | -0.46 | -0.46 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -2.07 | -2.07 | — | — | — | — |
| Coast Live Oak | — | -0.61 | -0.61 | — | — | — | — |
| undefined | — | — | — | — | — | — | -5.88 |
| Subtotal | — | -5.88 | -5.88 | — | — | — | -5.88 |
| Removed | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | — | — | — | — | — | — |
| Orange Wattle | — | — | — | — | — | — | — |
| Marina Strawberry Tree | — | — | — | — | — | — | — |
| Oklahoma Texas Redbud | — | — | — | — | — | — | — |
| Australian Willow | — | — | — | — | — | — | — |
| Saratoga Hybrid Laurel | — | — | — | — | — | — | — |
| Olive | — | — | — | — | — | — | — |
| Fruitless Olive | — | — | — | — | — | — | — |
| Catalina Cherry | — | — | — | — | — | — | — |
| Coast Live Oak | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Total | — | -7.75 | -7.75 | — | — | — | -7.75 |

### 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

### 4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — |

### 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mexican Fan Palsm | — | 0.42 | 0.42 | — | — | — | — |
| Orange Wattle | — | -1.38 | -1.38 | — | — | — | — |
| Marina Strawberry Tree | — | -2.19 | -2.19 | — | — | — | — |
| Oklahoma Texas Redbud | — | -1.66 | -1.66 | — | — | — | — |
| Australian Willow | — | -0.54 | -0.54 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -1.73 | -1.73 | — | — | — | — |
| Olive | — | -0.41 | -0.41 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -2.07 | -2.07 | — | — | — | — |
| Coast Live Oak | — | -1.76 | -1.76 | — | — | — | — |
| undefined | — | — | — | — | — | — | -11.3 |
| Subtotal | — | -11.3 | -11.3 | — | — | — | -11.3 |
| Sequestered | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 1.05 | 1.05 | — | — | — | — |
| Orange Wattle | — | -0.79 | -0.79 | — | — | — | — |
| Marina Strawberry Tree | — | -2.98 | -2.98 | — | — | — | — |
| Oklahoma Texas Redbud | — | -3.38 | -3.38 | — | — | — | — |
| Australian Willow | — | -5.18 | -5.18 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -5.23 | -5.23 | — | — | — | — |
| Olive | — | -2.81 | -2.81 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -12.5 | -12.5 | — | — | — | — |
| Coast Live Oak | — | -3.67 | -3.67 | — | — | — | — |
| undefined | — | — | — | — | — | — | -35.5 |
| Subtotal | — | -35.5 | -35.5 | — | — | — | -35.5 |
| Removed | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mexican Fan Palsm | — | — | — | — | — | — | — |
| Orange Wattle | — | — | — | — | — | — | — |
| Marina Strawberry Tree | — | — | — | — | — | — | — |
| Oklahoma Texas Redbud | — | — | — | — | — | — | — |
| Australian Willow | — | — | — | — | — | — | — |
| Saratoga Hybrid Laurel | — | — | — | — | — | — | — |
| Olive | — | — | — | — | — | — | — |
| Fruitless Olive | — | — | — | — | — | — | — |
| Catalina Cherry | — | — | — | — | — | — | — |
| Coast Live Oak | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — |
| Total | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Daily, Winter (Max) | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 0.42 | 0.42 | — | — | — | — |
| Orange Wattle | — | -1.38 | -1.38 | — | — | — | — |
| Marina Strawberry Tree | — | -2.19 | -2.19 | — | — | — | — |
| Oklahoma Texas Redbud | — | -1.66 | -1.66 | — | — | — | — |
| Australian Willow | — | -0.54 | -0.54 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -1.73 | -1.73 | — | — | — | — |
| Olive | — | -0.41 | -0.41 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -2.07 | -2.07 | — | — | — | — |
| Coast Live Oak | — | -1.76 | -1.76 | — | — | — | — |
| undefined | — | — | — | — | — | — | -11.3 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Subtotal | — | -11.3 | -11.3 | — | — | — | -11.3 |
| Sequestered | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 1.05 | 1.05 | — | — | — | — |
| Orange Wattle | — | -0.79 | -0.79 | — | — | — | — |
| Marina Strawberry Tree | — | -2.98 | -2.98 | — | — | — | — |
| Oklahoma Texas Redbud | — | -3.38 | -3.38 | — | — | — | — |
| Australian Willow | — | -5.18 | -5.18 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -5.23 | -5.23 | — | — | — | — |
| Olive | — | -2.81 | -2.81 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -12.5 | -12.5 | — | — | — | — |
| Coast Live Oak | — | -3.67 | -3.67 | — | — | — | — |
| undefined | — | — | — | — | — | — | -35.5 |
| Subtotal | — | -35.5 | -35.5 | — | — | — | -35.5 |
| Removed | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | — | — | — | — | — | — |
| Orange Wattle | — | — | — | — | — | — | — |
| Marina Strawberry Tree | — | — | — | — | — | — | — |
| Oklahoma Texas Redbud | — | — | — | — | — | — | — |
| Australian Willow | — | — | — | — | — | — | — |
| Saratoga Hybrid Laurel | — | — | — | — | — | — | — |
| Olive | — | — | — | — | — | — | — |
| Fruitless Olive | — | — | — | — | — | — | — |
| Catalina Cherry | — | — | — | — | — | — | — |
| Coast Live Oak | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| — | — | — | — | — | — | — | — |
| Total | — | -46.8 | -46.8 | — | — | — | -46.8 |
| Annual | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 0.07 | 0.07 | — | — | — | — |
| Orange Wattle | — | -0.23 | -0.23 | — | — | — | — |
| Marina Strawberry Tree | — | -0.36 | -0.36 | — | — | — | — |
| Oklahoma Texas Redbud | — | -0.27 | -0.27 | — | — | — | — |
| Australian Willow | — | -0.09 | -0.09 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -0.29 | -0.29 | — | — | — | — |
| Olive | — | -0.07 | -0.07 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -0.34 | -0.34 | — | — | — | — |
| Coast Live Oak | — | -0.29 | -0.29 | — | — | — | — |
| undefined | — | — | — | — | — | — | -1.87 |
| Subtotal | — | -1.87 | -1.87 | — | — | — | -1.87 |
| Sequestered | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | 0.17 | 0.17 | — | — | — | — |
| Orange Wattle | — | -0.13 | -0.13 | — | — | — | — |
| Marina Strawberry Tree | — | -0.49 | -0.49 | — | — | — | — |
| Oklahoma Texas Redbud | — | -0.56 | -0.56 | — | — | — | — |
| Australian Willow | — | -0.86 | -0.86 | — | — | — | — |
| Saratoga Hybrid Laurel | — | -0.87 | -0.87 | — | — | — | — |
| Olive | — | -0.46 | -0.46 | — | — | — | — |
| Fruitless Olive | — | 0.00 | 0.00 | — | — | — | — |
| Catalina Cherry | — | -2.07 | -2.07 | — | — | — | — |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Coast Live Oak | — | -0.61 | -0.61 | — | — | — | — |
| undefined | — | — | — | — | — | — | -5.88 |
| Subtotal | — | -5.88 | -5.88 | — | — | — | -5.88 |
| Removed | — | — | — | — | — | — | — |
| Mexican Fan Palsm | — | — | — | — | — | — | — |
| Orange Wattle | — | — | — | — | — | — | — |
| Marina Strawberry Tree | — | — | — | — | — | — | — |
| Oklahoma Texas Redbud | — | — | — | — | — | — | — |
| Australian Willow | — | — | — | — | — | — | — |
| Saratoga Hybrid Laurel | — | — | — | — | — | — | — |
| Olive | — | — | — | — | — | — | — |
| Fruitless Olive | — | — | — | — | — | — | — |
| Catalina Cherry | — | — | — | — | — | — | — |
| Coast Live Oak | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — |
| Total | — | -7.75 | -7.75 | — | — | — | -7.75 |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Demolition | Demolition | 12/24/2024 | 12/31/2024 | 5.00 | 6.00 | — |
| Site Preparation | Site Preparation | 1/1/2025 | 1/15/2025 | 5.00 | 11.0 | — |
| Grading | Grading | 1/16/2025 | 4/30/2025 | 5.00 | 75.0 | — |
| Building Construction | Building Construction | 6/1/2025 | 5/31/2027 | 5.00 | 521 | — |

