

# 5.6 Greenhouse Gas Emissions

## 5.6.1 INTRODUCTION

This section evaluates the potential for implementation of the proposed Project to cumulatively contribute to greenhouse gas (GHG) emissions impacts. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, impacts of the proposed Project are considered on a cumulative basis. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (SCAQMD). This section also addresses the Project's consistency with applicable plans, policies, and public agency regulations adopted for the purpose of reducing the emissions of GHGs. The analysis within this section is based on the Greenhouse Gas Analysis prepared for the proposed Project by Urban Crossroads (GHG 2019), included as Appendix E.

## 5.6.2 REGULATORY SETTING

### National Climate Action Plan

In June 2013, President Obama enacted a national Climate Action Plan (CAP) that consisted of a wide variety of executive actions and had three pillars discussed below.

- **Cut Carbon in America:** The CAP consists of actions to help cut carbon by deploying clean energy such as cutting carbon from power plants, promoting renewable energy, and unlocking long-term investment in clean energy innovation.
- **Prepare the United States for Impacts of Climate Change:** The CAP consists of actions to help prepare for the impacts of climate change through building stronger and safer communities and infrastructure by supporting climate resilient investments and supporting communities as they prepare for impacts, and boosting resilience of building and infrastructure; protecting the economy and natural resources by identifying vulnerabilities, promoting insurance leadership, conserving land and water resources, managing drought, reducing wildfire risks, and preparing for future floods; and using sound science to manage climate impacts.
- **Lead International Efforts:** The CAP consists of actions to help the United States lead international efforts through working with other countries to take action by enhancing multilateral engagements with major economies, expanding bilateral cooperation among major emerging economies, combating short-lived climate pollutants, reducing deforestation and degradation, expanding clean energy use and cutting energy waste, promoting global free trade in environmental goods and services, phasing out subsidies that encourage wasteful use of fossil fuels, and by leading efforts to address climate change through international negotiations.

### California Assembly Bill 1493 – Pavley

In 2002, the California legislature adopted regulations to reduce GHG emissions in the transportation sector. In September 2004, pursuant to AB 1493, the CARB approved regulations to reduce GHG emissions from new motor vehicles beginning with the 2009 model year. In September 2009, CARB adopted amendments to the Pavley regulations to reduce GHG from 2009 to 2016. CARB, EPA, and the U.S. Department of Transportation's National Highway Traffic and Safety Administration (NHTSA) have coordinated efforts to develop fuel economy and GHG standards for model 2017-2025 vehicles. The GHG standards are incorporated into the "Low Emission Vehicle" (LEV) Regulations.

### California Executive Order S-3-05 – Statewide Emission Reduction Targets

Executive Order S-3-05 was established by Governor Arnold Schwarzenegger in June 2005. Executive Order S-3-05 establishes statewide emission reduction targets through the year 2050:

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

### California Assembly Bill 32 - Global Warming Solutions Act of 2006

In furtherance of the goals established in Executive Order S-3-05, the legislature enacted AB 32 to mandate the quantification and reduction of GHGs to 1990 levels by the year 2020. The law establishes periodic targets for reductions and requires certain facilities to report emissions of GHGs annually. The legislation authorizes CARB to reduce emissions from certain sectors that contribute the most to statewide emissions of GHGs.

Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Also, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

The first action under AB 32 resulted in the adoption of a report listing early action GHG emission reduction measures on June 21, 2007. The early actions include three specific GHG control rules. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. The three-original early-action regulations meeting the narrow legal definition of “discrete early action GHG reduction measures” include:

- A low-carbon fuel standard to reduce the “carbon intensity” of California fuels.
- Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of “do-it-yourself” automotive refrigerants.
- Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early-action regulations, which were also considered “discrete early action GHG reduction measures,” consist of:

- Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology.
- Reduction of auxiliary engine emissions of docked ships by requiring port electrification.
- Reduction of PFCs from the semiconductor industry.
- Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products).
- Requirements that all tune-up, smog check, and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency.

- Restriction on the use of SF<sub>6</sub> from non-electricity sectors if viable alternatives are available.

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MTCO<sub>2</sub>E. In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of GHGs for large facilities that account for 94 percent of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and other industrial sources that emit CO<sub>2</sub> in excess of specified thresholds.

On December 11, 2008, CARB approved the Climate Change Proposed Scoping Plan: A Framework for Change (Scoping Plan; CARB 2008) to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS).
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

The AB 32 Scoping Plan also anticipates that local government actions will result in reduced GHG emissions because local governments have the primary authority to plan, zone, approve, and permit development to accommodate population growth and the changing needs of their jurisdictions. The Scoping Plan also relies on the requirements of Senate Bill (SB) 375 (discussed below) to align local land use and transportation planning for achieving GHG reductions.

The Scoping Plan must be updated every five years to evaluate AB 32 policies and ensure that California is on track to achieve the 2020 GHG reduction goal. In 2014, CARB released the First Update to the Scoping Plan, which builds upon the Initial Scoping Plan with new strategies and recommendations. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. This update defines CARB's climate change priorities for the next five years and sets the groundwork to reach long-term goals set forth in Executive Order S-3-05. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals in the original 2008 Scoping Plan. It also evaluates how to align the state's "longer-term"

GHG reduction strategies with other state policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

On January 20, 2017, CARB released the proposed Second Update to the Scoping Plan, which identifies the State's post-2020 reduction strategy. The Second Update would reflect the 2030 target of a 40 percent reduction below 1990 levels, set by Executive Order B-30-15 and codified by SB 32. Key programs that the proposed Second Update builds upon include the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and much cleaner cars, trucks and freight movement, utilizing cleaner, renewable energy, and strategies to reduce methane emissions from agricultural and other wastes. The proposed Second Update is undergoing a review period and has not yet been adopted.

### **Senate Bill 375**

In August 2008, the legislature passed, and on September 30, 2008, Governor Schwarzenegger signed, SB 375 (Steinberg), which addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. Regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, as determined by CARB, are required to consider the emission reductions associated with vehicle emission standards (see SB 1493), the composition of fuels (see Executive Order S-1-07), and other CARB-approved measures to reduce GHG emissions. Regional metropolitan planning organizations (MPOs) will be responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan (RTP). The goal of the SCS is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If an SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies. SB 375 provides incentives for streamlining CEQA requirements by substantially reducing the requirements for "transit priority projects," as specified in SB 375, and eliminating the analysis of the impacts of certain residential projects on global warming and the growth-inducing impacts of those projects when the projects are consistent with the SCS or Alternative Planning Strategy. On September 23, 2010, CARB adopted the SB 375 targets for the regional MPOs.

