

# Appendix D

## Greenhouse Gas Emissions Assessment

**Greenhouse Gas Emissions Assessment  
for the proposed  
Melia 178<sup>th</sup> Street Townhomes Project  
in the City of Gardena, California**

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**APPENDIX**

Appendix A: Greenhouse Gas Emissions Data

**LIST OF ABBREVIATED TERMS**

AB	Assembly Bill
CARB	California Air Resource Board
CCR	California Code of Regulations
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CALGreen	California Green Building Standards
CPUC	California Public Utilities Commission
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
CPP	Clean Power Plan
CCSP	Climate Change Scoping Plan
cy	cubic yard
EECAP	Energy Efficiency Climate Action Plan
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
GHG	greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LCFS	Low Carbon Fuel Standard
CH <sub>4</sub>	Methane
MMTCO <sub>2</sub> e	million metric tons of carbon dioxide equivalent
MTCO <sub>2</sub> e	million tons of carbon dioxide equivalent
NHTSA	National Highway Traffic Safety Administration
NF <sub>3</sub>	nitrogen trifluoride
N <sub>2</sub> O	nitrous oxide
PFC	Perfluorocarbon
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Government
Sf	square foot
SF <sub>6</sub>	sulfur hexafluoride
TAC	toxic air contaminants

## 1 INTRODUCTION

This report documents the results of a Greenhouse Gas Emissions Assessment completed for the Melia 178<sup>th</sup> Street Townhomes Project. The purpose of this Greenhouse Gas Emissions Assessment is to evaluate the Project's potential construction and operational emissions and determine the Project's level of impact on the environment.

### 1.1 PROJECT LOCATION & SETTING

The Project site is in the County of Los Angeles (County), in the City of Gardena (City), approximately 12.5 miles south of downtown Los Angeles; see [Exhibit 1: Regional Vicinity Map](#). The 5.63-acre property is comprised of two parcels (APN 6106-013-040 and 6106-013-041) located at 1515 West 178th Street; see [Exhibit 2: Site Vicinity Map](#). Regional access to the Project site is provided via the Artesia Freeway (State Route 91 (SR-91)), the San Diego Freeway (Interstate 405 (I 405)) and the Harbor Freeway (State Route 110 (SR-110)) located to the northeast, south, and east, respectively. Local access to the Project site is provided via West 178th Street to the south, which is accessed from Normandie Avenue to the east, and South Western Avenue to the west. Two access driveways are currently located at 178th Street, at the eastern and western portions of the site.

The Project site is at the City's southern portion, in a predominantly industrial area, although residential uses exist west of Denker Avenue. The site is bounded by a vacant lot and an equestrian use (i.e., horse stables) to the north, industrial uses to the south beyond West 178th Street, office commercial and industrial uses to the east, and a mobile home park to the west.

As depicted on [Exhibit 2-2](#), the Project site is fully developed as an industrial use totaling approximately 105,036 square feet (SF) and including a trucking warehouse with associated surface parking lot and outdoor trailer storage. The warehouse is used for maintenance and storage of trucks and trailers.

The Project site is designated Industrial with a Mixed-Use Overlay<sup>1</sup> and zoned General Industrial (M-2) Zone with a Mixed-Use Overlay (MU) Zone.<sup>2</sup>

### 1.2 PROJECT DESCRIPTION

The Project proposes to develop a residential community consisting of 114 three-story, attached townhomes; see [Exhibit 3: Conceptual Site Plan](#). The 114 residential dwelling units (DU) would be constructed in 22 buildings, with between four and six DU per building. The proposed Project would have a density of 20.24 DU/AC (gross). The Project proposes to remove all existing onsite improvements (approximately 105,036 square feet (SF)) and construct approximately 191,348 SF of new townhomes, 48,727 SF of common open space, and 21,279 SF of private open space. A total of 287 parking spaces, including resident and guest, are proposed. The Project proposes General Plan Amendment to change the site's land use designation from Industrial with a Mixed Use Overlay to High Density Residential, and Zone Change (ZC) to change the site's zoning from General Industrial (M-2) with a Mixed-Use Overlay Zone (MU) to High Density Multiple-Family Residential Zone (R-4).

<sup>1</sup> City of Gardena. (2006, Updated February 2013). *Gardena General Plan 2006. Figure LU-2: 2013 General Plan Land Use Policy Map*. Gardena, CA: City of Gardena.

<sup>2</sup> City of Gardena. (January 2018). *Zoning Map*. Gardena, CA: City of Gardena Planning Division.