| | | | | | | |
|---|---|---|---|---|---|---|
| Architectural Coating | Architectural Coating | 4/1/2027 | 6/30/2027 | 5.00 | 65.0 | — |
| Trenching | Trenching | 5/1/2025 | 5/31/2025 | 5.00 | 22.0 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Demolition | Dumpers/Tenders | Diesel | Average | 1.00 | 8.00 | 16.0 | 0.38 |
| Demolition | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| Site Preparation | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Site Preparation | Scrapers | Diesel | Average | 1.00 | 8.00 | 423 | 0.48 |
| Site Preparation | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 7.00 | 84.0 | 0.37 |
| Grading | Graders | Diesel | Average | 2.00 | 8.00 | 148 | 0.41 |
| Grading | Air Compressors | Diesel | Average | 1.00 | 8.00 | 37.0 | 0.48 |
| Grading | Bore/Drill Rigs | Diesel | Average | 1.00 | 8.00 | 83.0 | 0.50 |
| Grading | Cement and Mortar Mixers | Diesel | Average | 1.00 | 8.00 | 10.0 | 0.56 |
| Grading | Concrete/Industrial Saws | Diesel | Average | 1.00 | 8.00 | 33.0 | 0.73 |
| Grading | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| Grading | Other Construction Equipment | Diesel | Average | 1.00 | 8.00 | 82.0 | 0.42 |
| Building Construction | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Building Construction | Forklifts | Diesel | Average | 1.00 | 7.00 | 82.0 | 0.20 |
| Building Construction | Generator Sets | Diesel | Average | 2.00 | 8.00 | 14.0 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 6.00 | 84.0 | 0.37 |
| Building Construction | Welders | Diesel | Average | 3.00 | 8.00 | 46.0 | 0.45 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Building Construction | Air Compressors | Diesel | Average | 4.00 | 8.00 | 37.0 | 0.48 |
| Building Construction | Cement and Mortar Mixers | Diesel | Average | 1.00 | 8.00 | 10.0 | 0.56 |
| Building Construction | Concrete/Industrial Saws | Diesel | Average | 2.00 | 8.00 | 33.0 | 0.73 |
| Building Construction | Dumpers/Tenders | Diesel | Average | 3.00 | 8.00 | 16.0 | 0.38 |
| Building Construction | Other Construction Equipment | Diesel | Average | 5.00 | 8.00 | 82.0 | 0.42 |
| Building Construction | Other General Industrial Equipment | Diesel | Average | 6.00 | 8.00 | 35.0 | 0.34 |
| Building Construction | Other Material Handling Equipment | Diesel | Average | 3.00 | 8.00 | 93.0 | 0.40 |
| Building Construction | Pumps | Diesel | Average | 1.00 | 8.00 | 11.0 | 0.74 |
| Building Construction | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 71.0 | 0.37 |
| Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Architectural Coating | Pressure Washers | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.30 |
| Architectural Coating | Scrapers | Diesel | Average | 1.00 | 8.00 | 423 | 0.48 |
| Architectural Coating | Surfacing Equipment | Diesel | Average | 1.00 | 8.00 | 399 | 0.30 |
| Architectural Coating | Sweepers/Scrubbers | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.46 |
| Trenching | Trenchers | Diesel | Average | 1.00 | 8.00 | 40.0 | 0.50 |
| Trenching | Dumpers/Tenders | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.30 |
| Trenching | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |

