



11.8 Greenhouse Gas and Energy Assessment



Greenhouse Gas Emissions and Energy Assessment

3800 Via Oro Project

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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 Code	California Green Building Standards Code
CPUC	California Public Utilities Commission
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
FAAA	Federal Clean Air Act
GHG	greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
I-710	Interstate 710
I-405	Interstate 405
LCFS	Low Carbon Fuel Standard
CH ₄	Methane
MMTCO ₂ e	million metric tons of carbon dioxide equivalent
MTCO ₂ e	million tons of carbon dioxide equivalent
MW	Megawatt
MWh	Megawatt Hour
NHTSA	National Highway Traffic Safety Administration
NF ₃	nitrogen trifluoride
N ₂ O	nitrous oxide
PFC	Perfluorocarbon
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SAFE	Safer Affordable Fuel-Efficient
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 ₆	sulfur hexafluoride
SP	Service Population
TAC	toxic air contaminants
U.S. EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

This report documents the results of a Greenhouse Gas (GHG) Emissions Assessment and Energy Assessment completed for the 3800 Via Oro Avenue Project (“Project” or “proposed Project”). The purpose of this analysis is to identify the GHG emissions and energy impacts associated with construction and operations of the Project and determine the level of impact the Project would have on the environment.

1.1 Project Location

The proposed Project Site is located at 3800 Via Oro Avenue in the City of Long Beach (City) and is identified as Assessor Parcel Number (APN) 7310-016-086. The Project Site is located in the northwestern portion of the City at the intersection of Via Oro Avenue and Hughes Way. The City lies within southeast Los Angeles County and is approximately 16 miles south of downtown Los Angeles. The City borders the Pacific Ocean to the south; the cities of Carson and Los Angeles to the west; the cities of Compton, Paramount, and Bellflower to the north; the cities of Lakewood, Hawaiian Gardens, and unincorporated Orange County to the east. The Los Angeles river is approximately 1,062 feet (0.01 miles) east of the Project Site. **Exhibit 1: Regional Location Map** depicts the proposed Project Site in a regional context.

The proposed Project Site is currently developed with a 36,697 square-foot (SF) television broadcast facility with 18 satellite dishes and a surface parking lot to the north of the building. The northeast corner of the site is vacant and undeveloped with disturbed non-native vegetation, and the southeast corner of the site is undeveloped and graded (solar panels covering this area were recently removed in June 2025). The Project Site is bounded by Interstate 710 (I-710) to the east, Hughes Way to the south, and Via Oro Avenue to the west. Existing industrial, manufacturing, commercial, and office uses are located to the north of the Project Site, commercial and office uses are located to the south of the Project Site, and commercial and office uses are located to the east of the Project Site. **Exhibit 2: Local Vicinity Map**, depicts the proposed Project Site in a local setting. The I-710, located immediately east of the Project Site, and Interstate 405 (I-405), located approximately 0.15 miles south of the site, provide regional access to the Project Site.

1.2 Project Description

The Project applicant proposes to demolish the existing structures, at-grade parking, landscaping, and satellites on the Project Site and redevelop the site with one to two speculative industrial buildings. Because the future tenants are currently unknown, and because a variety of industrial uses would be permitted, the analysis includes potential future land-use options. The proposed land uses are depicted on **Exhibit 3: Conceptual Site Plan**.

Manufacturing, Warehousing, and Office

The Project would include a 332,090 SF concrete tilt-up speculative industrial building that could be used for a mix of manufacturing, warehousing and office uses consistent with the existing PD-26 Subarea III zoning for the Project Site. The exact mix of uses is not yet known as there is no tenant identified. A mix of uses was determined to be both reasonably foreseeable and conservative in that it represents the most traffic generation from the potential uses that could occupy the proposed building. This mix of uses assumes that the primary use of the building would be manufacturing

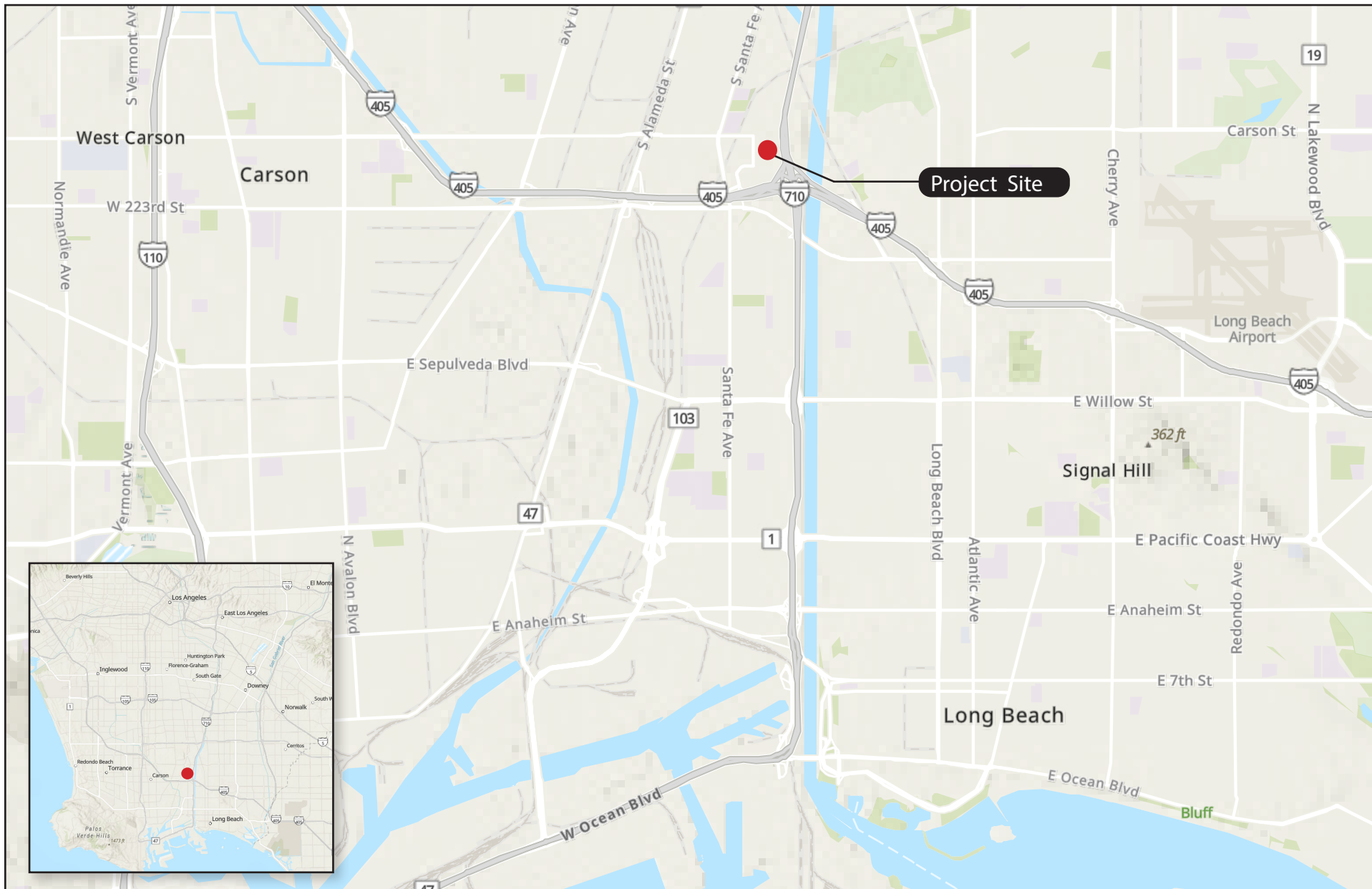
(152,433 SF), warehousing (155,657 SF), and ancillary office space (24,000 SF). The building would include a mezzanine and be 36 feet tall. The building would have a street setback of 25 feet and an interior and rear setback of 20 feet along Hughes Way.