### **Project Construction and Phasing**

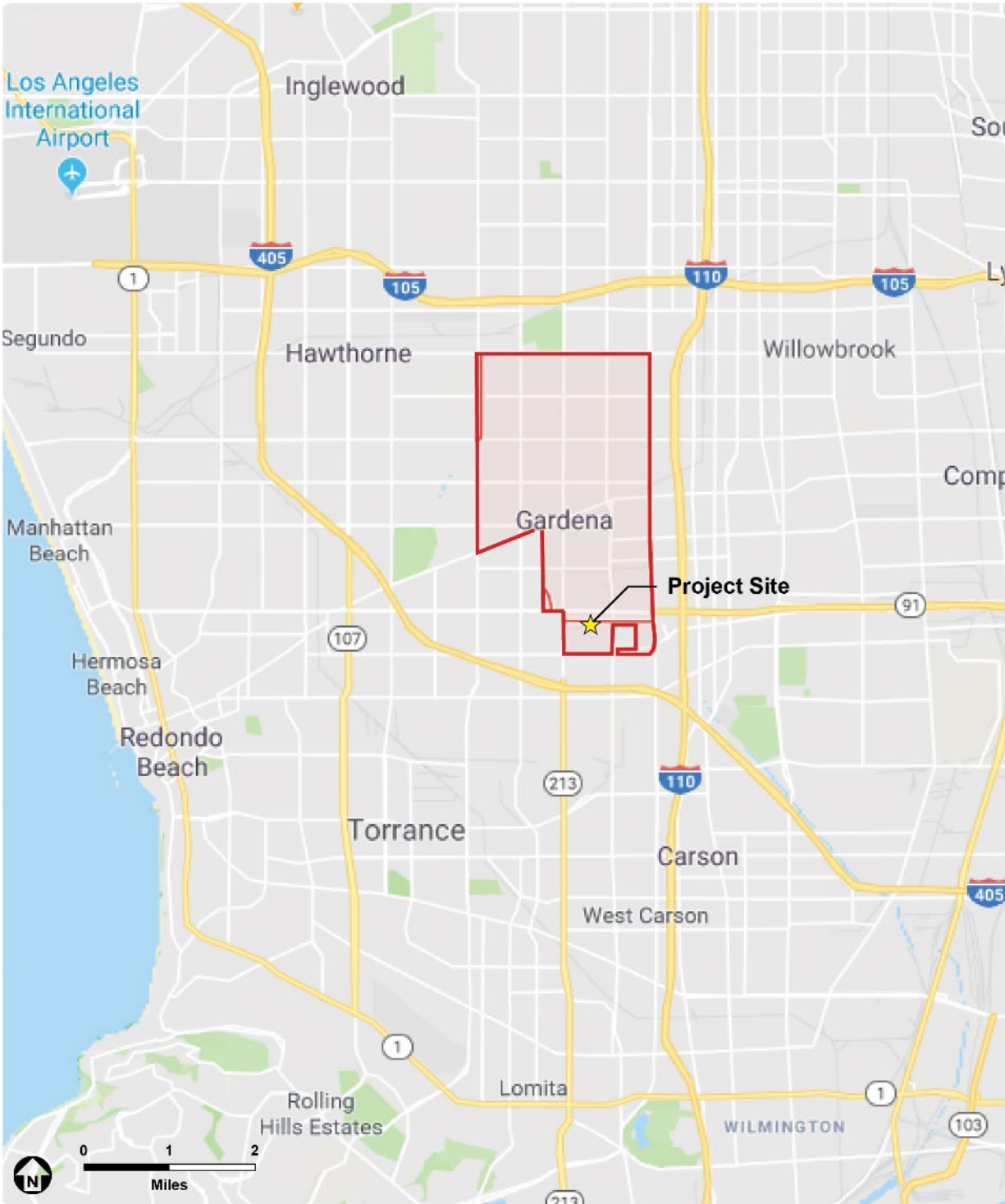
Project construction is anticipated to occur beginning Fall 2019 and ending early 2021 in the following sequence:

- Demolition,
- Site Preparation,
- Grading,
- Building Construction, and
- Paving, Architectural Coating, and Landscaping.

Grading for the proposed improvements would require cut and fill to create building pads. Grading is estimated to require approximately 7,600 cubic yards of soil import. Final grading plans would be approved by the City Engineer before Grading Permit issuance. All infrastructure (i.e., storm drain, water, wastewater, dry utilities, and street improvements) would be installed during grading.

Home construction would occur over approximately five to seven phases, the timing of which would be dependent upon market conditions. For purposes of this environmental analysis, opening year is assumed to be 2021.