### 5.2.2. Mitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Demolition | Dumpers/Tenders | Diesel | Average | 1.00 | 8.00 | 16.0 | 0.38 |
| Demolition | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| Site Preparation | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Site Preparation | Scrapers | Diesel | Average | 1.00 | 8.00 | 423 | 0.48 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Site Preparation | Tractors/Loaders/Backh | Diesel | Average | 1.00 | 7.00 | 84.0 | 0.37 |
| Grading | Graders | Diesel | Average | 2.00 | 8.00 | 148 | 0.41 |
| Grading | Air Compressors | Diesel | Average | 1.00 | 8.00 | 37.0 | 0.48 |
| Grading | Bore/Drill Rigs | Diesel | Average | 1.00 | 8.00 | 83.0 | 0.50 |
| Grading | Cement and Mortar Mixers | Diesel | Average | 1.00 | 8.00 | 10.0 | 0.56 |
| Grading | Concrete/Industrial Saws | Diesel | Average | 1.00 | 8.00 | 33.0 | 0.73 |
| Grading | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| Grading | Other Construction Equipment | Diesel | Average | 1.00 | 8.00 | 82.0 | 0.42 |
| Building Construction | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Building Construction | Forklifts | Diesel | Average | 1.00 | 7.00 | 82.0 | 0.20 |
| Building Construction | Generator Sets | Diesel | Average | 2.00 | 8.00 | 14.0 | 0.74 |
| Building Construction | Tractors/Loaders/Backh oes | Diesel | Average | 1.00 | 6.00 | 84.0 | 0.37 |
| Building Construction | Welders | Diesel | Average | 3.00 | 8.00 | 46.0 | 0.45 |
| Building Construction | Air Compressors | Diesel | Average | 4.00 | 8.00 | 37.0 | 0.48 |
| Building Construction | Cement and Mortar Mixers | Diesel | Average | 1.00 | 8.00 | 10.0 | 0.56 |
| Building Construction | Concrete/Industrial Saws | Diesel | Average | 2.00 | 8.00 | 33.0 | 0.73 |
| Building Construction | Dumpers/Tenders | Diesel | Average | 3.00 | 8.00 | 16.0 | 0.38 |
| Building Construction | Other Construction Equipment | Diesel | Average | 5.00 | 8.00 | 82.0 | 0.42 |
| Building Construction | Other General Industrial Equipment | Diesel | Average | 6.00 | 8.00 | 35.0 | 0.34 |
| Building Construction | Other Material Handling Equipment | Diesel | Average | 3.00 | 8.00 | 93.0 | 0.40 |
| Building Construction | Pumps | Diesel | Average | 1.00 | 8.00 | 11.0 | 0.74 |
| Building Construction | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 71.0 | 0.37 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 6.00 | 37.0 | 0.48 |
| Architectural Coating | Pressure Washers | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.30 |
| Architectural Coating | Scrapers | Diesel | Average | 1.00 | 8.00 | 423 | 0.48 |
| Architectural Coating | Surfacing Equipment | Diesel | Average | 1.00 | 8.00 | 399 | 0.30 |
| Architectural Coating | Sweepers/Scrubbers | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.46 |
| Trenching | Trenchers | Diesel | Average | 1.00 | 8.00 | 40.0 | 0.50 |
| Trenching | Dumpers/Tenders | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.30 |
| Trenching | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Demolition | — | — | — | — |
| Demolition | Worker | 5.00 | 18.5 | LDA,LDT1,LDT2 |
| Demolition | Vendor | — | 10.2 | HHDT,MHDT |
| Demolition | Hauling | 8.33 | 20.0 | HHDT |
| Demolition | Onsite truck | — | — | HHDT |
| Site Preparation | — | — | — | — |
| Site Preparation | Worker | 7.50 | 18.5 | LDA,LDT1,LDT2 |
| Site Preparation | Vendor | — | 10.2 | HHDT,MHDT |
| Site Preparation | Hauling | 67.5 | 20.0 | HHDT |
| Site Preparation | Onsite truck | — | — | HHDT |
| Grading | — | — | — | — |
| Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Grading | Vendor | — | 10.2 | HHDT,MHDT |
| Grading | Hauling | 66.7 | 20.0 | HHDT |

| | | | | |
|---|---|---|---|---|
| Grading | Onsite truck | — | — | HHDT |
| Building Construction | — | — | — | — |
| Building Construction | Worker | 284 | 18.5 | LDA,LDT1,LDT2 |
| Building Construction | Vendor | 53.7 | 10.2 | HHDT,MHDT |
| Building Construction | Hauling | 0.00 | 20.0 | HHDT |
| Building Construction | Onsite truck | — | — | HHDT |
| Architectural Coating | — | — | — | — |
| Architectural Coating | Worker | 56.7 | 18.5 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | — | 10.2 | HHDT,MHDT |
| Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Architectural Coating | Onsite truck | — | — | HHDT |
| Trenching | — | — | — | — |
| Trenching | Worker | 7.50 | 18.5 | LDA,LDT1,LDT2 |
| Trenching | Vendor | — | 10.2 | HHDT,MHDT |
| Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Trenching | Onsite truck | — | — | HHDT |