### **Executive Order B-30-15 – 2030 Statewide Emission Reduction Target**

Executive Order B-30-15 was signed by Governor Jerry Brown on April 29, 2015, establishing an interim statewide GHG reduction target of 40 percent below 1990 levels by 2030, which is necessary to guide regulatory policy and investments in California in the midterm, and put California on the most cost-effective path for long-term emission reductions. Under this Executive Order, all state agencies with jurisdiction over sources of GHG emissions are required to continue to develop and implement emissions reduction programs to reach the state's 2050 target and attain a level of emissions necessary to avoid dangerous climate change. According to the Governor's Office, this Executive Order is in line with the scientifically established levels needed in the United States to limit global warming below 2°C - the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels.

### **Title 24 Energy Efficiency Standards and California Green Building Standards**

The 2019 California Code of Regulations Title 24 Part 6 becomes effective on January 1, 2020. The new standards focus on four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements. The ventilation measures improve indoor air quality, protecting homeowners from air pollution originating from outdoor and indoor sources. CEC indicates that these Title 24 standards will reduce energy consumption by 7 percent for

residential buildings and 30 percent for nonresidential buildings compared to the 2016 Title 24 requirements (CEC 2019).

### City of Santa Ana General Plan

The City is currently undergoing a comprehensive update to the General Plan. The City of Santa Ana General Plan Conservation Element and Energy Element include goals, policies, and objectives that support the reduction of GHGs. The existing General Plan goals, policies, and objectives relevant to the proposed Project include:

#### Conservation Element

**Objective 1.1:** Reduce air pollution emissions to achieve national ambient air quality standards.

#### Policies:

- Support local and regional land use and transportation plans that increase mass transit usage and reduce vehicle trips.
- Encourage water conservation through design and facilities features of new developments through the use of water quality wetlands, biofiltration swales, watershed-scale retrofits, etc. where such measures are likely to be effective and technically and economically feasible.

#### Energy Element

- Encourage higher densities of housing and office (mixed use) development to relate to areas of higher transportation access and capacity.
- Require and/or provide incentives for energy-efficient subdivision and site planning and building design.
- Establish, update and/or enforce energy performance requirements in the building code.

### City of Santa Ana Climate Action Plan

The City of Santa Ana adopted a CAP in December 2015 with the goal of reducing carbon emissions and energy use for the community. The CAP includes GHG emissions targets that are consistent with the reduction targets of the State of California and presents a number of strategies for the City to meet the targets. These reduction measures address emissions in five sectors: transportation and land use, energy, solid waste, water, and wastewater. The CAP measures that are relevant to the proposed Project include the following:

#### Transportation and Land Use Measures

- Development of Local Retail Service Nodes. Development that provides a mix of housing, commercial space, services, and job opportunities close to public transportation reduces dependency on cars and time spent in traffic and more closely links residents to jobs and services.
- Local Residential Nodes near Retail and Employment. Locate new residential development within retail and employment corridors to create a more optimal mix of land uses, which will be conducive to the increase use of transit.
- Local Residential Nodes near Residential and Retail Areas. Develop higher levels of mixed-use development, including employment, retail, and housing, to lower vehicle miles traveled (VMT) compared with areas where only one of these uses predominates.
- End-of-Trip Facilities in New Projects. End-of-trip facilities can include bike lockers, showers, and changing rooms, which can be used by cyclists and encourage cycling use.

- Design Guidelines for External Bike/Pedestrian/Transit Connectivity. The City plans to create guidelines that will mandate minimum levels of connectivity between various locations and the external transportation network.
- Community-wide Bike Sharing Stations. Development of bike-sharing stations at several locations throughout the City, including the Santa Ana Regional Transportation Center, major bus stop locations, City Hall, etc. These bicycles will help to extend trips possible through transit or directly substitute automobile trips.

#### Community Measures

- Property Assessed Clean Energy (PACE) Financing for Commercial and Residential Properties. PACE financing is available for energy and water saving measures as well as renewable energy generation. Energy efficiency projects financed through the program include air conditioning and heating systems, lighting upgrades, cool roofing materials, and solar installations.
- Southern California Edison (SCE) Small and Medium Business Direct Install. Energy efficiency contractors help small business identify ways to save electricity.
- Title 24 Energy Efficiency Standards. Minimum energy efficiency for new construction in California effective January 1, 2020.

#### Solid Waste, Water, and Wastewater Measures

- AB 341. Adopted by the state in 2011 and requires businesses that generate 4 cubic yards or more of commercial solid waste per week and multi-family residential dwellings of five units or more to recycle.
- Rainwater Harvesting. Collecting and re-using rainwater can minimize the amount of water flowing into storm drains, sewer systems, and local waterways and can reduce potable water consumption and electricity consumption from distribution.

The CAP describes that many of the commercial and employment corridors throughout the City have limited or no residential development. The CAP strategy envisions that the City would locate new residential development within these retail and employment corridors to create a more optimal mix of land uses. This mix of land uses could potentially divert some work, shopping, and eating trips from automobile use to bicycle and pedestrian travel; and it would result in reducing vehicle miles traveled. This higher level of mixed-use is also more conducive to the increased use of transit. Additionally, the CAP describes that the City will encourage new residential projects to locate within these commercial and employment corridors.

The CAP also describes development of bike sharing stations at several locations throughout the City including the Santa Ana Regional Transportation Center, major bus stop locations, City Hall, and other locations. These easily accessible bicycles can extend the trips possible through transit, or directly substitute for automobile trips on their own.

### 5.6.3 ENVIRONMENTAL SETTING

Gases that trap heat in the atmosphere are called GHGs. The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most in the scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases.

The principal GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). Because different GHGs have different warming potential, and CO<sub>2</sub> is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO<sub>2</sub> equivalents (CO<sub>2</sub>e). For example, SF<sub>6</sub> is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF<sub>6</sub>, while comprising a small fraction of the total GHGs emitted annually world-wide, is a much more potent GHG, with 22,800 times the global warming potential as CO<sub>2</sub>. Therefore, an emission of one metric ton (MT) of SF<sub>6</sub> could be reported as an emission of 22,800 MT of CO<sub>2</sub>e. Large emission sources are reported in million metric tons (MMT) of CO<sub>2</sub>e. The principal GHGs are described below, along with their global warming potential.