The Project would include approximately 333 parking stalls, of which 256 would be standard stalls, 2 carpool and van accessible stalls, 6 standard accessible stalls, 2 van accessible stalls, and 67 Electric Vehicle (EV) capable stalls. The Project would provide approximately 34 bicycle parking spaces. The building would feature 38 truck high-dock doors along the northern side of the building.

Construction Activities

Construction of the Project would include the demolition of the existing structures, at-grade parking, landscaping, and satellite dishes at the Project Site. Construction is estimated to last for approximately 19 months. The Project could therefore be fully operational as early as June of 2028. The buildings are expected to be poured in place, tilt-up style concrete.

Because of the developed nature of the site, grading would likely be minimal, and soils would generally be balanced on site. The proposed haul route for demolition removal or delivery of supplies would be via Hughes Way which offers direct access to and from northbound I-405. Trucks would utilize Warnock Way and Santa Fe Avenue if coming from or to southbound I-405, which offers connections to the northbound and southbound lanes of the I-710. There would be approximately 9,900 tons of demolition and no anticipated import or export of soil.



SOURCE: ArcGIS Pro, 2025



EXHIBIT 1: Regional Location Map

3800 VIA ORO AVENUE PROJECT



SOURCE: Nearmap, 2025



EXHIBIT 2: Local Vicinity Map

3800 VIA ORO AVENUE PROJECT

2.0 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 back 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 (CO₂), methane (CH₄), and nitrous oxide (N₂O). 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 (SF₆), and nitrogen trifluoride (NF₃); 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 (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of a GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO₂ 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 CO₂ emissions remains stored in the atmosphere.¹ Table 1: Description of Greenhouse Gases describes the primary GHGs attributed to global climate change, including their physical properties.

¹ 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.

Table 1: Description of Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO ₂)	CO ₂ 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 ₂ 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 ₂ is variable because it is readily exchanged in the atmosphere. CO ₂ 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 ₂ O)	N ₂ O is largely attributable to agricultural practices and soil management. Primary human-related sources of N ₂ O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N ₂ O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N ₂ O is approximately 120 years. The Global Warming Potential of N ₂ O is 298.
Methane (CH ₄)	CH ₄ , 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, about 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH ₄ include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH ₄ is about 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 about 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 ₆)	SF ₆ 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 ₆ 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 ₃)	NF ₃ 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> , (https://www.epa.gov/ghgemissions/overview-greenhouse-gases), 2018; U.S. EPA, <i>Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016</i> , 2018; Intergovernmental Panel on Climate Change,	

Climate Change 2007: The Physical Science Basis, 2007; National Research Council, *Advancing the Science of Climate Change*, 2010; U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, April 2010.

2.2 Energy

Southern California Edison (SCE) provides electricity to the Project area. SCE is one of Los Angeles County's main energy utility provider, furnishing electricity for residential, commercial, industrial, and municipal uses. SCE's energy mix includes nuclear, solar, wind, and geothermal energy, with smaller contributions from biomass, waste, and hydroelectric power.² Long Beach Utilities provides natural gas services to the City.

² Southern California Edison (SCE), *2021 Power Content Label*, <https://www.sce.com/sites/default/files/custom-files/Web%20files/2021%20Power%20Content%20Label.pdf>. Accessed: August 11, 2025.

3.0 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.

Clean Air Act

In April 2007, in *Massachusetts v. EPA*, the U.S. Supreme Court directed the Administrator of the U.S. Environmental Protection Agency (U.S. EPA) to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the U.S. EPA Administrator was directed to follow the language of Section 202(a) of the Federal Clean Air Act (FCAA). In December 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the FCAA:

- Elevated concentrations of GHGs - CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the “endangerment finding.”
- The combined emissions of GHGs - CO₂, CH₄, N₂O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the “cause or contribute finding.”

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the FCAA.

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.

Additional provisions of the Energy Independence and Security Act (EISA) address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”

U.S. Environmental Protection Agency Endangerment Finding

The U.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 U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) constitute a threat to public health and welfare. Thus, it is the Supreme Court’s interpretation of the existing FCAA and the U.S. EPA’s assessment of the scientific evidence that form the basis for the U.S. EPA’s regulatory actions. As of August 2025, the U.S. EPA has released a proposal to rescind the Endangerment Finding but there has been no formal decision.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the U.S. 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 U.S. 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, U.S. 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 U.S. 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 CO₂ 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 U.S. EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the U.S. EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ 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 U.S. EPA, this regulatory program will reduce GHG

emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.³

In August 2016, the U.S. 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 CO₂ 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.

On September 27, 2019, the U.S. EPA and the NHTSA published the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program” (84 Fed. Reg. 51,310 (Sept. 27, 2019)).⁴ The SAFE Rule (Part One) revoked California’s authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. On March 31, 2020, the U.S. EPA and NHTSA finalized rulemaking for SAFE Part Two sets CO₂ emissions standards and corporate average fuel economy (CAFE) standards for passenger vehicles and light duty trucks, covering model years 2021-2026. The current U.S. EPA administration repealed SAFE Rule Part One, effective January 28, 2022, and is reconsidering Part Two.

In December 2021, the U.S. EPA finalized federal GHG emissions standards for passenger cars and light trucks for Model Years 2023 through 2026. These standards are the strongest vehicle emissions standards ever established for the light-duty vehicle sector and are based on sound science and grounded in a rigorous assessment of current and future technologies. The updated standards will result in avoiding more than three billion tons of GHG emissions through 2050.⁵

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 carbon dioxide equivalent (CO₂e) in the world and produced 369 million gross metric tons (MMT) of CO₂e in 2020.⁶ The transportation sector is the State’s largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

³ U.S. EPA and NHTSA, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium and Heavy-Duty Engines and Vehicles – Phase 2, 2016. Available at: <https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf>. Accessed: August 11, 2025.

⁴ U.S. EPA and NHTSA, Federal Register, Vol. 84, No. 188, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, September 27, 2019. Available at: <https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-20672.pdf>. Accessed: August 11, 2025.

⁵ U.S. EPA, *Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026*, 2021. Available at: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions>. Accessed: August 11, 2025.

⁶ California Air Resources Board, Current California GHG Emissions Inventory Data, 2000-2020 GHG inventory (2022 Edition), <https://ww2.arb.ca.gov/ghg-inventory-data>, Accessed: August 11, 2025.

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 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

Adopted December 15, 2022, CARB's 2022 *Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. To achieve the targets of AB 1279, the 2022 Scoping Plan relies on existing and emerging fossil fuel alternatives and clean technologies, as well as carbon capture and storage. Specifically, the 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high Global Warming Potentials; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen.

The key elements of the 2022 CARB Scoping Plan focus on transportation. Specifically, the 2022 Scoping Plan aims to rapidly move towards zero-emission transportation (i.e., electrifying cars, buses, trains, and trucks), which constitutes California's single largest source of GHGs. The regulations that impact the transportation sector are adopted and enforced by CARB on vehicle manufacturers and are outside the jurisdiction and control of local governments. The 2022 Scoping Plan accelerates development of new regulations as well as amendments to strengthen regulations and programs already in place.

Included in the 2022 Scoping Plan is a set of Local Actions (2022 Scoping Plan Appendix D) aimed at providing local jurisdictions with recommendations to reduce GHGs and assisting the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. Appendix D to the 2022 Scoping Plan is not regulatory, is not exhaustive, and does not include everything local governments can implement to support the State's climate goals. It focuses primarily on climate action plans (CAPs or CAAPs) and local authority over new residential development. It includes a section on evaluating plan-level and project-level alignment with the State's Climate Goals in California Environmental Quality Act (CEQA) GHG analyses. In this section, CARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. CARB specifically states that Section 3 of Appendix D, which discusses land use plans and development projects, does not address land uses other than residential and mixed-

use residential such as industrial. However, CARB plans to explore new approaches for other land use types in the future.