### 5.3.2. Mitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Demolition | — | — | — | — |
| Demolition | Worker | 5.00 | 18.5 | LDA,LDT1,LDT2 |
| Demolition | Vendor | — | 10.2 | HHDT,MHDT |
| Demolition | Hauling | 8.33 | 20.0 | HHDT |
| Demolition | Onsite truck | — | — | HHDT |
| Site Preparation | — | — | — | — |
| Site Preparation | Worker | 7.50 | 18.5 | LDA,LDT1,LDT2 |
| Site Preparation | Vendor | — | 10.2 | HHDT,MHDT |

| | | | | |
|---|---|---|---|---|
| Site Preparation | Hauling | 67.5 | 20.0 | HHDT |
| Site Preparation | Onsite truck | — | — | HHDT |
| Grading | — | — | — | — |
| Grading | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| Grading | Vendor | — | 10.2 | HHDT,MHDT |
| Grading | Hauling | 66.7 | 20.0 | HHDT |
| Grading | Onsite truck | — | — | HHDT |
| Building Construction | — | — | — | — |
| Building Construction | Worker | 284 | 18.5 | LDA,LDT1,LDT2 |
| Building Construction | Vendor | 53.7 | 10.2 | HHDT,MHDT |
| Building Construction | Hauling | 0.00 | 20.0 | HHDT |
| Building Construction | Onsite truck | — | — | HHDT |
| Architectural Coating | — | — | — | — |
| Architectural Coating | Worker | 56.7 | 18.5 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | — | 10.2 | HHDT,MHDT |
| Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Architectural Coating | Onsite truck | — | — | HHDT |
| Trenching | — | — | — | — |
| Trenching | Worker | 7.50 | 18.5 | LDA,LDT1,LDT2 |
| Trenching | Vendor | — | 10.2 | HHDT,MHDT |
| Trenching | Hauling | 0.00 | 20.0 | HHDT |
| Trenching | Onsite truck | — | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|
| Architectural Coating | 631,472 | 210,491 | 14,193 | 4,731 | — |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (Ton of Debris) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Demolition | 0.00 | 0.00 | 0.00 | 200 | — |
| Site Preparation | — | 5,936 | 16.5 | 0.00 | — |
| Grading | — | 40,000 | 75.0 | 0.00 | — |

### 5.6.2. Construction Earthmoving Control Strategies

| Control Strategies Applied | Frequency (per day) | PM10 Reduction | PM2.5 Reduction |
|---|---|---|---|
| Water Exposed Area | 2 | 61% | 61% |
| Water Demolished Area | 2 | 36% | 36% |

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Apartments Mid Rise | — | 0% |
| High Turnover (Sit Down Restaurant) | 0.00 | 0% |
| Enclosed Parking with Elevator | 0.00 | 100% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2024 | 0.00 | 690 | 0.05 | 0.01 |
| 2025 | 0.00 | 690 | 0.05 | 0.01 |
| 2026 | 0.00 | 690 | 0.05 | 0.01 |
| 2027 | 0.00 | 690 | 0.05 | 0.01 |

## 5.9. Operational Mobile Sources

### 5.9.1. Unmitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 1,439 | 1,373 | 1,373 | 518,342 | 10,206 | 9,742 | 9,742 | 3,676,943 |
| High Turnover (Sit Down Restaurant) | 416 | 378 | 378 | 148,013 | 1,458 | 3,390 | 3,390 | 733,761 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

### 5.9.2. Mitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | 1,439 | 1,373 | 1,373 | 518,342 | 10,206 | 9,742 | 9,742 | 3,676,943 |
| High Turnover (Sit Down Restaurant) | 416 | 378 | 378 | 148,013 | 1,458 | 3,390 | 3,390 | 733,761 |
| Enclosed Parking with Elevator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 5.10. Operational Area Sources

### 5.10.1. Hearths

### 5.10.1.1. Unmitigated

| Hearth Type | Unmitigated (number) |
|---|---|
| Apartments Mid Rise | — |
| Wood Fireplaces | 0 |
| Gas Fireplaces | 0 |
| Propane Fireplaces | 0 |
| Electric Fireplaces | 0 |
| No Fireplaces | 327 |
| Conventional Wood Stoves | 0 |
| Catalytic Wood Stoves | 0 |
| Non-Catalytic Wood Stoves | 0 |
| Pellet Wood Stoves | 0 |

### 5.10.1.2. Mitigated

| Hearth Type | Unmitigated (number) |
|---|---|
| Apartments Mid Rise | — |
| Wood Fireplaces | 0 |
| Gas Fireplaces | 0 |
| Propane Fireplaces | 0 |
| Electric Fireplaces | 0 |
| No Fireplaces | 327 |
| Conventional Wood Stoves | 0 |
| Catalytic Wood Stoves | 0 |
| Non-Catalytic Wood Stoves | 0 |
| Pellet Wood Stoves | 0 |

### 5.10.2. Architectural Coatings

| Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|
| 631471.95 | 210,491 | 14,193 | 4,731 | — |

### 5.10.3. Landscape Equipment

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00 |
| Summer Days | day/yr | 250 |

### 5.10.4. Landscape Equipment - Mitigated

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00 |
| Summer Days | day/yr | 250 |

## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use | Electricity (kWh/yr) | CO2 | CH4 | N2O | Natural Gas (kBTU/yr) |
|---|---|---|---|---|---|
| Apartments Mid Rise | 1,073,702 | 690 | 0.0489 | 0.0069 | 3,245,592 |
| High Turnover (Sit Down Restaurant) | 308,178 | 690 | 0.0489 | 0.0069 | 896,332 |
| Enclosed Parking with Elevator | 388,339 | 690 | 0.0489 | 0.0069 | 0.00 |

### 5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

| Land Use | Electricity (kWh/yr) | CO2 | CH4 | N2O | Natural Gas (kBTU/yr) |
|---|---|---|---|---|---|
| Apartments Mid Rise | 1,075,143 | 690 | 0.0489 | 0.0069 | 0.00 |
| High Turnover (Sit Down Restaurant) | 308,178 | 690 | 0.0489 | 0.0069 | 896,332 |
| Enclosed Parking with Elevator | 388,339 | 690 | 0.0489 | 0.0069 | 0.00 |