**Carbon dioxide:** Carbon dioxide (CO<sub>2</sub>) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (manmade) sources are from burning coal, oil, natural gas, and wood.

**Methane:** Methane (CH<sub>4</sub>) is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years, and its global warming potential is 28. Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.

**Nitrous oxide:** Nitrous oxide (N<sub>2</sub>O) (laughing gas) is a colorless GHG that has a lifetime of 121 years, and its global warming potential is 265. Sources include microbial processes in soil and water, fuel combustion, and industrial processes.

**Sulfur hexafluoride:** Sulfur hexafluoride (SF<sub>6</sub>) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas that has a lifetime of 3,200 years and a high global warming potential of 23,500. 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.

**Perfluorocarbons:** Perfluorocarbons (PFCs) have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Their global warming potential ranges from 7,000 to 11,000. Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.

**Hydrofluorocarbons:** Hydrofluorocarbons (HFCs) are a group of GHGs containing carbon, chlorine, and at least one hydrogen atom. Their global warming potential ranges from 100 to 12,000. Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.

Some of the potential effects in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more forest fires, and more drought years (CARB, 2009). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects:

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

GHGs are produced by both direct and indirect emissions sources. Direct emissions include consumption of natural gas, heating and cooling of buildings, landscaping activities and other equipment used directly by land uses. Indirect emissions include the consumption of fossil fuels for vehicle trips, electricity generation, water usage, and solid waste disposal.

### Existing California GHG Conditions

California has significantly slowed the rate of growth of GHG emissions due to the implementation of energy efficiency programs as well as adoption of strict emission controls; but is still a substantial contributor to the U.S. emissions inventory total. The California Air Resource Board (CARB) compiles GHG inventories for the State of California. Based upon the 2018 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2016 GHG emissions period, California emitted an average 429.4 million metric tons of CO<sub>2</sub>e (MMTCO<sub>2</sub>e) per year.

### Existing Project Site Conditions

The Project site is developed with three partially utilized industrial buildings that total approximately 212,121 square feet. The sources of GHG emissions related to existing uses onsite include natural gas used for heating and hot water, electricity usage, vehicle trips, use of landscaping equipment, use of consumer cleaning products, water demand, wastewater generation, and solid waste generation. The estimated GHG emissions from the existing development on the Project site are summarized on Table 5.6-1.

**Table 5.6-1: Existing Project Site Generated Greenhouse Gas Emissions**

Emission Source	Existing Emissions (MT/yr)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total CO <sub>2</sub> E
Area Source	0.01	1.00e-05	0.00	0.01
Energy Source	1,048.99	0.04	9.97e-03	1,052.99
Mobile Source (Passenger Cars)	656.00	0.02	0.00	656.45
Mobile Source (Trucks)	6,394.52	0.51	0.00	6,407.34
Waste	53.39	3.16	0.00	132.28
Water Usage	219.07	1.61	0.04	271.01
<b>Total Existing CO<sub>2</sub>E (All Sources)</b>	<b>8,520.07</b>			

Source: Urban Crossroads, 2019.

## 5.6.4 THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines indicates that a project could have a significant effect if it were to:

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

The City of Santa Ana has not adopted a numeric threshold of significance for GHG emissions. However, the City's CAP has a 1990 emissions target that is based on 2020 projected employment and population, efficiency thresholds. As detailed previously, the CAP's GHG emissions targets are consistent with the



reduction targets of the State of California and includes strategies for the City to meet the recommended targets. Projects that demonstrate consistency with the strategies, actions, and emission reduction targets contained in the CAP would have a less than significant impact related to conflict with the CAP.

The SCAQMD formed a working group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the air basin in 2008. The working group developed several different options that are contained in the SCAQMD Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold, that could be applied by lead agencies, which includes the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below one of the following screening thresholds, then the project is less than significant:
  - All land use types: 3,000 MTCO<sub>2</sub>E per year
  - Based on land use type:
    - Residential: 3,500 MTCO<sub>2</sub>E per year
    - Commercial: 1,400 MTCO<sub>2</sub>E per year
    - Mixed use: 3,000 MTCO<sub>2</sub>E per year
- Tier 4 has the following options:
  - Option 1: Reduce business as usual emissions by a certain percentage; this percentage is currently undefined.
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
  - Option 3: A project-level efficiency target of 4.8 MTCO<sub>2</sub>e per service population as a 2020 target and 3.0 MTCO<sub>2</sub>e per service population as a 2035 target. The recommended plan-level target for 2020 is 6.6 MTCO<sub>2</sub>e and the plan level target for 2035 is 4.1 MTCO<sub>2</sub>e.

Based on the information above, the following two-tiered approach is utilized to evaluate GHG emissions, herein:

- The SCAQMD's Tier 3 screening threshold of 3,000 MTCO<sub>2</sub>e is utilized. Based on guidance from the SCAQMD, if a non-industrial project would emit more than 3,000 MTCO<sub>2</sub>e per year of GHGs emissions, the project could result in significant impacts and additional analysis is conducted based upon SCAQMD's Tier 4 thresholds.
- The SCAQMD's Tier 4 Option 3 thresholds are based on the statewide 1990 emissions target and 2020 projected statewide employment and population in the land use sector and are not specific to any given City. However, the City of Santa Ana CAP has emissions targets that are based on employment and population ratios. This information provides efficiency thresholds that are specific to the City's emissions, population, and employment projections. Thus, for the purpose of this analysis, an efficiency threshold was derived from emissions data included in the City's CAP to assess whether the proposed Project's GHG emissions would result in a significant impact. The efficiency threshold

for the opening year of 2022 is 3.16 MTCO<sub>2e</sub> per service population and an efficiency threshold for 2030 is 2.05 MTCO<sub>2e</sub> per service population.

## 5.6.1 METHODOLOGY

The California Emissions Estimator Model (CalEEMod) v2016.3.2 is the most recent version and has been used to determine construction and operational GHG emissions from the proposed Project. The purpose of this model is to calculate construction-source and operational-source GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures, if applied. Construction emissions are quantified and per SCAQMD methodology, the total GHG emissions for construction activities are divided by 30-years, and then added to the annual operational phase of GHG emissions.