### Exhibit 1: Regional Vicinity



Source: Google Maps

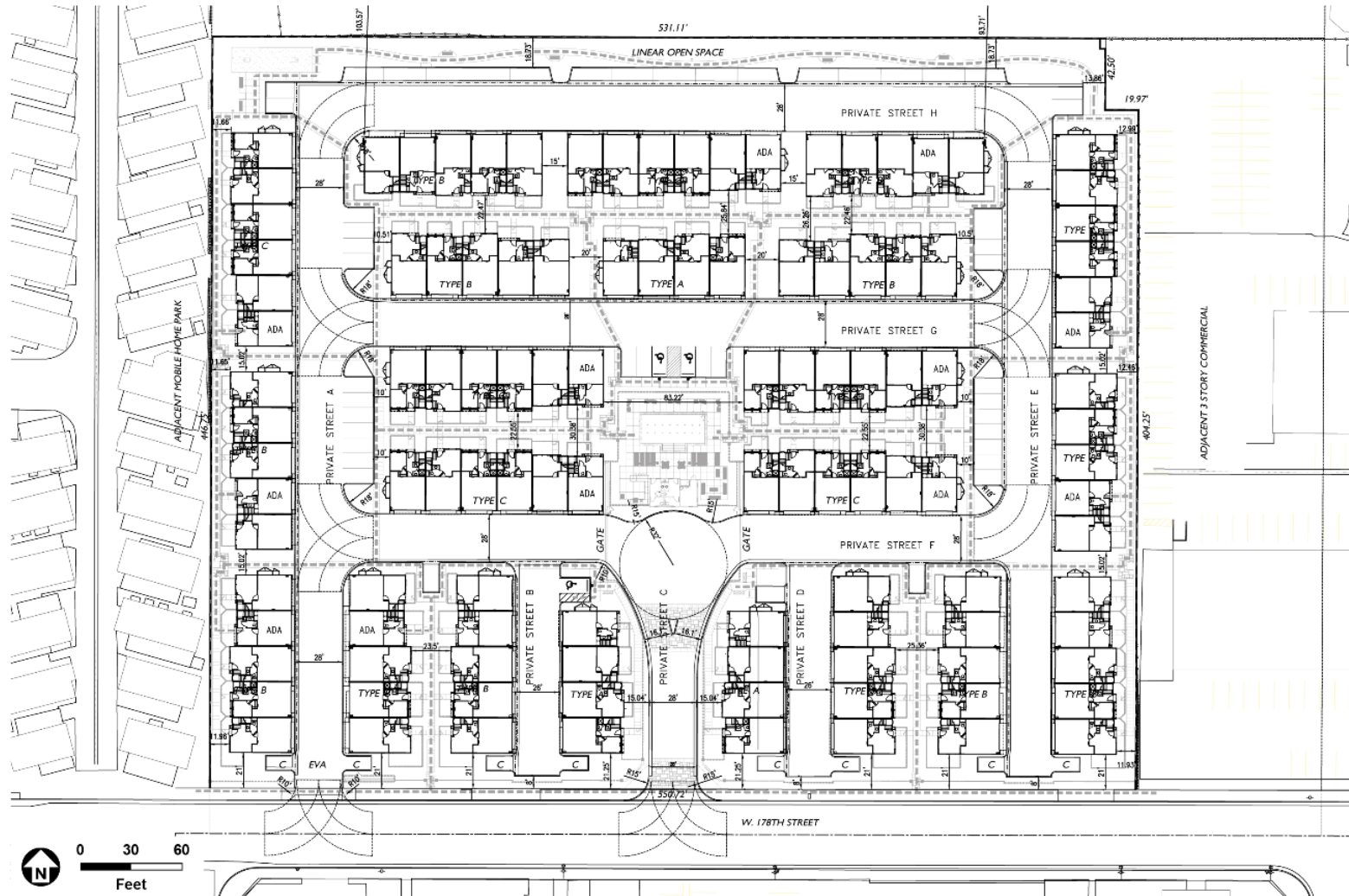
### Exhibit 2: Site Vicinity



Source: Near Maps



Exhibit 3: Site Plan



## 2 ENVIRONMENTAL SETTING

### 2.1 GREENHOUSE GASES AND CLIMATE CHANGE

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

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the Earth's climate, known as global climate change or global warming.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of a GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO<sub>2</sub> is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO<sub>2</sub> emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO<sub>2</sub> emissions remains stored in the atmosphere<sup>3</sup>. Table 1: Description of Greenhouse Gases, describes the primary GHGs attributed to global climate change, including their physical properties.

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<sup>3</sup> Intergovernmental Panel on Climate Change, *Carbon and Other Biogeochemical Cycles*. In: *Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013. [http://www.climatechange2013.org/images/report/WG1AR5\\_ALL\\_FINAL.pdf](http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf).