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Apartments Mid Rise | 12,188,533 | 635,851 |
| High Turnover (Sit Down Restaurant) | 2,872,036 | 0.00 |
| Enclosed Parking with Elevator | 0.00 | 0.00 |

### 5.12.2. Mitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Apartments Mid Rise | 12,188,533 | 635,851 |
| High Turnover (Sit Down Restaurant) | 2,872,036 | 0.00 |
| Enclosed Parking with Elevator | 0.00 | 0.00 |

## 5.13. Operational Waste Generation

### 5.13.1. Unmitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Apartments Mid Rise | 193 | — |
| High Turnover (Sit Down Restaurant) | 113 | — |
| Enclosed Parking with Elevator | 0.00 | — |

### 5.13.2. Mitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Apartments Mid Rise | 193 | — |
| High Turnover (Sit Down Restaurant) | 113 | — |
| Enclosed Parking with Elevator | 0.00 | — |

## 5.14. Operational Refrigeration and Air Conditioning Equipment

### 5.14.1. Unmitigated

| Land Use Type | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088 | < 0.005 | 2.50 | 2.50 | 10.0 |
| Apartments Mid Rise | Household refrigerators and/or freezers | R-134a | 1,430 | 0.12 | 0.60 | 0.00 | 1.00 |
| High Turnover (Sit Down Restaurant) | Household refrigerators and/or freezers | R-134a | 1,430 | 0.00 | 0.60 | 0.00 | 1.00 |
| High Turnover (Sit Down Restaurant) | Other commercial A/C and heat pumps | R-410A | 2,088 | 1.80 | 4.00 | 4.00 | 18.0 |
| High Turnover (Sit Down Restaurant) | Walk-in refrigerators and freezers | R-404A | 3,922 | < 0.005 | 7.50 | 7.50 | 20.0 |

### 5.14.2. Mitigated

| Land Use Type | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|
| Apartments Mid Rise | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088 | < 0.005 | 2.50 | 2.50 | 10.0 |
| Apartments Mid Rise | Household refrigerators and/or freezers | R-134a | 1,430 | 0.12 | 0.60 | 0.00 | 1.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| High Turnover (Sit Down Restaurant) | Household refrigerators and/or freezers | R-134a | 1,430 | 0.00 | 0.60 | 0.00 | 1.00 |
| High Turnover (Sit Down Restaurant) | Other commercial A/C and heat pumps | R-410A | 2,088 | 1.80 | 4.00 | 4.00 | 18.0 |
| High Turnover (Sit Down Restaurant) | Walk-in refrigerators and freezers | R-404A | 3,922 | < 0.005 | 7.50 | 7.50 | 20.0 |

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

| Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

### 5.15.2. Mitigated

| Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

| Equipment Type | Fuel Type | Number per Day | Hours per Day | Hours per Year | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

### 5.16.2. Process Boilers

| Equipment Type | Fuel Type | Number | Boiler Rating (MMBtu/hr) | Daily Heat Input (MMBtu/day) | Annual Heat Input (MMBtu/yr) |
|---|---|---|---|---|---|

## 5.17. User Defined

| Equipment Type | Fuel Type |
|---|---|

# 5.18. Vegetation

## 5.18.1. Land Use Change

### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1.2. Mitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

## 5.18.1. Biomass Cover Type

### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.1.2. Mitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

## 5.18.2. Sequestration

### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|
| Orange Wattle | 8.00 | 17,003 | 85.0 |
| Marina Strawberry Tree | 14.0 | 27,228 | 133 |
| Oklahoma Texas Redbud | 15.0 | 21,429 | 96.0 |
| Australian Willow | 14.0 | 7,085 | 30.0 |
| Saratoga Hybrid Laurel | 15.0 | 21,252 | 106 |

| | | | |
|---|---|---|---|
| Olive | 1.00 | 5,193 | 24.0 |
| Fruitless Olive | 2.00 | 0.00 | 0.00 |
| Catalina Cherry | 12.0 | 25,490 | 127 |
| Coast Live Oak | 1.00 | 21,967 | 107 |
| Mexican Fan Palsm | -9.00 | 5,779 | 22.0 |

#### 5.18.2.2. Mitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|
| Orange Wattle | 8.00 | 17,003 | 85.0 |
| Marina Strawberry Tree | 14.0 | 27,228 | 133 |
| Oklahoma Texas Redbud | 15.0 | 21,429 | 96.0 |
| Australian Willow | 14.0 | 7,085 | 30.0 |
| Saratoga Hybrid Laurel | 15.0 | 21,252 | 106 |
| Olive | 1.00 | 5,193 | 24.0 |
| Fruitless Olive | 2.00 | 0.00 | 0.00 |
| Catalina Cherry | 12.0 | 25,490 | 127 |
| Coast Live Oak | 1.00 | 21,967 | 107 |
| Mexican Fan Palsm | -9.00 | 5,779 | 22.0 |

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 9.58 | annual days of extreme heat |
| Extreme Precipitation | 6.70 | annual days with precipitation above 20 mm |

| | | |
|---|---|---|
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 0.00 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 1 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Temperature and Extreme Heat | 1 | 1 | 1 | 2 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 57.0 |
| AQ-PM | 90.4 |
| AQ-DPM | 90.9 |
| Drinking Water | 92.5 |
| Lead Risk Housing | 83.5 |
| Pesticides | 0.00 |
| Toxic Releases | 76.8 |