The state has established GHG emissions reduction targets for specific milestone years (i.e., 1990 emission levels by 2020; 40 percent below 1990 emission levels by 2030; and 80 percent below 1990 emission levels by 2050). Because the City has an adopted CAP that is based on these targets and the Project's opening year is 2022, the City's mass emissions target for 2022 was calculated by interpolating the CAP's 2020 emissions target. Then population and employment data was used to identify the service population (sum of population and employment). From the emissions targets and the service population data, the efficiency metrics were calculated, which identified the efficiency-based target (threshold) of 3.16 MTCO<sub>2e</sub> per service population.

## 5.6.2 ENVIRONMENTAL IMPACTS

### IMPACT GHG-1: THE PROJECT WOULD GENERATE GHG EMISSIONS, EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT.

#### Significant and Unavoidable.

#### Construction

As described in Section 3.0, *Project Description*, construction of the proposed Project is anticipated to occur in four phases that would last approximately 27-months. The construction-related activities involve the following: demolition, site preparation, grading, paving, construction of structures and infrastructure, and architectural coatings. These construction activities would result in the emission of GHGs from equipment exhaust, construction-related vehicular activity and construction worker automobile trips. Total estimated construction related GHG emissions from construction of the proposed Project were amortized over 30 years per SCAQMD methodology, and as shown on Table 5.6-2 would equal approximately 196.38 MTCO<sub>2e</sub> per year.

**Table 5.6-2: Summary of Amortized Construction Greenhouse Gas Emissions**

Year	Emissions (MT/yr)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total CO <sub>2</sub> E
2020	944.05	0.14	0.00	947.46
2021	3,280.19	0.26	0.00	3,286.65
2022	1,654.18	0.13	0.00	1,657.36
Total Annual Emissions	5,878.42	0.52	0.00	5,891.47
<b>30 Year Amortized Emissions (MTCO<sub>2e</sub>)</b>	<b>195.95</b>	<b>0.02</b>	<b>0.00</b>	<b>196.38</b>

Source: Urban Crossroads, 2019.

## Operation

Operation of the proposed Project would generate GHG emissions from vehicle trips, electricity and natural gas consumption, water and wastewater transport (the energy used to pump water), and solid waste generation. GHG emissions from electricity consumed by the proposed Project would be generated off-site by fuel combustion at the electricity provider. GHG emissions from water transport are also indirect emissions resulting from the energy required to transport water from its source. GHG emissions from solid waste disposal is associated with the anaerobic breakdown of material.

As shown in Table 5.6-3, the estimated increase in GHG emissions that would be generated from implementation of the proposed Project is estimated to be 9,861.60 MTCO<sub>2e</sub> per year.

**Table 5.6-3: Summary of Total Project Greenhouse Gas Emissions**

Emission Source	Emissions (MT/yr)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total CO <sub>2</sub> E
Annual construction-related emissions amortized over 30 years	195.95	0.02	0.00	196.38
Area Source	295.60	0.02	5.06e-03	297.71
Energy Source	5,614.41	0.20	0.06	5,638.18
Mobile Source	11,023.2	5	0.79	11,042.98
Waste	204.30	12.07	0.00	506.14
Water Usage	598.98	3.12	0.08	700.27
<b>Total Project CO<sub>2</sub>E (All Sources)</b>	<b>18,381.68</b>			
<b>Existing Emissions (Table 5.6-1)</b>	<b>-8,520.07</b>			
<b>Net Emissions (Project – Existing)</b>	<b>9,861.60</b>			

Source: Urban Crossroads, 2019.

This exceeds the SCAQMD Tier 3 screening threshold of 3,000 MTCO<sub>2e</sub>. Therefore, additional analysis is provided based upon the direction of SCAQMD's Tier 4 thresholds through use of the City's CAP emissions targets and projected service population, which as detailed previously in Section 5.6.5, *Methodology*, identified a threshold of 3.16 MTCO<sub>2e</sub> per service population in the Project opening year if 2022.

As described in Section 5.11, *Population and Housing*, the Project would result in 2,081 residents and 320 employees at full occupancy. This results in a service population of 2,401 (2,081 residents + 320 employees = 2,401 service population). The Project's net increase in GHG emissions of 9,861.60 MTCO<sub>2e</sub> per year divided by the service population of the Project would result in 4.10 MTCO<sub>2e</sub> annually per service population, which exceeds the threshold of 3.16 MTCO<sub>2e</sub> per service population.

Approximately 60 percent of the GHG emissions would be generated by Project mobile sources (vehicle trips). Neither the Project Applicant nor the Lead Agency (City of Santa Ana) can substantively or materially affect reductions in Project mobile-source emissions. However, the Project is an urban infill redevelopment that would provide mixed residential and commercial (retail/restaurant) uses. The site located near existing off-site employment, commercial, residential, and retail destinations and in proximity to existing public bus stops and freeways, which would result in reduced vehicle trips and Vehicle Miles Traveled (VMT) in comparison to a Project of similar size on land without close access to employment, service, and retail, destinations; in addition to public transit and freeways.

The California Air Pollution Control Officers Association (CAPCOA) has provided guidance for mitigating or reducing transportation related VMT from land use development projects within its guidance document titled

Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010). The land use characteristics of the Project are consistent with the CAPCOA guidance related to a reduction of VMT:

- **Area Density:** CAPCOA identifies that increases in area density, measured in terms of persons, jobs, or dwelling units per unit area, reduces VMT associated with transportation<sup>1</sup>, 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 guidance measure LUT-1). According to CAPCOA, the reduction in VMT from increases in area density applies to urban and suburban settings for residential, retail, office, industrial, and mixed-use projects. The urban infill/redevelopment Project would provide residential, retail/restaurant, and employment uses and is located near other employment opportunities, services, and retail commercial uses. The proposed Project would provide an increase in area residential density and an improvement to the jobs-housing balance. As detailed in Section 5.11, *Population and Housing*, the Project region has an existing and projected future imbalance between the number of jobs and housing units. Thus, per CAPCOA guidance, the addition of residential units within the area would reduce VMT and the VMT-related GHG emissions.
- **Location Efficiency:** Location efficiency describes the location of a project relative to the type of urban landscape such as an urban area, compact infill, or suburban center. CAPCOA guidance measure LUT-2.22 describes that a reduction in VMT and the related GHG emissions occurs from development within urban areas that include residential, retail, office, industrial, mixed-uses, and transportation access. As described previously, the Project is located in an urban infill location and would provide residential units near employment, retail, and services. Additionally, the Project is located adjacent to the Orange County Transit Authority (OCTA) bus lines that runs along Red Hill Avenue and Warner Avenue that makes use of transit efficient. Thus, the location efficiently of the Project would provide for reduced VMT and the related GHG emissions.