Renewable Portfolio Standard. In 2002, California established its Renewable Portfolio Standard (RPS) program with the goal of increasing the annual percentage of renewable energy in the State's electricity mix by the equivalent of at least 1 percent of sales, with an aggregate total of 20 percent by 2017.⁷ Since then, various pieces of legislation have provided further goals. Signed in 2018, Senate Bill (SB) 100 revised the program's goal to achieve the 50 percent renewable resources target by December 31, 2026, and a 60 percent renewable resources target by December 31, 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

CARB Advanced Clean Truck Regulation

CARB adopted the Advanced Clean Truck Regulation in June 2020 requiring truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, every new truck sold in California is required to be zero-emission. This rule directly addresses disproportionate health and pollution burdens and puts California on the path for an all zero-emission short-haul drayage fleet in ports and railyards by 2035, and zero-emission "last-mile" delivery trucks and vans by 2040. The Advanced Clean Truck Regulation accelerates the transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8. The regulation has two components including a manufacturer sales requirement, and a reporting requirement:

Zero-Emission Truck Sales: Manufacturers who certify Class 2b through 8 chassis or complete vehicles with combustion engines are required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales need to be 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales.

Company and Fleet Reporting: Large employers including retailers, manufacturers, brokers, and others would be required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, would be required to report about their existing fleet operations. This information would help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

On June 12, 2025, a federal resolution was signed that revoked the EPA waiver that allowed California agencies to enforce the Advanced Clean Truck initiative. Adherence to the Advanced Clean Truck Regulation, although unenforceable, continues in part through voluntary agreements between manufacturers and CARB, such as the 2023 Clean Truck Partnership.

⁷ The Renewable Portfolio Standard is a flexible, market-driven policy to ensure that the public benefits of wind, solar, biomass, and geothermal energy continue to be realized as electricity markets become more competitive. The policy ensures that a minimum amount of renewable energy is included in the portfolio of electricity resources serving a state or country.

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. In 2022, CARB published the 2022 Scoping Plan, which is discussed above.

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 (RTP), 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.

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 U.S. EPA's denial of an implementation waiver. The U.S. EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards passenger vehicle and light duty truck 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 CO₂e 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 CO₂ per megawatt-hour.

SB 1078, SB 107, and SBX1-2 (Renewable Electricity Standards)

SB 1078 (2002) requires California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 (2006) 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. SBX1-2, which 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 25 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)

The Cap-and-Trade program covers approximately 80 percent of California's GHG emissions⁸. The statewide cap for GHG emissions from the capped sectors (i.e., electricity generation, industrial sources, petroleum refining, and cement production) commenced in 2013 and would decline approximately three percent each year, achieving GHG emission reductions throughout the program's duration. 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 TACs 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

⁸ California Air Resources Board, *Cap-and-Trade Program*, <https://ww2.arb.ca.gov/our-work/programs/cap-and-trade/program/about>, Accessed: August 11, 2025.

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 and SB 1020 (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. SB 1020 provides additional goals for the path to the 2045 goal of 100 percent clean electricity retail sales. It creates a target of 90 percent clean electricity retail sales by 2035 and 95 percent clean electricity retail sales by 2040.

AB 1346 (Air Pollution: Small Off-Road Engines)

Signed into law in October 2021, AB 1346 requires CARB, to adopt cost-effective and technologically feasible regulations to prohibit engine exhaust and evaporative emissions from new small off-road engines, consistent with federal law, by July 1, 2022. The bill requires CARB to identify and, to the extent feasible, make available funding for commercial rebates or similar incentive funding as part of any updates to existing applicable funding program guidelines to local air pollution control districts and air quality management districts to implement to support the transition to zero-emission small off-road equipment operations.

AB 1279 (The California Climate Crisis Act)

AB 1279 establishes the policy of the State to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO₂ removal solutions and carbon capture, utilization, and storage technologies.

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 tone for the State 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 GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG 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 CO₂e (MMTCo₂e). 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.

Executive Order N-79-20. Issued on September 23, 2020, Executive Order N-79-20 established a goal to end the sales of new internal combustion engine vehicles in the state as soon as possible, and no

later than 2035, and continue to phaseout fossil-fueled cars and trucks. By setting a course to end sales of internal combustion passenger vehicles by 2035, the Governor's Executive Order establishes a target for the transportation sector that helps put the state on a path to carbon neutrality by 2045. It is important to note that the Executive Order focuses on new vehicle sales for automakers, and therefore does not require Californians to give up the existing cars and trucks they already own.

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.

In December 2024, the 2025 Title 24 Energy Code was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. The 2025 Title 24 Energy Code encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and more. Buildings whose permit applications are applied for on or after January 1, 2026, must comply with the 2025 Title 24 Energy Code.

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 CALGreen Code was adopted in December 2024 (2025 CALGreen Code) and continues to improve upon the existing standards for new construction of, and additions and alterations to, residential and non-residential buildings. Buildings whose permit applications are applied for on or after January 1, 2026, must comply with the 2025 CALGreen Code.

Renewable Energy Standards

In 2002, California established its Renewable Portfolio Standard program⁹ with the goal of increasing the annual percentage of renewable energy in the state's electricity mix by the equivalent of at least 1 percent of sales, with an aggregate total of 20 percent by 2017. The California Public Utilities Commission subsequently accelerated that goal to 2010 for retail sellers of electricity (Public Utilities Code Section 399.15(b)(1)). Then-Governor Schwarzenegger signed Executive Order S-14-08 in 2008, increasing the target to 33 percent renewable energy by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing Executive Order S-21-09, which directs the California Air Resources Board under its AB 32 authority to enact regulations to help the State meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020. In September 2010, the California Air Resources Board adopted its Renewable Electricity Standard regulations, which require all of the State's load-serving entities to meet this target. In October 2015, then-Governor Brown signed into legislation Senate Bill 350, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Signed in 2018, SB 100 Modified the goal of the program to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

As the retail electricity provider for the Project, PG&E is subject to the California Renewables Portfolio Standard (SB 100, SB 1020) and related CPUC regulations, which require increasing percentages of renewable and zero-carbon electricity in its supply mix, culminating in 100 percent clean electricity retail sales by 2045. PG&E is also regulated under the CPUC's General Orders for the safe design and installation of new distribution infrastructure, which would apply to the new poles installed to meet the project's increased electrical demand. These requirements influence the carbon intensity of electricity delivered to the project and ensure compliance with state safety and reliability standards for electrical facilities.

California Vehicles Regulations

Advanced Clean Cars I and II. Advanced Clean Cars combines several regulations into one package including the Low-Emission Vehicle (LEV) criteria and greenhouse gas regulations and the zero-emission vehicle (ZEV) regulation. Advanced Clean Cars I was adopted in 2012 and Advanced Clean Cars II was adopted in 2022. These regulations rapidly scale down emissions of light-duty passenger cars, pickup trucks and SUVs and require an increased number of zero-emission vehicles to meet air quality and climate change emissions goals. By 2035 all new passenger cars, trucks and SUVs sold in California will be zero emissions. The Advanced Clean Cars II regulations take the State's already growing zero-emission vehicle market and robust motor vehicle emission control rules and augments them to meet more aggressive tailpipe emissions standards and ramp up to 100% zero-emission vehicles.

⁹ The Renewable Portfolio Standard is a flexible, market-driven policy to ensure that the public benefits of wind, solar, biomass, and geothermal energy continue to be realized as electricity markets become more competitive. The policy ensures that a minimum amount of renewable energy is included in the portfolio of electricity resources serving a state or country.

CARB Advanced Clean Fleets Regulation. CARB approved Advanced Clean Fleets Regulation (ACF) on April 28, 2023, requires fleet owners to begin transitioning toward ZEVs starting in 2024. Due to the impact that truck traffic has on residents living near heavily trafficked corridors, drayage trucks will need to be zero emissions by 2035. All other fleet owners have the option to transition a percentage of their vehicles to meet expected zero-emission milestones, which gives owners the flexibility to continue operating combustion-powered vehicles as needed during the move toward cleaner technology.

Low Carbon Fuel Standard. The LCFS, established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with 0.25 percent in 2011 and culminating in a 10-percent total reduction in 2020. Petroleum importers, refiners and wholesalers can either develop their own low carbon fuel products or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas and hydrogen.