<b>Table 1: Description of Greenhouse Gases</b>	
<b>Greenhouse Gas</b>	<b>Description</b>
Carbon Dioxide (CO <sub>2</sub> )	CO <sub>2</sub> is a colorless, odorless gas that is emitted naturally and through human activities. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The largest source of CO <sub>2</sub> emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. The atmospheric lifetime of CO <sub>2</sub> is variable because it is readily exchanged in the atmosphere. CO <sub>2</sub> is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining Global Warming Potentials for other GHGs.
Nitrous Oxide (N <sub>2</sub> O)	N <sub>2</sub> O is largely attributable to agricultural practices and soil management. Primary human-related sources of N <sub>2</sub> O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N <sub>2</sub> O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N <sub>2</sub> O is approximately 120 years. The Global Warming Potential of N <sub>2</sub> O is 298.
Methane (CH <sub>4</sub> )	CH <sub>4</sub> , a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is the major component of natural gas, approximately 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH <sub>4</sub> include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH <sub>4</sub> is approximately 12 years and the Global Warming Potential is 25.
Hydrofluorocarbons (HFCs)	HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is increasing, as the continued phase out of CFCs and HCFCs gains momentum. The 100-year Global Warming Potential of HFCs range from 124 for HFC-152 to 14,800 for HFC-23.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays approximately 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Global Warming Potentials range from 6,500 to 9,200.
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. Global Warming Potentials for CFCs range from 3,800 to 14,400.
Sulfur Hexafluoride (SF <sub>6</sub> )	SF <sub>6</sub> is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. The Global Warming Potential of SF <sub>6</sub> is 23,900.
Hydrochlorofluorocarbons (HCFCs)	HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, HCFCs are subject to a consumption cap and gradual phase out. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The 100-year Global Warming Potentials of HCFCs range from 90 for HCFC-123 to 1,800 for HCFC-142b.
Nitrogen Trifluoride (NF <sub>3</sub> )	NF <sub>3</sub> was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It has a high global warming potential of 17,200.
Source: Compiled from U.S. EPA, <i>Overview of Greenhouse Gases</i> , April 11, 2018 ( <a href="https://www.epa.gov/ghgemissions/overview-greenhouse-gases">https://www.epa.gov/ghgemissions/overview-greenhouse-gases</a> ); U.S. EPA, <i>Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016</i> , 2018; Intergovernmental Panel on Climate Change, <i>Climate Change 2007: The Physical Science Basis</i> , 2007; National Research Council, <i>Advancing the Science of Climate Change</i> , 2010; U.S. EPA, <i>Methane and Nitrous Oxide Emission from Natural Sources</i> , April 2010.	

### 3 REGULATORY SETTING

#### 3.1 FEDERAL

To date, national standards have not been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

**Energy Independence and Security Act of 2007.** The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

**U.S. Environmental Protection Agency Endangerment Finding.** The U.S. Environmental Protection Agency's (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub>) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

**Federal Vehicle Standards.** In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO<sub>2</sub> in model year

2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO<sub>2</sub> 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 EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO<sub>2</sub> emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

In 2018, the President and the EPA have stated their intent to halt various federal regulatory activities to reduce GHG emission, including the phase two program. California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. The timing and consequences of these types of federal decisions and potential responses from California and other states are currently speculative.

**Clean Power Plan and New Source Performance Standards for Electric Generating Units.** On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 Federal Register [FR] 64510–64660), also known as the Clean Power Plan (CPP). These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO<sub>2</sub> emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: one fossil-fuel-fired electric utility steam-generating unit and two stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO<sub>2</sub> emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the CPP pending resolution of several lawsuits. Additionally, in March 2017, the federal government directed the EPA Administrator to review the CPP to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

**Presidential Executive Order 13783.** Presidential Executive Order 13783, *Promoting Energy Independence and Economic Growth* issued on March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>.

## 3.2 STATE OF CALIFORNIA

### California Air Resources Board

The California Air Resources Board (CARB) is responsible for the coordination and oversight of state and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of CO<sub>2</sub> equivalents (CO<sub>2</sub>e) in the world and produced 459 million gross metric tons of CO<sub>2</sub>e in 2013. In California, the transportation sector is the largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark Assembly Bill (AB) 32, *California Global Warming Solutions Act of 2006*, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation related to GHG emissions reduction.

**Assembly Bill 32 (California Global Warming Solutions Act of 2006).** AB 32 instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 also directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

**CARB Scoping Plan.** CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual")<sup>4</sup>. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates early actions and additional GHG reduction measures by both CARB and the state's Climate Action Team, identifies additional measures to be pursued as regulations, and outlines the adopted role of a cap-and-trade program<sup>5</sup>. Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.

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<sup>4</sup> CARB defines business-as-usual (BAU) in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

<sup>5</sup> The Climate Action Team, led by the secretary of the California Environmental Protection Agency, is a group of State agency secretaries and heads of agencies, boards, and departments. Team members work to coordinate statewide efforts to implement global warming emissions reduction programs and the State's Climate Adaptation Strategy.