Also, according to the CAPCOA guidance, factors that contribute to VMT reductions include pedestrian connectivity between the project site and off-site destinations. The Project would include onsite sidewalks that would connect to the existing offsite sidewalks and bicycle lanes exist in the Project vicinity. Both walking and bicycling to onsite or nearby destinations would reduce transportation energy use and the related GHG emissions. Therefore, although the Project Applicant and City cannot reduce GHG vehicular emissions, the Project is consistent with the CAPCOA guidance for mitigating or reducing transportation related VMT from land use development projects.

In addition, the Project incorporates various sustainable design features that would reduce GHG emissions, which include:

- A minimum of 94 electric vehicle charging stations.
- Installation of drought-tolerant plants for landscaping.
- Installation of water-efficient irrigation systems, such as weather-based and soil-moisture-based irrigation controllers and sensors, for landscaping according to the California Department of Water Resources Model Efficient Landscape Ordinance.

---

<sup>1</sup> CalEEMod, by default, assumes that trip distances in the South Coast Air Basin (SCAB) are slightly longer than the statewide average. This is because the commute patterns in the SCAB involve a substantial portion of the population commuting relatively far distances, which is documented in the Southern California Association of Governments (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which shows that in existing and future plan conditions, more than 50 percent of all work trips are 10 miles or longer (SCAG, Performance Measures Appendix, page 13, 2016). Thus, work trips that would be less than 10 miles would assist in meeting the 2016 RTP/SCS goal of reducing overall VMT in the region.

- Designing buildings to provide CALGreen Standards with Leadership in Energy and Environmental Design features for potential certification and would employ energy and water conservation measures in accordance with such standards. This includes design considerations related to the building envelope; heating, ventilating, and air conditioning; lighting; and power systems.
- Installation of landscaping in surface parking lots to reduce heat island effect. Trees would be selected and placed to provide canopy and shade for the parking lots.
- Implementation of a recycling program in order to meet a 75 percent minimum waste diversion goal.
- Utilization of construction materials and interior finish products with zero or low emissions to improve indoor air quality.
- Provision of adequate ventilation and high-efficiency in-duct filtration system.
- Use of low volatile organic compound paints and wallpapers.

Also as described previously, the CEC anticipates that nonresidential buildings built with the 2019 Title 24/CalGreen standards would use approximately 30 percent less energy and residential buildings would use approximately 7 percent less energy compared to development under the 2016 standards. The reduction of energy use results in reduced GHG emissions. Compliance with Title 24 is enforced through the building permit process. The following Title 24 standards are applicable to the proposed Project and would reduce GHG emissions:

- Short-term bicycle parking. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.
- Long-term bicycle parking. For new buildings with 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space.
- Designated parking. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles.
- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling.
- Construction waste. A minimum 65 percent diversion of construction and demolition waste from landfills.
- Wastewater reduction. Each building shall reduce the generation of wastewater by either installing water-conserving fixtures or using non-potable water systems.
- Water use savings. 20 percent mandatory reduction of indoor water use.
- Water meters. Separate water meters for buildings in excess of 50,000 sf or buildings projected to consume more than 1,000 gallons per day.
- Irrigation efficiency. Moisture-sensing irrigation systems for larger landscaped areas.
- Materials pollution control. Utilize low pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard.

- Building commissioning. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 sf to ensure that all are working at their maximum capacity according to their design efficiencies.

However, there are no feasible Project measures that would reduce vehicular emissions, and approximately 60 percent of the GHG emissions would be generated by Project mobile sources (vehicle trips). Thus, neither the Project Applicant nor the Lead Agency (City of Santa Ana) can substantively or materially affect reductions in Project mobile-source emissions. The Project would result in a net increase in GHG emissions of 9,861.60 MTCO<sub>2e</sub> per year, which would be 4.10 MTCO<sub>2e</sub> annually per service population. This would exceed the SCAQMD Tier 3 screening threshold of 3,000 MTCO<sub>2e</sub> and exceed the SCAQMD Tier 4/City CAP threshold of 3.16 MTCO<sub>2e</sub> per service population. Therefore, impacts related to GHG emissions would be significant and unavoidable.

**IMPACT GHG-2: THE PROJECT WOULD CONFLICT WITH AN APPLICABLE PLAN, POLICY OR REGULATION OF AN AGENCY ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSION OF GHGS.**

**Significant and Unavoidable.** The proposed Project consists of an infill redevelopment project that would help to meet housing demands from projected growth in the region while helping to improve the jobs to housing balance (detailed in Section 5.11, *Population and Housing*), which has the potential to reduce GHG emissions from the reduction of vehicle miles traveled. The proposed Project provides for pedestrian infrastructure, such as sidewalks that connect to off-site sidewalks to promote non-vehicular transportation and reduce the vehicle miles traveled and related GHG emissions. In addition, the Project site is adjacent to existing bus routes and bicycle lanes. Providing a mixed-use development in such a location is consistent with the intent of the AB 32 Scoping Plan and SB 375, which is focused on changing land use patterns and improving transportation alternatives.

The proposed Project would be implemented pursuant to the 2019 CALGreen Building/Title 24 requirements, and provide new land uses in a sustainable manner. The City’s administration of the Title 24 requirements includes review of proposed energy conservation measures during the permitting process, which ensures that all requirements are met. Typical Title 24 measures include insulation; use of energy-efficient heating, ventilation and air conditioning equipment; solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; reclamation of heat rejection from refrigeration equipment to generate hot water; and incorporation of skylights, etc. In complying with the 2019 Title 24 standards, the Project would be implementing regulations that reduce GHG emissions.

Also, the CARB Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32. The CARB Scoping Plan recommendations serve as statewide measures to reduce GHG emissions levels. The proposed Project would be consistent with the applicable measures established in the 2008 Scoping Plan, as shown in Table 5.6-4.