On January 13, 2025, CARB withdrew its requests for CAA waivers from the U.S. EPA needed to support four recently adopted vehicle emissions regulations: 1) the Advanced Clean Fleets Regulations; 2) the In-Use Locomotive Regulations; 3) part of the Commercial Harbor Craft and Ocean-Going Vessels At-Berth Regulations; and 4) part of the Transport Refrigeration Unit Engine Standards Regulations. Therefore, implementation of these regulations is currently unknown. The ACT regulation was granted a separate waiver in 2023 by the Biden administration. On May 22, 2025, the U.S. Senate voted to revoke the waiver granted by the Biden administration for California's ACT rule (as well as the Advanced Clean Cars (ACC) II program and Heavy-Duty Omnibus regulation). On June 12, 2025, President Trump formally nullified California's ACT rule and ACC II program (Congressional Resolutions H.J. Res 87 and H.J. Res 88, respectively). Implementation is currently unknown. EMFAC2021 emissions projections assumed implementation of the Advanced Clean Trucks (ACT) Regulation and the Heavy-Duty Low NOX Omnibus Regulation. These regulations were disapproved by Congressional Resolutions H.J. Res 87 and H.J. Res 89, respectively. The resolutions were signed by the President on June 12, 2025. These resolutions, along with H.J. Res. 88 (revoking federal light-duty vehicle GHG standards), nullify California regulations that had been authorized by U.S. EPA waivers under the Clean Air Act. CARB is currently evaluating the impact of the actions (H.J. Res 87, H.J. Res 88, and H.J. Res 89) under the Congressional Review Act, but has not yet provided emissions modeling guidance.

3.3 Regional

Southern California Association of Governments

On September 3, 2020, Southern California Association of Governments' (SCAG's) Regional Council adopted *Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy [2020 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.

On April 4, 2024, SCAG's Regional Council adopted *Connect SoCal (2024 Regional Transportation Plan/Sustainable Communities Strategy [2024 RTP/SCS])*. Through full implementation, the 2024 RTP/SCS would reduce traffic congestion, improve air quality, and improve the region's long-term economic vitality. In addition, new strategies for addressing the housing crisis, adapting to climate change and investing in underserved communities are included in the 2024 RTP/SCS. Similar to the 2020 RTP/SCS, this 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 regarding the development, integrated management, and operation of transportation systems and facilities that would function as an intermodal transportation network. The 2024 RTP/SCS is a long-term plan that invests in a healthy, prosperous, accessible, and connected future for the six counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura

3.4 Local

City of Long Beach Climate Action and Adaptation Plan (CAAP)

The CAAP is intended to be utilized for purposes of GHG streamlining and to satisfy the requirements needed under *CEQA Guidelines Section 15183* to be considered a qualified GHG reduction plan. Because the City of Long Beach CAAP includes a baseline emissions inventory and projects future emissions, identifies a community-wide reduction target, identifies strategies and measures to meet the reduction target, monitors the effectiveness of reduction measures, and was adopted in a public process subject to environmental review, the CAAP is consistent with the requirements of *CEQA Guidelines Section 15183* and is a qualified GHG reduction plan. Overall, the CAAP provides a framework for the City to reduce community-wide GHG emissions and comply with state regulations (i.e., SB 32), and to also address the effects of climate change on the community. Under the CAAP, the City aims to achieve a per service population (SP) emissions target of 3.04 MTCO₂e/SP for year 2030, which would coincide with the emissions reduction target established under SB 32. To achieve this target, the City would be required to reduce emissions by 192,659 MTCO₂e relative to the business as usual (BAU) emissions forecast for year 2030. In addition to the year 2030 target, the CAAP also includes a long-term net carbon neutrality goal for year 2045. This goal would require a reduction in GHG of 1,513,047 MTCO₂e. To meet the 2030 reduction target, the CAAP includes 21 mitigation actions covering the transportation, building energy, and waste sectors. Full implementation of these mitigation actions would reduce emissions in the transportation, building energy, and waste sectors by 8 percent, 68 percent, and 24 percent, respectively. In addition to mitigation actions, the CAAP also includes 40 various adaptation actions that address extreme heat, air quality, drought, and sea level rise and flooding. The City approved the CAAP on August 16, 2022.

The City's CAAP is intended to be utilized for purposes of GHG streamlining and to satisfy the requirements needed under *CEQA Guidelines Section 15183* to be considered a qualified GHG reduction plan. Because the CAAP includes a baseline emissions inventory and projects future emissions, identifies a community-wide reduction target, identifies strategies and measures to meet the reduction target, monitors the effectiveness of reduction measures, and was adopted in a public

process subject to environmental review, the CAAP is consistent with the requirements of CEQA Guidelines Section 15183 and is a qualified GHG reduction plan.¹⁰

The following CAAP actions are relevant and applicable to the Project:¹¹

- BE-1:** Provide access to renewably generated electricity.
- BE-2:** Increase use of Solar Power.
- BE-7:** Update building codes to incentivize electric new residential and commercial buildings.
- T-2:** Expand and improve pedestrian infrastructure citywide.
- T-3:** Increase bikeway infrastructure Citywide.
- T-8:** Increase density and mixing of land uses.
- T-9:** Integrate SB 743 planning with the CAAP Process.
- W-2:** Ensure compliance with State Law Requirements for Multifamily and commercial property recycling programs.

City of Long Beach General Plan

The *City of Long Beach General Plan* (General Plan) is a long-range planning document that establishes the goals and policies related to the future and vision of the community. The following policies focusing on GHG reduction and energy usage are applicable to the proposed Project:

Land Use Element

- Policy 1-3:** Require sustainable design strategies to be integrated into public and private development projects.
- Policy 1-4:** Require electric vehicle charging stations to be installed in new commercial, industrial, institutional, and multiple-family residential development projects. Require that all parking for single-unit and two-unit residential development projects be capable of supporting future electric vehicle supply equipment.
- Policy 1-6:** Require that new building construction incorporate solar panels, vegetated surface, high albedo surface and/or similar roof structures to reduce net energy usage and reduce the heat island effect.

¹⁰ City of Long Beach, *Long Beach Climate Action and Adaptation Plan*, Adopted in August 2022. https://www.longbeach.gov/globalassets/lbcd/media-library/documents/planning/lb-cap/adopted-lb-cap_-aug-2022. Accessed: August 11, 2025.

¹¹ City of Long Beach, *Long Beach Climate Action Plan*, Adopted August 2022, https://www.longbeach.gov/globalassets/lbcd/media-library/documents/planning/lb-cap/adopted-lb-cap_-aug-2022. Accessed: August 11, 2025

Policy 5-1: Require safe, attractive and environmentally sustainable design, construction and operation of all buildings, landscapes and parking facilities in employment and educational centers.

Policy 5-2: Connect employment and higher education centers to other activity centers and adjacent neighborhoods via walking, biking and transit routes.

Air Quality Element

Policy 2.6.2: *Fleet Conversion to Clean Fuels.* Play a leadership role in the conversion to clean fuels by promoting the increased use of compressed natural gas (CNG), electric vehicles, and other alternative fuels.

Policy 7.1: *Energy Consumption.* Reduce energy consumption through conservation improvements and requirements.

Mobility Element

Policy 6-15: Encourage and provide incentives for commercial, office, and industrial development to provide preferred parking for carpools, vanpools, electric vehicles, and flex cars.

4.0 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 Thresholds and Significance Criteria

Greenhouse Gas Emissions

Addressing GHG emissions generation impacts requires an agency to determine what constitutes a significant impact. The amendments to the 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 will 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" the Project's GHG emissions.¹²

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

- GHG-1** Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- GHG-2** Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

A qualified greenhouse gas reduction plan adopted by a local jurisdiction shall include the following elements as described in the State CEQA Guidelines Section 15183.5(b)(1):

- Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
- Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
- Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a Project-by-Project basis, would collectively achieve the specified emissions level;
- Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels; and
- Be adopted in a public process following environmental review.