- Achieving a statewide renewables energy mix of 33 percent by 2020.
- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several sustainable community strategies have been adopted).
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of California's long-term commitment to AB 32 implementation.

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated considering current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO<sub>2</sub>e (MMTCO<sub>2</sub>e) to 545 MMTCO<sub>2</sub>e. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated state-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

In January 2017, CARB released the 2017 Climate Change Scoping Plan Update (Second Update) for public review and comment (CARB, 2017). The Second Update sets forth CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32 (discussed below). The Second Update was approved by CARB's Governing Board on December 14, 2017 (CARB, 2017).

**Senate Bill 32 (California Global Warming Solutions Act of 2006: Emissions Limit).** Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017, CARB adopted a second update to the Scoping Plan (CARB, 2017b). The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030

target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping Plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other Federal actions.

**SB 375 (The Sustainable Communities and Climate Protection Act of 2008).** Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies. The applicable sustainable community strategy in the Bay Area is Plan Bay Area 2040.

**AB 1493 (Pavley Regulations and Fuel Efficiency Standards).** AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO<sub>2</sub>e emissions and 75 percent fewer smog-forming emissions.

**SB 1368 (Emission Performance Standards).** SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, for 1,100 pounds of CO<sub>2</sub> per megawatt-hour.

**SB 1078 and SBX1-2 (Renewable Electricity Standards).** SB 1078 required California to generate 20 percent of its electricity from renewable energy by 2017. This goal was accelerated with SB 107, which changed the due date to 2010 instead of 2017. On November 17, 2008, Executive Order S-14-08 established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SB X1-2 codified the 33 percent by 2020 goal.

**SB 350 (Clean Energy and Pollution Reduction Act of 2015).** Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 45 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator to develop more regional electricity transmission markets



and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

**AB 398 (Market-Based Compliance Mechanisms).** Signed on July 25, 2017, AB 398 extended the duration of the Cap-and-Trade program from 2020 to 2030. AB 398 required CARB to update the Scoping Plan and for all GHG rules and regulations adopted by the State. It also designated CARB as the statewide regulatory body responsible for ensuring that California meets its statewide carbon pollution reduction targets, while retaining local air districts' responsibility and authority to curb toxic air contaminants and criteria pollutants from local sources that severely impact public health. AB 398 also decreased free carbon allowances over 40 percent by 2030 and prioritized Cap-and-Trade spending to various programs including reducing diesel emissions in impacted communities.

**SB 150 (Regional Transportation Plans).** Signed on October 10, 2017, SB 150 aligns local and regional GHG reduction targets with State targets (i.e., 40 percent below their 1990 levels by 2030). SB 150 creates a process to include communities in discussions on how to monitor their regions' progress on meeting these goals. The bill also requires the CARB to regularly report on that progress, as well as on the successes and the challenges regions experience associated with achieving their targets. SB 150 provides for accounting of climate change efforts and GHG reductions and identify effective reduction strategies.

**SB 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases).** Signed into Law in September 2018, SB 100 increased California's renewable electricity portfolio from 50 to 60 percent by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

### Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs using executive orders. Although not regulatory, they set the state's tone and guide the actions of state agencies.

**Executive Order S-3-05.** Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

**Executive Order S-01-07.** Issued on January 18, 2007, Executive Order S-01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the LCFS on April 23, 2009.

**Executive Order S-13-08.** Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

**Executive Order S-14-08.** Issued on November 17, 2008, Executive Order S-14-08 expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the state come from renewable energy by 2020. CARB adopted the Renewable Electricity Standard on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

**Executive Order S-21-09.** Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's RPS to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

**Executive Order B-30-15.** Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO<sub>2</sub>e (MMTCO<sub>2</sub>e). The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the state's climate adaptation plan to be updated every three years and for the state to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

**Executive Order B-55-18.** Issued on September 10, 2018, Executive Order B-55-18 establishes a goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing GHG emissions. The executive order requires CARB to work with relevant state agencies to develop a framework for implementing this goal. It also requires CARB to update the Scoping Plan to identify and recommend measures to achieve carbon neutrality. The executive order also requires state agencies to develop sequestration targets in the Natural and Working Lands Climate Change Implementation Plan.

### California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat, even with rapid population growth.

**Title 20 Appliance Efficiency Regulations.** The appliance efficiency regulations (California Code of Regulations [CCR] Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

**Title 24 Building Energy Efficiency Standards.** California’s Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California’s energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and will take effect on January 1, 2020. Under the 2019 standards, residential dwellings will be required to use approximately 53 percent less energy and nonresidential buildings will be required to use approximately 30 percent less energy than buildings under the 2016 standards.