| | |
|---|---|
| Traffic | 92.2 |
| Effect Indicators | — |
| CleanUp Sites | 54.3 |
| Groundwater | 59.6 |
| Haz Waste Facilities/Generators | 54.6 |
| Impaired Water Bodies | 66.7 |
| Solid Waste | 24.8 |
| Sensitive Population | — |
| Asthma | 63.7 |
| Cardio-vascular | 60.6 |
| Low Birth Weights | 43.1 |
| Socioeconomic Factor Indicators | — |
| Education | 66.1 |
| Housing | 65.2 |
| Linguistic | 75.2 |
| Poverty | 33.5 |
| Unemployment | 60.6 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | 38.44475812 |
| Employed | 72.42397023 |
| Median HI | 50.67368151 |
| Education | — |
| Bachelor's or higher | 67.68895162 |

| | |
|---|---|
| High school enrollment | 100 |
| Preschool enrollment | 74.72090337 |
| Transportation | — |
| Auto Access | 22.93083537 |
| Active commuting | 86.88566662 |
| Social | — |
| 2-parent households | 32.15706403 |
| Voting | 56.82022328 |
| Neighborhood | — |
| Alcohol availability | 9.624021558 |
| Park access | 81.35506224 |
| Retail density | 29.39817785 |
| Supermarket access | 73.02707558 |
| Tree canopy | 89.50340049 |
| Housing | — |
| Homeownership | 15.33427435 |
| Housing habitability | 17.64403952 |
| Low-inc homeowner severe housing cost burden | 6.557166688 |
| Low-inc renter severe housing cost burden | 42.98729629 |
| Uncrowded housing | 50.73784165 |
| Health Outcomes | — |
| Insured adults | 21.67329655 |
| Arthritis | 86.1 |
| Asthma ER Admissions | 40.8 |
| High Blood Pressure | 84.3 |
| Cancer (excluding skin) | 71.8 |
| Asthma | 65.7 |

| | |
|---|---|
| Coronary Heart Disease | 74.7 |
| Chronic Obstructive Pulmonary Disease | 71.2 |
| Diagnosed Diabetes | 57.0 |
| Life Expectancy at Birth | 64.6 |
| Cognitively Disabled | 56.3 |
| Physically  Disabled | 77.4 |
| Heart Attack ER Admissions | 57.0 |
| Mental Health Not Good | 48.5 |
| Chronic Kidney Disease | 73.0 |
| Obesity | 54.6 |
| Pedestrian Injuries | 59.1 |
| Physical Health Not Good | 50.9 |
| Stroke | 75.8 |
| Health Risk Behaviors | — |
| Binge Drinking | 35.4 |
| Current Smoker | 47.6 |
| No Leisure Time for Physical Activity | 54.1 |
| Climate Change Exposures | — |
| Wildfire Risk | 53.8 |
| SLR Inundation Area | 0.0 |
| Children | 83.0 |
| Elderly | 57.3 |
| English Speaking | 18.0 |
| Foreign-born | 82.0 |
| Outdoor Workers | 80.6 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 51.0 |

| | |
|---|---|
| Traffic Density | 58.5 |
| Traffic Access | 87.4 |
| Other Indices | — |
| Hardship | 46.5 |
| Other Decision Support | — |
| 2016 Voting | 38.6 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 86.0 |
| Healthy Places Index Score for Project Location (b) | 53.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | Yes |
| Project Located in a Low-Income Community (Assembly Bill 1550) | No |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|

| | |
|---|---|
| Land Use | Project plans. Population derived from Fehr & Peers, Draft Transportation Assessment – Sunset + Everett Project; July 2023. Estimates from City of Los Angeles VMT Calculator, version 1.3. |
| Construction: Construction Phases | Developer information |
| Construction: Off-Road Equipment | Developer information |
| Construction: Trips and VMT | Assumes 10 CY haul truck capacity |
| Operations: Hearths | Project plans |
| Operations: Vehicle Data | — |

DouglasKim+Associates,LLC

# GREENHOUSE GAS EMISSIONS OVERVIEW

Sunset & Everett Project

GHG Emissions Impact Compared to "Project Without Reduction Features" Scenario

| Source | Project Without Reduction Features (2027) | As Proposed (2027) | Reduction from Project Without Reduction Features | Change from Project Without Reduction Features Scenario |
|---|---|---|---|---|
| Area | 8 | 8 | - | 0% |
| Energy | 1,043 | 605 | (438) | -42% |
| Mobile | 2,188 | 1,536 | (652) | -30% |
| Waste | 95 | 95 | - | 0% |
| Water | 54 | 54 | - | 0% |
| Refrigerants | 3 | 3 | - | 0% |
| Vegetation | (8) | (8) | - | 0% |
| Construction | 116 | 116 | - | 0% |
| Total Emissions | 3,499 | 2,409 | (1,090) | -31.2% |

| | |
|---|---|
| Mobile Source Emissions | Pavley emission standards (19.8% reduction) |
| | Low carbon fuel standard (7.2% reduction) |
| | Vehicle efficiency measures (2.8% reduction) |
| Energy Production Assumptions | Natural gas transmission and distribution efficiency measures (7.4% reduction) |
| | Natural gas extraction efficiency measures (1.6% reduction) |
| | Renewables (electricity) portfolio standard (33% reduction) |

DouglasKim+Associates,LLC

# TREE SEQUESTRATION CALCULATIONS

# Project Report - i-Tree Planting Calculator

Location: Los Angeles, California 90004
Electricity Emissions Factor: 252.40 kilograms CO2 equivalent/MWh
Fuel Emissions Factor: 52.00 kilograms CO2 equivalent/MMBtu
Lifetime: 40 years
Project Lifetime Tree Mortality: 70%

All amounts in the tables are for the full lifetime of the project.