The City of Long Beach's Climate Action Plan meets these requirements, and therefore individual projects can tier from the qualified GHG reduction plan. The Long Beach CAAP aims to reduce the

¹² 14 California Code of Regulations, Section 15064.4a

City's GHG emissions by 40 percent below 1990 levels by 2030 and net carbon neutral by 2045 (consistent with the State's AB 1279 goals). The CAAP provides a consistency checklist and has established consistency with their checklist would result in a less than cumulatively considerable impact. The City does not have a construction-related GHG emission threshold. The CAAP meets the requirements of CEQA Guidelines section 15183.5.

Energy

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:

- ENG-1** Result in potentially significant environmental impact due to wasteful, inefficient or unnecessary consumption of energy resources, during project construction or operation
- ENG-2** Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

4.2 Methodology

Greenhouse Gas

The Project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2022.1.1.37 (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. GHG emissions during construction 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 operational-related GHG emissions would be generated by vehicular traffic, area sources (e.g., landscaping maintenance and consumer products), electrical generation, water supply and wastewater treatment, generators, and solid waste.

Energy

The electricity usage is based on Project-specific estimates and CalEEMod defaults. No natural gas is proposed. Additionally, mobile source calculations are based on vehicle miles traveled (VMT) and fleet-average fuel consumption (in gallons per mile) from the California Air Resources Board Emission Factor Model (EMFAC2021) for operational year 2028. Generator fuel usage is based on specifications provided by Applicant.

5.0 POTENTIAL GREENHOUSE GAS IMPACTS AND MITIGATION

5.1 Greenhouse Gas Emissions

Threshold GHG-1 Would the Project generate GHG emissions, either directly or indirectly, that could have a significant impact on the environment?

Short-Term Construction Greenhouse Gas Emissions

The Project would result in direct emissions of GHGs from construction. The approximate quantity of annual GHG emissions generated by construction equipment utilized to build the Project is depicted in [Table 2: Construction-Related Greenhouse Gas Emissions](#).

Table 2: Construction-Related Greenhouse Gas Emissions	
Category	MTCO₂e per Year
Construction (2026)	176
Construction (2027)	708
Construction (2028)	185
Total Construction Emissions	1,069
<i>30-Year Amortized Construction</i>	36
Source: CalEEMod version 2022.1.1.37. Refer to Appendix A for model outputs.	

As shown, the Project would result in the generation of approximately 1,069 MTCO₂e over the course of construction. Construction GHG emissions are typically summed and amortized over a 30-year period, then added to the operational emissions.¹³ The amortized Project construction emissions would be 36 MTCO₂e per year. Once construction is complete, the generation of these GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions occur over the life of the Project. GHG emissions would result from direct emissions such as Project generated vehicular traffic 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, and wastewater from the Project, the emissions associated with solid waste generated from the Project, and any fugitive refrigerants from air conditioning or refrigerators.

Most of the Project's emissions are from energy and mobile sources which would be further reduced by implementation of current state programs. It should be noted that the Project and the City have no control over vehicle emissions. However, these emissions would decline in the future due to statewide measures including the reduction in the carbon content of fuels, CARB's advanced clean car program, CARB's mobile source strategy, fuel efficiency standards, cleaner technology, and fleet turnover. Additionally, the Southern California Association of Government's (SCAG's) *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal)* is also expected

¹³ The 30-year amortization period is based on the standard 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).

to help California reach its GHG reduction goals, with reductions in per capita transportation emissions of 19 percent by 2035.¹⁴ Accordingly, the Project does not interfere with the State's efforts to reduce GHG emissions in 2030. Project operations would benefit from the implementation of current and potential future energy regulations including the SB 100 renewable electricity portfolio target of 60 percent renewable energy by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

As noted above, the 2025 Energy Code became effective on January 1, 2026 and strengthens ventilation standards, includes new electric heat pump requirements, promotes electric-ready requirements for new homes (including the addition of circuitry for electric appliances, battery storage panels, and dedicated infrastructure), and expands solar photovoltaic and battery storage standards. The Project would be required to comply with the 2025 Energy Code.¹⁵

The Project would also comply with the appliance energy efficiency standards in Title 20 of the California Code of Regulations. The Title 20 standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances. The Project would be constructed according to the 2025 CALGreen standards, which includes water conserving plumbing fixtures and fittings, electric heat pump technology, electric-ready requirements when natural gas is installed, and strengthening ventilation standards.

At the state and global level, improvements in technology, policy, and social behavior can also influence and reduce operational emissions generated by a project. The state is currently on a pathway to achieving the Renewable Portfolio Standards goal of 60 percent renewables by 2030 per SB 100 and 100 percent clean electricity by 2045 per AB 1279. Despite these goals, the majority of the Project's emissions would still be from mobile and energy sources. Future mobile source emissions are greatly dependent on changes in vehicle technology, fuels, and social behavior, which can be influenced by policies to varying degrees. This is assumed to also be applicable to the Project vehicle fleet, absent data that may suggest otherwise.

The primary source of Project emissions would occur from mobile sources and energy sources. CARB is directly responsible for regulating mobile and transportation source emissions in the State. Regarding the first parameter, California addresses emissions control technology through a variety of legislation and regulatory schemes, including the State's Low Carbon Fuel Standard (Executive Order S-01-07) (LCFS), a regulatory program designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. The regulatory standards are expressed in terms of the "carbon intensity" of gasoline and diesel fuel and their substitutes.

The City of Long Beach *Climate Action and Adaptation Plan (CAAP)* was adopted on August 16, 2022, and is a comprehensive planning document outlining the City's proposed approach both to address climate impacts on Long Beach and to reduce Long Beach's impact on the climate by reducing GHG

¹⁴ Southern California Association of Governments, *SB 375 Regional Plan Climate Targets*, <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets>.

¹⁵ California Energy Commission, *2025 Building Energy Efficiency Standards*, 2025. Available at: <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2025-building-energy-efficiency>.

emissions. The Project's consistency with the CAAP is shown in [Appendix C: CAAP Checklist](#). The CAAP has established consistency with their checklist would result in a less than cumulatively considerable impact. The City does not have a construction-related GHG emission threshold, so quantified emissions are disclosed for informational purposes only. With incorporation of Mitigation Measure (MM) GHG-1 below, the Project would incorporate Tier 1 (required) measures to ensure consistency with the CAAP checklist and the City's goal to reduce GHG emissions by 40 percent below 1990 levels by 2040 and achieve net carbon neutrality by 2045.

MM GHG-1 Prior to obtaining building permits, the Project Applicant shall incorporate Tier 1 GHG emissions reduction actions to demonstrate consistency with the City of Long Beach CAAP Checklist for new developments. The proposed Project would incorporate the following actions:

- a. Pursuant to the CAAP, the Project must utilize 100 percent zero-carbon electricity on-site. The Project shall comply with the following options:
 1. Install on-site renewable energy systems to meet 100 percent of the projected energy demand of the building systems based on the proposed use(s) and any major equipment installation for the initial development of the building as shown in the "close to final" construction drawing submitted for plan check,
 2. Install solar ready rooftop where there is available rooftop area after the 100% of the on-site renewable energy systems have been installed to accommodate future projected energy demand increase,
 3. Verify that both installation from (1) and/or (2) are completed prior to or concurrent with issuance of a temporary certificate of occupancy or certificate of occupancy, whichever comes first, and
 4. Install additional on-site renewable energy systems to meet 100 percent of any increase to the projected energy demand of the building systems from future tenant improvements, change of uses, and/or additions to the initial development of the building prior to issuance of a temporary certificate of occupancy or certificate of occupancy, whichever comes first or the proposed Project shall obtain energy from a community solar system program or other zero-carbon energy program for the portion of the renewable energy systems that is not installed on-site

If energy from a community solar program or other zero-carbon energy program is unavailable to fulfill the proposed Project's obligations under 4 above, then the proposed Project shall provide proof of purchase of GHG reduction credits to offset the on-site electrical demand's estimated metric ton of carbon dioxide equivalent.