**Title 24 California Green Building Standards Code.** The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as CALGreen, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and nonresidential buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the 2016 CALGreen Code, went into effect January 1, 2017. Updates to the 2016 CALGreen Code will take effect on January 1, 2020 (2019 CALGreen). The 2019 CALGreen standards will continue to improve upon the existing standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The new 2019 CALGreen standards require residential buildings to be solar ready through solar panels; see 2019 Building Energy Efficiency Standards Section 110.10.

### 3.3 REGIONAL

#### South Coast Air Quality Management District Thresholds

The South Coast Air Quality Management District (SCAQMD) formed a GHG California Environmental Quality Act (CEQA) Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. As of the last Working Group meeting (Meeting 15) held in September 2010, the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency.

With the tiered approach, a project is compared with the requirements of each tier sequentially and would not result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB 97 from resulting in a significant impact. Tier 2 excludes projects that are consistent with a GHG reduction plan that has a certified final CEQA document and complies with AB 32 GHG reduction goals. Tier 3 excludes projects with annual emissions lower than a screening threshold. The SCAQMD is proposing a screening threshold of 10,000 metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e) per year for industrial projects and 3,000 MTCO<sub>2</sub>e for non-industrial projects. SCAQMD concluded that projects with emissions less than the screening threshold would not result in a significant cumulative impact.

Tier 4 consists of three decision tree options. Under the Tier 4 first option, SCAQMD initially outlined that a project would be excluded if design features and/or mitigation measures resulted in emissions 30 percent lower than business as usual emissions. However, the Working Group did not provide a recommendation for this approach. The Working Group folded the Tier 4 second option into the third

option. Under the Tier 4 third option, a project would be excluded if it was below an efficiency-based threshold of 4.8 MTCO<sub>2</sub>e per service population per year. Tier 5 would exclude projects that implement offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level.

GHG efficiency metrics are utilized as thresholds to assess the GHG efficiency of a project on a per capita basis or on a service population basis (the sum of the number of jobs and the number of residents provided by a project) such that the project would allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020 and 2035). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal of the state, by the estimated 2035 population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32, and is appropriate, because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use).

### **Southern California Association of Governments**

On April 7, 2016, the Southern California Association of Governments (SCAG) Regional Council adopted the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)*. The RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The strategy was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The RTP/SCS is a long-range vision plan that balances future mobility and housing needs with economic, environmental, and public health goals. The SCAG region strives toward sustainability through integrated land use and transportation planning. The SCAG region must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions.

## **3.4 LOCAL**

### **City of Gardena Energy Efficiency Climate Action Plan**

The City of Gardena, in concert with the South Bay Cities Council of Governments (SBCCOG) developed the City's Energy Efficiency Climate Action Plan (EECAP) in 2015. The EECAP demonstrates the City's commitment to providing a more livable, equitable, and economically vibrant community and sub-region through implementation of energy efficiency measures and subsequent reduction of GHG emissions. By using energy more efficiently, Gardena seeks to support the local economy, create new green jobs, and improve the community's quality of life. The EECAP energy efficiency measures are intended to be implemented in coordination with the City's other planning and land use decisions. The EECAP measures establish goals and policies that incorporate environmental responsibility into its daily management of its community and municipal operations. The EECAP includes emissions inventories, reduction targets, future projections, community GHG reduction strategies, and municipal GHG reduction strategies. The EECAP identifies a 2020 reduction target of 15 percent below 2005 levels by 2020 and 49 percent below 2005 levels by 2035.

**City of Gardena Climate Action Plan**

The City and the South Bay Cities Council of Governments has also prepared a Climate Action Plan (CAP) (2017) to Guide the City of Gardena toward a more sustainable future. The goal of the CAP is to reduce GHG emissions within the City. The City's CAP serves as a guide for action by setting GHG emission reduction goals and establishing strategies and policy to achieve desired outcomes over the next 20 years. The CAP outlines various municipal measures that encourage reductions in the following categories: land use and transportation, energy efficiency, solid waste, urban greening, and energy generation and storage. The CAP maintains the reduction targets established in the EECAP.

## 4 SIGNIFICANCE CRITERIA AND METHODOLOGY

### 4.1 THRESHOLDS AND SIGNIFICANT CRITERIA

Based upon the criteria derived from State CEQA Guidelines Appendix G, a project normally would have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Addressing GHG emissions generation impacts requires an agency to determine what constitutes a significant impact. The amendments to the State CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine whether a project's GHG emissions would have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" a project's GHG emissions (14 California Code of Regulations Section 15064.4(a)).