| Location | | $CO_2$ (Carbon Dioxide) Benefits | | | |
|---|---|---|---|---|---|
| **Group Identifier** | **Tree Group Characteristics** | **$CO_2$ (Carbon Dioxide) Avoided (pounds)** | **$CO_2$ Avoided ($)** | **$CO_2$ Sequestered (pounds)** | **$CO_2$ Sequestered ($)** |
| 1 | • (9.0) Mexican fan palm(Washingtonia robusta) at 6.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 6,103.6 | $141.95 | 15,402.8 | $358.22 |
| **Total** | | **6,103.6** | **$141.95** | **15,402.8** | **$358.22** |

| Location | | Energy Benefits | | | |
|---|---|---|---|---|---|
| **Group Identifier** | **Tree Group Characteristics** | **Electricity Saved (kWh) (Kilowatt-Hours)** | **Electricity Saved ($)** | **Fuel Saved (MMBtu) (Millions of British Thermal Units)** | **Fuel Saved ($)** |
| 1 | • (9.0) Mexican fan palm(Washingtonia robusta) at 6.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 5,779.4 | $1,183.05 | 22.5 | $290.60 |
| **Total** | | **5,779.4** | **$1,183.05** | **22.5** | **$290.60** |

| Location | | Ecological Benefits | | | |
|---|---|---|---|---|---|
| **Group Identifier** | **Tree Group Characteristics** | **Tree Biomass (short ton)** | **Rainfall Interception (gallons)** | **Runoff Avoided (gallons)** | **Runoff Avoided ($)** |
| 1 | • (9.0) Mexican fan palm(Washingtonia robusta) at 6.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 2.5 | 167,605.3 | 50,971.7 | $455.48 |
| **Total** | | **2.5** | **167,605.3** | **50,971.7** | **$455.48** |

| Location | | Air Benefits | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Group Identifier | Tree Group Characteristics | $O_3$ (Ozone) Removed (pounds) | $NO_2$ (Nitrogen Dioxide) Avoided (pounds) | $NO_2$ (Nitrogen Dioxide) Removed (pounds) | $SO_2$ (Sulfur Dioxide) Avoided (pounds) | $SO_2$ (Sulfur Dioxide) Removed (pounds) | VOC (Volatile Organic Compound) Avoided (pounds) | $PM_{2.5}$ (Particulate matter smaller than 2.5 micrometers in diameter) Avoided (pounds) | $PM_{2.5}$ (Particulate matter smaller than 2.5 micrometers in diameter) Removed (pounds) | Avoided Value (Values for avoided pollutants) ($) | Removal Value (Values for removed pollutants) ($) |
| 1 | • (9.0) Mexican fan palm(Washingtonia robusta) at 6.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 153.01 | 0.44 | 34.78 | 1.54 | 2.79 | 3.02 | 1.90 | 0.86 | $10.54 | $845.05 |
| **Total** | | **153.01** | **0.44** | **34.78** | **1.54** | **2.79** | **3.02** | **1.90** | **0.86** | **$10.54** | **$845.05** |

*Sequestration and biomass are gross values that exclude losses to mortality.*

*Application v2.6.0, powered by engine v0.13.0 (APIv2) and database v12.0.49.*

www.fs.fed.us
www.davey.com
www.arborday.org
www.urban-forestry.com

www.isa-arbor.com
www.caseytrees.org
www.esf.edu
www.northeasternforests.org

*Use of this tool indicates acceptance of the End-User License Agreement (EULA), which can be found at: https://help.itreetools.org/eula/*

Version 2.6.0

# Project Report - i-Tree Planting Calculator

Location: Los Angeles, California 90004
Electricity Emissions Factor: 252.40 kilograms CO2 equivalent/MWh
Fuel Emissions Factor: 52.00 kilograms CO2 equivalent/MMBtu
Lifetime: 40 years
Project Lifetime Tree Mortality: 70%

All amounts in the tables are for the full lifetime of the project.

| Location | | $CO_2$ (Carbon Dioxide) Benefits | | | |
|---|---|---|---|---|---|
| **Group Identifier** | **Tree Group Characteristics** | **$CO_2$ (Carbon Dioxide) Avoided (pounds)** | **$CO_2$ Avoided ($)** | **$CO_2$ Sequestered (pounds)** | **$CO_2$ Sequestered ($)** |
| 1 | • (8.0) Orange wattle(Acacia saligna) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 20,156.3 | $468.77 | 11,583.1 | $269.39 |
| 2 | • (14.0) Strawberry tree(Arbutus unedo) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 31,934.3 | $742.69 | 43,441.5 | $1,010.31 |
| 3 | • (15.0) Redbud(Syzygium myrtifolium) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 24,181.0 | $562.38 | 49,400.0 | $1,148.89 |
| 4 | • (14.0) Wilga; australian willow(Geijera parviflora) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 7,822.2 | $181.92 | 75,664.5 | $1,759.72 |
| 5 | • (10.0) Macaronesian laurel(Laurus azorica) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 25,191.0 | $585.86 | 76,415.4 | $1,777.19 |
| 6 | • (3.0) Black olive(Bucida buceras) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 5,986.4 | $139.23 | 40,970.5 | $952.85 |
| 7 | • (12.0) Catalina cherry(Prunus lyonii) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 30,200.1 | $702.36 | 182,818.7 | $4,251.80 |
| 8 | • (12.0) Coastal live oak(Quercus agrifolia) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 25,687.1 | $597.40 | 53,562.5 | $1,245.70 |
| **Total** | | **171,158.4** | **$3,980.62** | **533,856.1** | **$12,415.85** |