If offset reduction credits are utilized, the carbon offset credits used for this purpose shall originate from a voluntary carbon credit registry or

registries that The Climate Registry recognizes, and shall be registered, transferred, and retired at such registries. The offsets will also be subjected to the protocols of each registry which must demonstrate that the carbon offset credits provided are real, permanent, additional, and have been independently verified as adhering to its applicable project protocols. The offset credits shall be local (within the South Coast Air District) or in-State carbon offset credits, if available. If sufficient local and in-State offset credits are not available, the applicant will purchase CARB conforming or equivalent national offset credits registered with an approved registry. As and when the credits are retired, the Applicant shall provide the City with the unique identifier of those credits showing that they have been retired and accepted by The Climate Registry.

- b. The applicant/developer shall provide short and long-term bicycle parking for at least five percent of motorized vehicle capacity and nothing less than CALGreen requirements, whichever is more restrictive.
- c. The applicant/developer shall incorporate electric vehicle parking spaces consistent with LBMC 18.47.050 and CALGreen Section 5.106.5.3—Electric vehicle (EV) charging. At least 20 percent of all parking spaces shall be EV capable spaces and at least 50 percent of these EV capable spaces must be equipped with charging stations.
- d. The applicant/developer shall comply with the City of Long Beach TDM Ordinance for nonresidential development of 100,000 square feet by the following:
 - A safe and convenient zone in which vanpool and carpool vehicles may deliver or board their passengers.
 - Sidewalks or other designated pathways following direct and safe routes from the external pedestrian circulation system to each building in the development.
 - Safe and convenient access from the external circulation system to bicycle parking facilities on-site.
- e. The applicant/developer shall utilize electric lawn and gardening equipment for all landscaping activities.
- f. The applicant/developer shall implement waste GHG emissions reduction actions by the following:
 - Comply with all Mandatory Construction & Demolition (C&D) Recycling Program Requirements, including Section 18.67.100.
 - Provide substantial storage, collection, and loading of recyclables in a manner that is convenient and safe for all users of the building. Ensure

there are sufficient sizes and amount of collection containers for recyclables. Containers must be kept clean, be clearly labeled, and are co-located next to any other solid waste receptacles. Ensure sufficient pick up of collection containers to meet the needs of the occupants.

- Provide proper storage, collection, and loading of organics in a manner that is convenient and safe for all users of the building. Ensure there are sufficient sizes of collection containers for organics. Containers must be kept clean, be clearly labeled, and are co-located next to any other solid waste receptacles. Ensure sufficient pick up of collection containers to meet the needs of the occupants.
- The proposed Project shall include space for multi-stream collection containers for both recycling and organics in any location where a solid waste container is traditionally housed. This includes both outdoor collection containers serviced by a waste hauler or indoor collection containers utilized by occupants. The proposed Project must provide educational material and training to occupants and tenants in how to properly separate recyclables from all other solid waste and place recyclables in a separate container designated for recycling and organics.
- Ensure that all occupants and tenants of the proposed Project separate recyclables from all other refuse and place recyclables in a separate container designated for recycling and composting.
- Ensure containers are audited annually to ensure proper service levels and to check for contamination. Report findings back to occupants within 30 days and to the City as requested.
- Work with waste hauler to provide educational material to tenants at least on an annual basis.
- Provide compliance data to the City as required for any current auditing program.

Prior to the issuance of building permits, the project Applicant shall provide documentation (e.g., building plans, site plans, or program enrollment commitments) to the City of Long Beach Community Development Department to verify implementation of the design requirements specified in this mitigation measure. At construction completion and prior to the issuance of the certificate of occupancy, the City of Long Beach Community Development Department shall verify implementation of these design requirements with documentation proof and/or a site inspection.

Mitigation Measures: MM GHG-1.

Level of Significance: Less than significant impact with mitigation incorporated.

5.2 Greenhouse Gas Reduction Plan Compliance

Threshold GHG-2 Would the Project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions?

As discussed in the CAAP checklist for the Project, the Project would be consistent with City goals and policies related to building energy, waste, transportation, drought, sea level rise, and water efficiency. See [Appendix C: CAAP Checklist](#) for more details.

SCAG RTP/SCS Consistency

On April 4, 2024 the SCAG Regional Council adopted *Connect SoCal (2024-2050 Regional Transportation Plan/ Sustainable Communities Strategy [RTP/SCS])*. The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS embodies a collective vision for the region’s future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. Under SB 375, SCAG’s 2024-2050 RTP/SCS establishes GHG emissions goals to reduce GHG emissions in the region by eight percent from 2005 levels by 2020 and by 19 percent by 2035. The RTP/SCS is a long-range vision plan that balances future mobility and housing needs with economic, environmental, and public health goals.

The 2024-2050 RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emissions reduction goals and Federal Clean Air Act requirements, increased housing production, improved equity and resilience, the preservation of natural lands, improvement of public health, increased transportation safety, support for the region’s vital goods movement industries and more efficient use of resources. GHG emissions resulting from land development-related mobile sources are the most potent source of emissions, and therefore Project comparison to the 2024-2050 RTP/SCS is an appropriate indicator of whether the Project would inhibit the post-2020 GHG reduction goals promulgated by the state.

The consistency of the Project with the RTP/SCS goals is analyzed in detail in [Table 3: 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy Consistency](#).

Table 3: 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy Consistency	
Goals	Compliance
Mobility: Build and maintain an integrated multimodal transportation network.	
Support investments that are well-maintained and operated, coordinated, resilient, and result in improved safety, improved air quality and minimized greenhouse gas emissions	Consistent: This measure is to be taken at the regional level. Project implementation would not conflict with the goal. As discussed above, the Project would be constructed in accordance with the Title 24 of the California Building Standards Code, Title 20 of the California Code of Regulations, and CALGreen Code standards. Furthermore, the Project would include facilities that support electric charging station. With implementation of MM GHG-1, the Project would incorporate zero-carbon electricity,

Table 3: 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy Consistency	
Goals	Compliance
	electric vehicle and bicycle parking, and incorporate waste GHG emissions reduction actions.
Ensure that reliable, accessible, affordable, and appealing travel options are readily available, while striving to enhance equity in the offerings in high-need communities	Consistent: This measure is to be taken at the regional level. Project implementation would not conflict with the goal. The Project proposes a concrete speculative industrial building on an infill site in urban area near existing transit routes. With implementation of MM GHG-1, the Project would offer both short and long-term bicycle parking, supporting access to alternative travel options.
Support planning for people of all ages, abilities, and backgrounds	Consistent: This measure is to be taken at the regional level. Project implementation would not conflict with the goal. The Project would provide opportunities for local employment.
Communities: Develop, connect, and sustain communities that are livable and thriving	
Create human-centered communities in urban, suburban, and rural settings to increase mobility options and reduce travel distances	Consistent: The Project proposes land use options on an infill site in an urban area and the Project Site is located in a Transit Priority Area (TPA). The Project would increase employment opportunities in an area designated for industrial uses.
Produce and preserve diverse housing types in an effort to improve affordability, accessibility, and opportunities for all households	Not Applicable: The Project would be an industrial project and would not provide housing.
Environment: Create a healthy region for the people of today and tomorrow	
Develop communities that are resilient and can mitigate, adapt to, and respond to chronic and acute stresses and disruptions, such as climate change	Consistent. The Project would redevelop an infill site in urban area, and the Project Site is located in a TPA. The Project would increase employment opportunities. The Project would be constructed in accordance with Title 24 of the California Building Standards Code, Title 20 of the California Code of Regulations, and CALGreen Code standards. In addition, the Project would comply with all applicable efficiency requirements and provide EV chargers for employees. With implementation of MM GHG-1, the Project would incorporate zero-carbon electricity, electric vehicle and bicycle parking, and incorporate waste GHG emissions reduction actions.
Integrate the region's development pattern and transportation network to improve air quality, reduce greenhouse gas emissions and enable more sustainable use of energy and water	Consistent. Although the Project does not include transportation improvements, the Project Site is located within an urban area near public transit services. The Project location would reduce trip lengths, which would reduce GHG and air quality emissions. The reduction of energy use, improvement of air quality, and promotion of more environmentally sustainable development are encouraged through the development of alternative transportation methods, green design techniques for buildings, and other energy-reducing techniques, such as, compliance with the provisions of the California Building Energy Efficiency Standards and the CALGreen Code. With implementation of MM GHG-1, the Project would incorporate zero-carbon electricity, electric vehicle and bicycle parking, and incorporate waste GHG