**Table 5.6-4: Project Consistency with 2008 CARB Scoping Plan**

Action	Scoping Plan Measure	Consistency
Energy Efficiency	E-1	<b>Consistent.</b> The Project would include a variety of building, water, and solid waste efficiencies consistent with the most current CALGreen requirements.
	E-2	
	CR-1	
	CR-2	
	T-6	

Action	Scoping Plan Measure	Consistency
Million Solar Roofs (MSR) Program	E-4	<b>Consistent.</b> The MSR program sets a goal for use of solar systems throughout the state as a whole. While the Project currently does not include solar energy generation, the building roof structure would be designed to support solar panels in the future, consistent with Title 24 requirements.
Green Building Strategy	GB-1	<b>Consistent.</b> The Project would include a variety of building, water, and solid waste efficiencies consistent with the current CALGreen requirements.
Recycling and Waste	RW-1	<b>Consistent.</b> The Project would be required recycle a minimum of 65 percent from construction activities and Project operations per State and City requirements.
	RW-2	
	RW-3	
Sustainable Forests	F-1	<b>Consistent.</b> The Project would increase carbon sequestration by increasing on-site trees per the project landscaping plan.
Water	W-1	<b>Consistent.</b> The Project would include use of low-flow fixtures and efficient landscaping per State requirements.
	W-2	
	W-3	
	W-4	
	W-5	
	W-6	

Source: Urban Crossroads, 2019.

The 2017 Scoping Plan Update reflects the 2030 target of a 40 percent reduction below 1990 levels, set by Executive Order B-30-15 and codified by SB 32. Table 5.6-5 summarizes the Project’s consistency with the 2017 Scoping Plan. As described, the Project would not conflict with any of the provisions of the Scoping Plan.

**Table 5.6-5: Project Consistency with 2017 CARB Scoping Plan**

Action	Responsible Parties	Consistency
<b>Implement SB 350 by 2030</b>		
Increase the Renewables Portfolio Standard to 50 percent of retail sales by 2030 and ensure grid reliability.	CPUC, CEC, CARB	<b>Consistent.</b> The Project would use energy from Southern California Edison (SCE). SCE has committed to diversify its portfolio of energy sources by increasing energy from wind and solar sources. The Project would not interfere with or obstruct SCE energy source diversification efforts.
Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.		<b>Consistent.</b> The Project would be designed and constructed to implement the energy efficiency measures for new residential and commercial developments and would include several measures designed to reduce energy consumption. The Project would not interfere with or obstruct policies or strategies to establish annual targets for statewide energy efficiency savings and demand reduction.
Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in Integrated Resource Planning (IRP) to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly- owned utilities meet GHG emissions		<b>Consistent.</b> The proposed Project would be designed and constructed to implement the energy efficiency measures, where applicable by including several measures designed to reduce energy consumption. The proposed Project includes energy efficient fixtures, appliances, heating, and air conditioning systems that would meet the

Action	Responsible Parties	Consistency
reductions planning targets through a combination of measures as described in IRPs.		Title 24 Standards current at the time of permitting.
<b>Implement Mobile Source Strategy (Cleaner Technology and Fuels)</b>		
At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025.	<p style="text-align: center;">CARB, California State Transportation Agency (CalSTA), Strategic Growth Council (SGC), California Department of Transportation (Caltrans), CEC, OPR, Local Agencies</p>	<b>Consistent.</b> This is a CARB Mobile Source Strategy. The Project would not obstruct or interfere with CARB zero emission and plug-in hybrid light-duty electric vehicle 2025 targets.
At least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030.		<b>Consistent.</b> This is a CARB Mobile Source Strategy. The Project would not obstruct or interfere with CARB zero emission and plug-in hybrid light-duty electric vehicle 2030 targets.
Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean cars regulations.		<b>Consistent.</b> This is a CARB Mobile Source Strategy. The Project is a mixed-use development that would not obstruct or interfere with CARB efforts to further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean cars regulations.
Medium- and Heavy-Duty GHG Phase 2.		<b>Consistent.</b> This is a CARB Mobile Source Strategy. The Project is a mixed-use development that would not obstruct or interfere with CARB efforts to implement Medium- and Heavy-Duty GHG Phase 2.
Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NO <sub>x</sub> standard.		<b>Consistent.</b> This is a CARB Mobile Source Strategy. The Project is a mixed-use development that would not obstruct or interfere with CARB efforts improve transit-source emissions.
Last Mile Delivery: New regulation that would result in the use of low NO <sub>x</sub> or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030.		<b>Consistent.</b> This is a CARB Mobile Source Strategy. The Project is a mixed-use development that would not obstruct or interfere with CARB efforts to improve last mile delivery emissions.
Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies; forthcoming statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document		<b>Consistent.</b> As further detailed in Section 5.14, <i>Transportation</i> , the Project would not obstruct or interfere with implementation of SB 375 and would therefore not conflict with this measure.



Action	Responsible Parties	Consistency
"Potential VMT Reduction Strategies for Discussion."		
Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets).	CARB	<b>Consistent.</b> This is a CARB Mobile Source Strategy. The Project is a mixed-use development that would not obstruct or interfere with CARB efforts to increase stringency of SB 375 Sustainable Communities Strategy (2035 targets).
Harmonize project performance with emissions reductions and increase competitiveness of transit and active transportation modes (e.g. via guideline documents, funding programs, project selection, etc.).	CalSTA, SGC, OPR, CARB, Governor's Office of Business and Economic Development (GO-Biz), California Infrastructure and Economic Development Bank (IBank), Department of Finance (DOF), California Transportation Commission (CTC), Caltrans	<b>Consistent.</b> The Project is a mixed-use development that would not obstruct or interfere with agency efforts to harmonize transportation facility project performance with emissions reductions and increase competitiveness of transit and active transportation modes.
By 2019, develop pricing policies to support low-GHG transportation (e.g. low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).	CalSTA, Caltrans, CTC, OPR, SGC, CARB	<b>Consistent.</b> The Project is a mixed-use development that would not obstruct or interfere with agency efforts to develop pricing policies to support low-GHG transportation.
<b>Implement California Sustainable Freight Action Plan</b>		
Improve freight system efficiency.	CalSTA, CalEPA, CNRA, CARB, Caltrans, CEC, GO-Biz	<b>Consistent.</b> This measure would apply to all trucks accessing the Project site, this may include existing trucks or new trucks that are part of the statewide goods movement sector. The Project would not obstruct or interfere with agency efforts to improve freight system efficiency.
Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.		<b>Consistent.</b> The Project would not obstruct or interfere with agency efforts to deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.