The City of Gardena has not adopted project-specific significance thresholds. For the proposed Project, the SCAQMD's proposed 3,000 MTCO<sub>2e</sub> annual non-industrial screening threshold is used as the significance threshold, in addition to the qualitative thresholds of significance set forth above from State CEQA Guidelines Appendix G.

### 4.2 METHODOLOGY

The Project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). Details of the modeling assumptions and emission factors are provided in [Appendix A: Greenhouse Gas Emissions Data](#). For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. The Project's construction-related GHG emissions were forecasted based on the proposed construction schedule and applying the mobile-source and fugitive dust emissions factors derived from CalEEMod. The Project's construction-related GHG emissions would be generated from off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. The Project's operations-related GHG emissions would be generated by vehicular traffic, area sources (e.g., landscaping maintenance, consumer products), electrical generation, natural gas consumption, water supply and wastewater treatment, and solid waste.

## 5 POTENTIAL IMPACTS AND MITIGATION

### 5.1 GREENHOUSE GAS EMISSIONS

**Threshold 5.1** Would the Project generate greenhouse gas emissions, either directly or indirectly, that could have a significant impact on the environment?

#### Short-Term Construction Greenhouse Gas Emissions

The proposed Project would result in direct GHG emissions from construction-related activities. The approximate daily GHG emissions generated by construction equipment utilized to build the proposed Project are included in [Table 2: Construction-Related Greenhouse Gas Emissions](#).

Category	MTCO <sub>2</sub> e
Total Construction Emissions	889
30-Year Amortized Construction	30

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

As shown in [Table 2](#), Project construction-related activities would generate approximately 889 MTCO<sub>2</sub>e of GHG emissions over the course of construction. Construction GHG emissions are typically summed and amortized over the Project's lifetime (assumed to be 30 years), then added to the operational emissions.<sup>6</sup> The amortized Project emissions would be 30 MTCO<sub>2</sub>e per year. Once construction is complete, the generation of construction-related GHG emissions would cease.

#### Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions would occur over the proposed Project's life. The Project's operational GHG emissions would result from direct emissions such as Project-generated vehicular traffic, on-site combustion of natural gas, and operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water to the Project site and wastewater from the Project site, the emissions associated with solid waste generated from the Project site, and any fugitive refrigerants from air conditioning or refrigerators. The Project's total operational GHG emissions are summarized in [Table 3: Project Greenhouse Gas Emissions](#). As shown in [Table 3](#), Project operational GHG emissions would total approximately 1,122 MTCO<sub>2</sub>e annually, and combined with construction-related GHG emissions, would total approximately 1,152 MTCO<sub>2</sub>e annually.

[Table 3](#) indicates that most of the Project's emissions (approximately 91 percent) would be from energy and mobile sources. As noted above, energy and mobile sources are targeted by statewide measures such as continued implementation of the Renewable Portfolio Standard (the target is now set at 60 percent renewables by 2030) and extension of the Cap and Trade program (requires reductions from industrial

<sup>6</sup> The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13*, August 26, 2009).

sources, energy generation, and fossil fuels). The Cap and Trade program covers approximately 85 percent of California's GHG emissions as of January 2015. The statewide cap for GHG emissions from the capped sectors (i.e., electricity generation, industrial sources, petroleum refining, and cement production) began in 2013 and will decline approximately three percent each year, achieving GHG emission reductions throughout the program's duration. The passage of AB 398 in July 2017 extended the duration of the Cap and Trade program from 2020 to 2030.

<b>Table 3: Project Greenhouse Gas Emissions</b>	
<b>Emissions Source</b>	<b>MTCO<sub>2e</sub> per Year</b>
Construction Amortized Over 30 Years	30
Area Source	2
Energy	214
Mobile	839
Waste	13
Water and Wastewater	54
<b>Total</b>	<b>1,152</b>
<i>SCAQMD Project Threshold</i>	<i>3,000</i>
<b>Exceeds Threshold?</b>	<b>No</b>
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.	

Table 3 shows that the proposed Project would not exceed the SCAQMD GHG threshold of 3,000 MTCO<sub>2e</sub> per year. In addition, with continued implementation of various statewide measures, the Project's operational energy and mobile source emissions (approximately 91 percent of total Project emission) would continue to decline in the future. Project-related GHG emissions would be less than significant and no mitigation is required.

**Mitigation Measures:** No mitigation is required.

**Level of Significance:** Less than significant impact.

## 5.2 GREENHOUSE GAS REDUCTION PLAN COMPLIANCE

### Threshold 5.2 Would the Project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions?

In 2015, the City of Gardena adopted the EECAP to improve energy efficiency and reduce GHG emissions. The City also adopted a CAP in 2017. To develop this EECAP, a GHG emissions inventory was conducted to determine baseline GHG emissions from the community and from municipal operations for calendar year 2005 and 2012. A forecast was made of business-as-usual emissions in the absence of any emissions reduction actions. This forecast was then adjusted to account for the emissions reduction expected from statewide policies. The 2017 CAP uses the same inventories and reduction targets. To meet the City's GHG reductions target, the City would implement the additional local energy efficiency and GHG reduction



measures described in the EECAP and CAP. Reaching the emissions reduction goals requires that residents, businesses, and City government work together.