Table 3: 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy Consistency	
Goals	Compliance
	emissions reduction actions.
Conserve the region's resources	Consistent. The Project would develop an infill site that is not designated for agricultural uses, natural resources, or conservation. Project implementation would not result in a loss of the region's resources.
Economy: Support a sustainable, efficient, and productive regional economic environment that provides opportunities for all people in the region	
Improve access to jobs and educational resources	Consistent. The Project would develop industrial uses, promoting local employment opportunities.
Advance a resilient and efficient goods movement system that supports the economic vitality of the region, attainment of clean air and quality of life for our communities	Consistent: This measure is to be taken at the regional level. Project implementation would not conflict with the goal. As discussed above, the Project would promote clean air and non-auto travel by increasing employment opportunities near existing transit routes and an area designated by the City for industrial uses.
Source: Southern California Association of Governments, <i>Connect SoCal (2024 – 2050 Regional Transportation Plan/Sustainable Communities Strategy)</i> , 2024.	

Consistency with the 2022 CARB Scoping Plan

The 2022 Scoping Plan sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. The transportation, electricity, and industrial sectors are the largest GHG contributors in the State. The 2022 Scoping Plan plans to achieve the AB 1279 targets primarily through zero-emission transportation (e.g., electrifying cars, buses, trains, and trucks). Additional GHG reductions are achieved through decarbonizing the electricity and industrial sectors.

Statewide strategies to reduce GHG emissions in the latest 2022 Scoping Plan include implementing SB 100, which would achieve 100 percent clean electricity by 2045; achieving 100 percent zero emission vehicle sales in 2035 through Advanced Clean Cars II; and implementing the Advanced Clean Fleets regulation to deploy zero-electric vehicle buses and trucks.¹⁶ Additional transportation

¹⁶ On June 12, 2025, a federal resolution was signed that revoked the EPA waiver that allowed California agencies to enforce the Advanced Clean Truck Regulation. Adherence to the Advanced Clean Truck Regulation, although unenforceable, continues in part through voluntary agreements between manufacturers and CARB, such as the 2023 Clean Truck Partnership.

policies include the Off-Road Zero-Emission Targeted Manufacturer rule, Clean Off-Road Fleet Recognition Program, In-use Off-Road Diesel-Fueled Fleets Regulation, Off-Road Zero-Emission Targeted Manufacturer rule, Clean Off-Road Fleet Recognition Program, and Amendments to the In-use Off-Road Diesel-Fueled Fleets Regulation. The 2022 Scoping Plan would continue to implement SB 375. GHGs would be further reduced through the Cap-and-Trade Program carbon pricing and SB 905. SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate carbon dioxide removal projects and technology.

A majority of the Project's GHG emissions are from energy and mobile sources which would be further reduced by the 2022 Scoping Plan measures described above. It should be noted that the City has no control over vehicle emissions. However, these emissions would decline in the future due to statewide measures discussed above, as well as cleaner technology and fleet turnover. Several of the State's plans and policies would contribute to a reduction in mobile source emissions from the Project. The Project does not conflict with the applicable plans that are discussed above, would not conflict with statewide measures to obtain carbon neutrality by the year 2045, and therefore with respect to this particular threshold, the Project does not have a significant impact.

Compliance with applicable State standards would ensure consistency with State and regional GHG reduction planning efforts. The goals stated in the RTP/SCS were used to determine consistency with the planning efforts previously stated. As shown in [Table 3](#), the Project would be consistent with the stated goals of the RTP/SCS. Therefore, the Project would not result in any significant impacts or interfere with SCAG's ability to achieve the region's post-2020 mobile source GHG reduction targets.

Mitigation Measures: MM GHG-1.

Level of Significance: Less than significant impact with mitigation incorporated.

5.3 Cumulative Setting and Impacts

Cumulative Setting

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 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

It is generally the case that an individual project of this 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 GHGs would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the Project as well as other cumulative related projects would also be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As discussed under Impact Threshold 5.2, the Project would not conflict with any applicable GHG reduction plans including the RTP/SCS, 2022 Scoping 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: MM GHG-1.

Level of Significance: Less than significant impact with mitigation incorporated.

6.0 POTENTIAL ENERGY IMPACTS AND MITIGATION

6.1 Energy Consumption

Threshold ENG-1 Result in potentially significant environmental impact due to wasteful, inefficient or unnecessary consumption of energy resources, during project construction or operation

Construction

The energy consumption associated with construction of the Project includes primarily diesel fuel consumption from on-road hauling trips and off-road construction diesel equipment, and gasoline consumption from on-road worker commute and vendor trips. Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers, and heating, ventilation, and air conditioning) would be powered by a generator. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools, several construction trailers by managerial staff during the hours of construction activities, and water use. The majority of the energy used during construction would be from petroleum. [Table 4: Energy Consumption During Construction](#) quantifies the construction energy consumption provided for the Project. Energy calculations are provided in [Appendix B: Energy Calculations](#).

Table 4: Energy Consumption During Construction			
Source	Project Construction Usage	Los Angeles County Annual Energy Consumption	Percentage Increase Countywide
Electricity Use	Gigawatt Hours (GWh)		
Water Consumption ¹	0.0026	62,908	<0.001%
Diesel Use	Gallons		
On-Road Construction Trips ²	31,103	3,798,808,000	0.001%
Off-Road Construction Equipment ³	48,622	3,798,808,000	0.001%
Construction Diesel Total	79,725	3,798,808,000	0.002%
Gasoline	Gallons		
On-Road Construction Trips ²	29,491	3,798,974,000	0.001%
¹ Construction water consumption energy use based on water energy intensity factors from CalEEMod and water application rates from Air and Waste Management Association's <i>Air Pollution Engineering Manual</i> . ² On-road mobile source fuel use based on vehicle miles traveled (VMT) from CalEEMod and fleet-average fuel consumption in gallons per mile from EMFAC2025 in Los Angeles County. ³ Off-road mobile source fuel usage based on a fuel usage rate of 0.05 gallons of diesel per horsepower (hp)-hour from U.S. EPA. Abbreviations: CalEEMod: California Emission Estimation Model; EMFAC: Emission Factor Model 2025. Sources: Energy Calculations in Appendix B			

In total, construction of the Project would consume approximately 79,725 gallons of diesel and 29,491 gallons of gasoline. Project fuel from the entire construction period would increase fuel use in the County by approximately 0.002 percent for diesel and 0.001 percent for gasoline.

There are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or

State. In addition, some incidental energy conservation would occur during construction through compliance with State requirements that equipment not in use for more than five minutes be turned off. Project construction equipment would also be required to comply with the latest U.S. EPA and CARB engine emissions standards. These engines use highly efficient combustion engines to minimize unnecessary fuel consumption.

The CEQA Guideline Appendix G and Appendix F criteria requires the Project's effects on local and regional energy supplies and on the requirements for additional capacity to be addressed. A 0.002 percent increase in construction fuel demand is not anticipated to trigger the need for additional capacity. Fuel consumption is based on a conservative construction phasing and conservative estimates for annual construction fuel consumption. Longer phases would result in lower construction intensity and a lower annual fuel consumption, resulting in lower annual demand on energy supplies. Additionally, use of construction fuel would cease once Project is fully developed. As such, the Project's construction would have a nominal effect on the local and regional energy supplies. Therefore, it is expected that construction fuel consumption associated with the Project would not be inefficient, wasteful, or unnecessary. The Project would not substantially affect existing energy or fuel supplies, or resources and new capacity would not be required. Construction impacts due to wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant in this regard.