| Location | | Energy Benefits | | | |
|---|---|---|---|---|---|
| Group Identifier | Tree Group Characteristics | Electricity Saved (kWh) (Kilowatt-Hours) | Electricity Saved ($) | Fuel Saved (MMBtu) (Millions of British Thermal Units) | Fuel Saved ($) |
| 1 | • (8.0) Orange wattle(Acacia saligna) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 17,003.8 | $3,480.67 | 85.3 | $1,103.17 |
| 2 | • (14.0) Strawberry tree(Arbutus unedo) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 27,228.7 | $5,573.71 | 133.5 | $1,727.86 |
| 3 | • (15.0) Redbud(Syzygium myrtifolium) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 21,429.2 | $4,386.55 | 96.8 | $1,252.44 |
| 4 | • (14.0) Wilga; australian willow(Geijera parviflora) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 7,085.4 | $1,450.38 | 30.5 | $394.58 |
| 5 | • (10.0) Macaronesian laurel(Laurus azorica) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 21,252.6 | $4,350.41 | 106.5 | $1,378.61 |
| 6 | • (3.0) Black olive(Bucida buceras) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 5,193.9 | $1,063.19 | 24.6 | $317.73 |
| 7 | • (12.0) Catalina cherry(Prunus lyonii) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 25,490.2 | $5,217.85 | 127.7 | $1,651.95 |
| 8 | • (12.0) Coastal live oak(Quercus agrifolia) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 21,967.7 | $4,496.78 | 107.1 | $1,385.33 |
| **Total** | | **146,651.4** | **$30,019.54** | **711.9** | **$9,211.66** |

| Location | | Ecological Benefits | | | |
|---|---|---|---|---|---|
| Group Identifier | Tree Group Characteristics | Tree Biomass (short ton) | Rainfall Interception (gallons) | Runoff Avoided (gallons) | Runoff Avoided ($) |
| 1 | • (8.0) Orange wattle(Acacia saligna) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 1.4 | 56,720.5 | 17,249.7 | $154.14 |
| 2 | • (14.0) Strawberry tree(Arbutus unedo) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 6.5 | 106,181.3 | 32,291.6 | $288.56 |
| 3 | • (15.0) Redbud(Syzygium myrtifolium) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 7.4 | 80,756.4 | 24,559.4 | $219.46 |
| 4 | • (14.0) Wilga; australian willow(Geijera parviflora) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 9.2 | 94,234.7 | 28,658.4 | $256.09 |
| 5 | • (10.0) Macaronesian laurel(Laurus azorica) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 10.2 | 80,209.9 | 24,393.2 | $217.98 |
| 6 | • (3.0) Black olive(Bucida buceras) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 6.3 | 23,148.8 | 7,040.0 | $62.91 |
| 7 | • (12.0) Catalina cherry(Prunus lyonii) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 28.8 | 167,800.0 | 51,030.9 | $456.01 |
| 8 | • (12.0) Coastal live oak(Quercus agrifolia) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 8.9 | 98,737.0 | 30,027.7 | $268.33 |
| **Total** | | **78.6** | **707,788.6** | **215,250.9** | **$1,923.48** |

| Location | | Air Benefits | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | VOC | $PM_{2.5}$ (Particulate matter smaller than | $PM_{2.5}$ (Particulate matter smaller than | Avoided Value (Values | Removal Value (Values |

| Group Identifier | Tree Group Characteristics | $O_3$ (Ozone) Removed (pounds) | $NO_2$ (Nitrogen Dioxide) Avoided (pounds) | $NO_2$ (Nitrogen Dioxide) Removed (pounds) | $SO_2$ (Sulfur Dioxide) Avoided (pounds) | $SO_2$ (Sulfur Dioxide) Removed (pounds) | (Volatile Organic Compound) Avoided (pounds) | 2.5 micrometers in diameter) Avoided (pounds) | 2.5 micrometers in diameter) Removed (pounds) | for avoided pollutants ) ($) | for removed pollutants ) ($) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | • (8.0) Orange wattle(Acacia saligna) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 81.56 | 1.45 | 20.90 | 5.10 | 1.42 | 8.98 | 5.61 | 1.10 | $31.77 | $564.91 |
| 2 | • (14.0) Strawberry tree(Arbutus unedo) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 117.81 | 2.30 | 28.19 | 8.08 | 2.10 | 14.36 | 8.98 | 0.97 | $50.76 | $704.43 |
| 3 | • (15.0) Redbud(Syzygium myrtifolium) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 104.97 | 1.74 | 26.36 | 6.12 | 1.84 | 11.26 | 7.05 | 1.28 | $39.62 | $702.71 |
| 4 | • (14.0) Wilga; australian | 108.30 | 0.56 | 26.15 | 1.98 | 1.93 | 3.71 | 2.33 | 0.95 | $13.04 | $658.23 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | willow(Geijera parviflora) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | | | | | | | | | | |
| 5 | • (10.0) Macaronesian laurel(Laurus azorica) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 102.09 | 1.81 | 25.34 | 6.38 | 1.80 | 11.22 | 7.01 | 1.09 | $39.71 | $656.01 |
| 6 | • (3.0) Black olive(Bucida buceras) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 32.44 | 0.43 | 8.28 | 1.52 | 0.57 | 2.73 | 1.71 | 0.43 | $9.65 | $223.87 |
| 7 | • (12.0) Catalina cherry(Prunus lyonii) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of | 194.33 | 2.17 | 47.06 | 7.64 | 3.45 | 13.46 | 8.41 | 1.75 | $47.63 | $1,189.08 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | | | | | | | | | | |
| 8 | • (12.0) Coastal live oak(Quercus agrifolia) at 2.0 inches DBH (Diameter at Breast Height).<br>• Planted 0-19 feet and north (0°) of buildings that were built post-1980 with heating and cooling.<br>• Trees are in excellent condition and planted in full sun. | 138.43 | 1.85 | 35.26 | 6.50 | 2.41 | 11.58 | 7.24 | 1.80 | $40.93 | $945.78 |
| **Total** | | **879.92** | **12.31** | **217.56** | **43.32** | **15.52** | **77.30** | **48.34** | **9.37** | **$273.10** | **$5,645.02** |

*Sequestration and biomass are gross values that exclude losses to mortality.*

*Application v2.6.0, powered by engine v0.13.0 (APIv2) and database v12.0.49.*

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Version 2.6.0