The proposed Project would be subject to compliance with all building codes in effect at the time of construction, which include energy conservation measures mandated by California Building Standards Code Title 24 – Energy Efficiency Standards. Because Title 24 standards require energy conservation features in new construction (e.g., high-efficiency lighting, high-efficiency heating, ventilating, and air-conditioning (HVAC) systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures), they indirectly regulate and reduce GHG emissions. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2016 standards improved upon the 2013 standards for new construction of, and additions and alterations to, residential, commercial, and industrial buildings. The 2016 standards went into effect on January 1, 2017.

The Project proposes to incorporate energy efficiency design features in compliance with Title 24 and CALGreen standards that are consistent with the EECAP's efficiency measures. Additionally, the Project is an infill development within an urbanized/developed area and would generate GHG emissions (1,152 MTCO<sub>2e</sub> per year) well below SCAQMD thresholds.

As noted above, approximately 91 percent of the Project's emissions are from energy and mobile sources, although, these emissions estimates are conservative based on the factors outlined below. It is noted that the City has no control over vehicle emissions (approximately 73 percent of the Project's total emissions).

- The Project would result in 620 average daily vehicle trips (ADT),<sup>7</sup> which is a conservative trip generation estimate given trip credits for the existing land uses that would be displaced have not been applied. When trip credits for the existing trucking warehouse are applied to the Project's trip generation estimates, the Project's net new trips would be offset, with proportionate offsets in mobile source emissions. Notwithstanding, for a conservative approach, this analysis assumes a traffic increase of 620 ADT.
- Project emissions would be further reduced by implementation of the 2017 Scoping Plan measures. These emissions would decline in the future due to statewide measures including the reduction in fuels' carbon content, CARB's advanced clean car program, CARB's mobile source strategy, fuel efficiency standards, cleaner technology, and fleet turnover. SCAG's 2016 RTP/SCS is also expected to help California reach its GHG reduction goals, with reductions in per capita transportation emissions of 9 percent by 2020 and 16 percent by 2035.<sup>8</sup> The Project is an infill development project near large employment areas, thereby potentially reducing the need to travel long distances for some residents and reducing associated GHG emissions.<sup>9</sup>

Concerning Executive Order S-3-05's 2050 goals, it is presently not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed. Nevertheless, it can be anticipated that Project operations would be subject to compliance with all applicable measures that State lawmakers have enacted and that would lead to an 80 percent reduction below 1990 levels by 2050.

The proposed Project demonstrates consistency with EECAP/CAP goals, measures, and emission reduction targets and would not conflict with any applicable plan, policy, or regulation of an agency adopted to

<sup>7</sup> Kimley-Horn & Associates, *Melia 178th Street Townhomes Project – Trip Generation Analysis*, May 2019.

<sup>8</sup> Southern California Association of Governments, *Final 2016–2040 RTP/SCS*, April 2016, p. 153.

<sup>9</sup> The California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures* (August 2010) identifies that infill developments, such as the proposed Project reduce vehicle miles traveled which reduces fuel consumption. Infill projects such as the proposed Project would have an improved location efficiency.

reduce GHG emissions, including Title 24, AB 32, and SB 32. Therefore, Project impacts would be less than significant.

**Mitigation Measures:** No mitigation is required.

**Level of Significance:** Less than significant impact.

### 5.3 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

#### Cumulative Setting

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have much longer atmospheric lifetimes of one year to several thousand years that allow them to be dispersed around the globe.

#### Cumulative Impacts and Mitigation Measures

It is generally the case that an individual project of the proposed Project's size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The additive effect of Project-related GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the proposed Project as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As shown in [Table 3](#), the proposed Project's GHG emissions would be less than significant. Additionally, as discussed above, the Project would be consistent with the City's EECAP and CAP. As a result, the Project would not conflict with any GHG reduction plan. Therefore, the Project's cumulative contribution of GHG emissions would be less than significant and the Project's cumulative GHG impacts would also be less than cumulatively considerable.

**Mitigation Measures:** No mitigation is required.

**Level of Significance:** Less than significant impact.

## 6 REFERENCES

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11. U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, 2010.
12. U.S. EPA, *Overview of Greenhouse Gases*, 2018.

## **Appendix A**

### **Greenhouse Gas Emissions Data**

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