Action	Responsible Parties	Consistency
Adopt a Low Carbon Fuel Standard with a Carbon Intensity reduction of 18 percent.	CARB	<b>Consistent.</b> When adopted, this measure would apply to all fuel purchased and used by the Project in the state. The Project would not obstruct or interfere with agency efforts to adopt a Low Carbon Fuel Standard with a Carbon Intensity reduction of 18 percent.
<b>Implement the Short-Lived Climate Pollutant Strategy (SLPS) by 2030</b>		
40 percent reduction in methane and hydrofluorocarbon emissions below 2013 levels.	CARB, CalRecycle, CDFA, SWRCB, Local Air Districts	<b>Consistent.</b> The Project would be required to comply with this measure and reduce any Project-source SLPS emissions accordingly. The Project would not obstruct or interfere agency efforts to reduce SLPS emissions.
50 percent reduction in black carbon emissions below 2013 levels.		
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	CARB, CalRecycle, CDFA SWRCB, Local Air Districts	<b>Consistent.</b> The Project would implement waste reduction and recycling measures consistent with State and City requirements. The Project would not obstruct or interfere agency efforts to support organic waste landfill reduction goals in the SLCP and SB 1383.
Implement the post-2020 Cap-and-Trade Program with declining annual caps.	CARB	<b>Consistent.</b> The Project would be required to comply with any applicable Cap-and-Trade Program provisions. The Project would not obstruct or interfere agency efforts to implement the post-2020 Cap-and-Trade Program.
<b>By 2018, develop Integrated Natural and Working Lands Implementation Plan to secure California's land base as a net carbon sink</b>		
Protect land from conversion through conservation easements and other incentives.	CNRA, Departments Within CDFA, CalEPA, CARB	<b>Consistent.</b> The Project site is not subject to a conservation easement. The Project would not obstruct or interfere agency efforts to protect land from conversion through conservation easements and other incentives.
Increase the long-term resilience of carbon storage in the land base and enhance sequestration capacity		<b>Consistent.</b> The Project site is not an area that provides for carbon sequestration. The Project would not obstruct or interfere agency efforts to increase the long-term resilience of carbon storage in the land base and enhance sequestration capacity.
Utilize wood and agricultural products to increase the amount of carbon stored in the natural and built environments		<b>Consistent.</b> The Project design incorporates wood and wood products. The Project would not obstruct or interfere agency efforts to encourage use of wood and agricultural products to increase the amount of carbon stored in the natural and built environments.
Establish scenario projections to serve as the foundation for the Implementation Plan		<b>Consistent.</b> The Project would not obstruct or interfere agency efforts to establish scenario projections to serve as the foundation for the Implementation Plan.

Action	Responsible Parties	Consistency
Establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018	CARB	<b>Consistent.</b> The Project would not obstruct or interfere agency efforts to establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018.
Implement Forest Carbon Plan	CNRA, California Department of Forestry and Fire Protection (CAL FIRE), CalEPA and Departments Within	<b>Consistent.</b> The Project would not obstruct or interfere agency efforts to implement the Forest Carbon Plan.
Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.	State Agencies & Local Agencies	<b>Consistent.</b> The Project would not obstruct or interfere agency efforts to identify and expand funding and financing mechanisms to support GHG reductions across all sectors.

Source: Urban Crossroads, 2019.

The City of Santa Ana’s CAP includes reduction measures that would help the City achieve its emissions reduction goal, which is consistent with the statewide goals identified. This includes measures related to transportation and land use, community-wide energy, solid waste, water, and wastewater. The CAP describes that many of the commercial and employment corridors throughout the City have limited or no residential development. The proposed Project is consistent with City’s CAP strategy of locating new mixed-use development within employment corridors to create a more optimal mix of land uses and reduce vehicle miles traveled. The proposed Project would be consistent with the relevant measures of the City’s CAP as described in Table 5.6-6.

**Table 5.6-6: Project Consistency with Santa Ana CAP**

CAP Measure	Project Consistency
<b>Transportation and Land Use Measures</b>	
<b>Development of Local Retail Service Nodes.</b> Development that provides a mix of housing, commercial space, services, and job opportunities close to public transportation reduces dependency on cars and time spent in traffic and more closely links residents to jobs and services.	<b>Consistent.</b> The proposed urban infill/redevelopment Project that includes a mix of housing and commercial space would provide services, restaurants, and job opportunities. The Project is also located near existing employment, services, retail, and is adjacent to existing bus stops, which would result in reduced VMT in comparison to a project of similar size and land without close access to employment, service, retail, and transit. As described in Section 5.11 <i>Population and Housing</i> , the Project would assist in improving the jobs to housing balance. These Project aspects would reduce dependency on cars and time spent in traffic and more closely link residents to jobs and services.
<b>Local Residential Nodes near Retail and Employment.</b> Locate new residential development within retail and employment corridors to create a	<b>Consistent.</b> The Project would develop a mixed-uses that would include residential, commercial (retail/restaurant), and employment opportunities near areas of existing or planned

CAP Measure	Project Consistency
more optimal mix of land uses, which will be conducive to the increase use of transit.	employment and retail uses that is adjacent to existing bus routes.
<b>Local Employment Nodes near Residential and Retail Areas.</b> Develop higher levels of mixed-use development, including employment, retail, and housing, to lower vehicle miles traveled (VMT) compared with areas where only one of these uses predominates.	<b>Consistent.</b> The proposed urban infill/redevelopment Project would provide mixed residential and commercial uses and is located near existing employment and retail uses, which would result in reduced VMT in comparison to an area where only one of these uses predominates. As described in Section 5.11, <i>Population and Housing</i> , the Project would assist in improving the jobs to housing balance.
<b>End-of-Trip Facilities in New Projects.</b> End-of-trip facilities can include bike lockers, showers, and changing rooms, which can be used by cyclists and encourage cycling use.	<b>Consistent.</b> The Project includes secure bicycle parking, which would encourage cycling use.
<b>Design Guidelines for External Bike/Pedestrian/Transit Connectivity.</b> The City plans to create guidelines that will mandate minimum levels of connectivity between various locations and the external transportation network.	<b>Consistent.</b> The Project would provide connectivity between the Project site and the existing off-site bicycle, pedestrian, and transit infrastructure by including sidewalks and walkways onsite that would connect to the existing off-site infrastructure.
<b>Community Measures</b>	
<b>Property Assessed Clean Energy (PACE) Financing for Commercial and Residential Properties.</b> PACE financing is available for energy and water saving measures as well as renewable energy generation. Energy efficiency projects financed through the program include air conditioning and heating systems, lighting upgrades, cool roofing materials, and solar installations.	<b>Consistent.</b> The Project includes energy efficient infrastructure, such as 2019 Title 24 compliant irrigation and plumbing systems, energy efficient appliances, solar-reflective roofing materials, and a minimum of 94 electric vehicle charging stations. Financial programs such as PACE can provide assistance to the developer to implement these measures.
<b>Southern California Edison (SCE) Small and Medium Business Direct Install.</b> Energy efficiency contractors help small business identify ways to save electricity.	<b>Consistent.</b> The Project incorporates energy saving measures into the Project design, as described in the previous response. Programs such as SCE Direct Install can assist the developer with implementing these measures.
<b>Solar Photovoltaic Systems—New Private Installs.</b> The City is offering solar incentives that include permit fee waivers, free plan check services, and free building inspections for solar photovoltaic systems.	<b>Consistent.</b> The Project currently does not specifically include the use of solar photovoltaic systems. However, beginning in 2020 the California Building Code will include a requirement for new residential buildings to include solar rooftop panels. In addition, the solar incentives offered by the state could be used to assist the developer with solar photovoltaic installations.
<b>Title 24 Energy Efficiency Standards.</b> Minimum energy efficiency for new construction in California effective January 1, 2020.	<b>Consistent.</b> The Project would be developed and operated in compliance with the Title 24 Energy Standards that are current at the time of construction.
<b>Solid Waste, Water, and Wastewater Measures</b>	
<b>AB 341.</b> Adopted by the state in 2011 and requires businesses that generate 4 cubic yards or more of commercial solid waste per week and multi-family residential dwellings of five units or more to recycle.	<b>Consistent.</b> The Project would implement a solid waste recycling system in compliance with state and local regulations.

However, as described in Impact GHG-1, the CAP includes emissions targets based on state GHG reduction requirements, which were used to identify the 2022 efficiency-based threshold of 3.16 MTCO<sub>2</sub>e per service population. Implementation of the proposed Project would result in 4.10 MTCO<sub>2</sub>e annually per service population, which would exceed the threshold. As described previously, the Project would include sustainable design features and comply with Title 24/CalGreen standards; however, approximately 60 percent of the GHG emissions would be generated by vehicle trips. Neither the Project Applicant nor the Lead Agency (City of Santa Ana) can substantively or materially reduce the vehicular-source GHG emissions. Thus, the

Project would result in an exceedance of the CAP's emissions target and impacts would be significant and unavoidable.

### 5.6.7 CUMULATIVE IMPACTS

GHG emissions impacts are assessed in a cumulative context, since no single project can cause a discernible change to climate. Climate change impacts are the result of incremental contributions from natural processes, and past and present human-related activities. Therefore, the area in which a proposed Project in combination with other past, present, or future projects, could contribute to a significant cumulative climate change impact would not be defined by a geographical boundary such as a project site or combination of sites, city or air basin. GHG emissions have high atmospheric lifetimes and can travel across the globe over a period of 50 to 100 years or more. Even though the emissions of GHGs cannot be defined by a geographic boundary and are effectively part of the global issue of climate change, CEQA places a boundary for the analysis of impacts at the state's borders. Thus, the geographic area for analysis of cumulative GHG emissions impacts is the State of California.

Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006 (Nunez), recognizes that California is the source of substantial amounts of GHG emissions. The statute begins with several legislative findings and declarations of intent, including the following:

*Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems" (California Health and Safety Code, Section 38501(a)).*

Thus, AB 32 recognizes the significance of the statewide cumulative impact of GHG emissions from sources throughout the state and sets a performance standard for mitigation of that cumulative impact.

The analysis of GHG emission impacts under CEQA contained in this EIR effectively constitutes an analysis of a project's contribution to the significant cumulative impact of GHG emissions. As described previously, the Project would result in a net increase in GHG emissions of 9,861.60 MTCO<sub>2e</sub> per year, which would be 4.10 MTCO<sub>2e</sub> annually per service population. This would exceed the SCAQMD Tier 3 screening threshold of 3,000 MTCO<sub>2e</sub> and exceed the SCAQMD Tier 4/City CAP threshold of 3.16 MTCO<sub>2e</sub> per service population. Therefore, impacts related to GHG emissions would be cumulatively significant and unavoidable.

### 5.6.8 EXISTING STANDARD CONDITIONS AND PLANS, PROGRAMS, OR POLICIES

The following requirements would reduce impacts related to GHG emissions.

- California Assembly Bill 1493 (Pavley)
- California Executive Order S-3-05
- Assembly Bill 32 (Global Warming Solutions Act of 2006)
- Senate Bill 375 (Steinberg)
- California Executive Order B-30-15
- California Energy Code
- California Green Building Standards Code

- Santa Ana CAP

## 5.6.9 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Impacts GHG-1 and GHG-2 would be **potentially significant**.

## 5.6.10 MITIGATION MEASURES

The Project would include sustainable design features and comply with Title 24/CalGreen standards; however, approximately 60 percent of the GHG emissions would be generated by vehicle trips. Neither the Project Applicant nor the Lead Agency (City of Santa Ana) can substantively or materially reduce the vehicular-source GHG emissions.

## 5.6.3 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The impacts related to GHG emissions cannot be mitigated to a less-than-significant level. Therefore, impacts related to generation of GHG emissions and conflict with an applicable plan adopted for the purpose of reducing GHGs would be significant and unavoidable. Furthermore, impacts related to GHG emissions would be cumulatively significant and unavoidable.

## REFERENCES

California Air Pollution Control Officers Association Quantifying Greenhouse Gas Mitigation Measures, 2010. Accessed at: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>.

California Energy Commission 2019 Title 24 Building Energy Standards (CEC 2019). Accessed: <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency>

City of Santa Ana Climate Action Plan, 2015. Accessed at: <http://www.santa-ana.org/climateactionplan/>

Greenhouse Gas Analysis. Prepared by Urban Crossroads (GHG 2019).