Operational

The energy consumption associated with the Project would include building electricity, water, and diesel usage, as well as fuel usage from on-road vehicles and emergency generators. Quantification of operational energy consumption is provided for the Project in [Table 5: Annual Energy Consumption During Operations](#) below.

Table 5: Annual Energy Consumption During Operations			
Source	Project Operational Usage	Los Angeles County Annual Energy Consumption ⁴	Percentage Increase Countywide
Electricity Use	Megawatt Hour/Year (MWh/year)		
Area ¹	5,703	62,908,000	0.009%
Water ¹	525		< 0.001%
Total Electricity	6,228		0.010%
Natural Gas Use	Therms/year		
Area ¹	0	2,954,000,000	0.000%
Diesel Use	Gallons/Year		
Mobile ²	148,622	534,835,402	0.028%
Backup Generator ³	10,215		0.002%
Total Diesel	158,837		0.030%
Gasoline Use	Gallons/Year		
Mobile ²	178,100	3,299,104,753	0.005%
Notes:			

1. The electricity usage is based on Project-specific estimates and CalEEMod defaults. As the Project would not use natural gas for heating or water, CalEEMod default values for natural gas usage were reassigned to electricity.
 2. Calculated based on the mobile source fuel use based on vehicle miles traveled (VMT) and fleet-average fuel consumption (in gallons per mile) from EMFAC2025 for operational year 2028.
 3. Fuel consumption assumed for one generator operating 50 hours per year at 100 percent load.
- Abbreviations: CalEEMod: California Emission Estimation Model; EMFAC2025: California Air Resources Board Emission Factor Model; MWh: Megawatt-hour
Source: Energy Calculations in Appendix B

SCE provides electricity to the Project area. Total electricity demand in SCE's service area is forecast to increase by approximately 8,000 gigawatt hours (GWh), or 8 million megawatt hours (MWh), between 2024 and 2030.¹⁷

Project estimated operational electrical demand would total approximately 6,228 MWh per year. This would represent 0.01 percent of SCE's forecasted 2028 increased demand, thus, would result in a negligible increased demand compared to SCE's overall demand.

It is also noted that the Project would be subject to compliance with the 2022 Building Energy Efficiency Standards. The Project would also be required to comply with CALGreen, which establishes planning and design standards for sustainable site development, energy efficiency (more than California Energy Code requirements), water conservation, material conservation, and internal air contaminants. Therefore, Project operations would not result in wasteful, inefficient, or unnecessary consumption of electrical resources.

The Project would not use any natural gas for water or heating during operations, so any estimated natural gas usage has been reassigned to electricity. Therefore, the Project would not affect the capacity of utility for natural gas during operation.

The Project would generate a net total of 1,250 daily trips, including 144 truck trips. As shown in [Table 5](#), during Project operations, diesel fuel consumption, including diesel consumed by truck trips and the backup generator, would be approximately 158,837 gallons per year. As shown above in [Table 5](#), the County's annual diesel fuel use in 2028 is anticipated to be 534,835,402 gallons.¹⁸ Estimated Project operational diesel fuel use would represent approximately 0.03 percent of the County's current diesel use. Thus, the Project would not result in a substantial demand for energy that would require expanded supplies or the construction of other infrastructure or expansion of existing facilities. Therefore, operations of the Project would not result in wasteful, inefficient, or unnecessary fuel consumption. In addition, this analysis includes a conservative estimate of fuel usage. Future Project-operational energy would decrease as fuel usage would switch from diesel to electricity per regulations. The Project is consistent with the CAAP and General Plan land use designation for the site meaning the assumed growth was anticipated and planned for. The Project is consistent with other industrial uses in the area and would be built to the latest codes and standards.

¹⁷ California Energy Commission, California Energy Demand 2018-2030 Revised Forecast, Figure 49 Historical and Projected Baseline Consumption SCE Planning Area, 2018, <https://www.enrenergy.ca.gov/data-reports/reports/integrated-energy-policy-report/2017-integrated-energy-policy-report/2017-iepr>. Accessed: August 11, 2025.

¹⁸ California Air Resources Board, EMFAC2021, 2025

The Project would be required to comply with applicable State and local energy standards and MM GHG-1. The electricity used by the Project would be 100 percent carbon free. Therefore, the Project would result in a less than significant impact, and no mitigation is required.

Mitigation Measures: No mitigation measure needed.

Level of Significance: Less than significant impact.

6.2 Energy Plan Consistency

Threshold ENG-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The Project would be required to be built in conformance with existing regulations, including applicable measures from the City's General Plan, like Land Use Policies 1-4 and 1-6, which require incorporation of electric vehicle infrastructure and strategies to reduce net energy usage and the heat island effect in new developments. The Project would comply with existing State energy standards, including the California Renewable Portfolio Standards, Building Energy Efficiency Standards, and Green Building Standards, and would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. With implementation of MM GHG-1, the Project would utilize only zero-carbon electricity by installing onsite renewable energy systems or obtaining energy from a community solar program or other zero-carbon energy program for the portion of the renewable energy systems that is not installed on-site. Offsets will be used if a community solar program or other zero-carbon energy program is unavailable, with the amount of offsets to be procured based on electricity consumed by the Project as built. Through compliance with energy efficiency and renewable energy standards and use of electricity from only carbon-free sources, the Project would neither conflict with, nor obstruct state or local plans for renewable energy or energy efficiency and therefore would have no impact on them.

Mitigation Measures: No additional mitigation is required.

Level of Significance: Less than significant impact.

6.3 Cumulative Setting and Impacts

Cumulative Setting

Cumulative projects would be required to comply with applicable state or local plans for renewable energy or energy efficiency, including Title 24 Energy Efficiency Standards and CALGreen. Compliance with these standards in cumulative project design would ensure that cumulative impacts associated with State or local energy plans would be less than significant.

Cumulative Impacts

The Project as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would not have a substantial impact on energy. It is expected that construction fuel consumption associated with the Project would not be inefficient, wasteful, or unnecessary. Similarly, the Project would not substantially affect existing energy or fuel supplies, or resources and new capacity would not be required during operations. It is expected that operational fuel and energy

consumption associated with the Project would not be inefficient, wasteful, or unnecessary. Furthermore, the Project as well as other cumulative related projects in the region would be built in conformance with the City's General Plan. Therefore, the Project's cumulative contribution of energy would be less than significant, and the Project's cumulative energy impacts would also be less than cumulatively considerable.

Mitigation Measures: No mitigation measure needed.

Level of Significance: Less than significant impact.

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Appendix A

Greenhouse Gas Emissions Data

3800 Via Oro Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	3800 Via Oro
Construction Start Date	11/1/2026
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.30000
Precipitation (days)	17.4000
Location	33.82952404128427, -118.21144035959969
County	Los Angeles-South Coast
City	Long Beach
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	4700
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.37

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Manufacturing	152.433	1000sqft	3.49938	152,433	0.00000	—	—	—

Unrefrigerated Warehouse-No Rail	155.657	1000sqft	3.57339	155,657	0.00000	—	—	—
General Office Building	24.0000	1000sqft	0.55096	24,000.0	0.00000	—	—	—
Parking Lot	333.000	Space	4.24700	0.00000	0.00000	—	—	—
City Park	1.50000	Acre	1.50000	0.00000	65,270.0	65,270.0	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	49.1035	48.9306	11.6554	22.0240	0.03564	0.34881	2.25743	2.60624	0.32189	0.54864	0.87053	—	5,882.86	5,882.86	0.24486	0.31433	10.0170	5,992.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	49.4946	49.1302	31.2079	29.7727	0.08959	1.24251	19.8858	21.1283	1.14311	10.1561	11.2992	—	12,006.4	12,006.4	0.61240	1.37449	0.50588	12,431.8
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.99056	8.92383	9.17147	15.4621	0.02674	0.28448	1.96284	2.24731	0.26237	0.54891	0.81128	—	4,205.83	4,205.83	0.14115	0.21174	2.88355	4,275.34
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.64078	1.62860	1.67379	2.82183	0.00488	0.05192	0.35822	0.41013	0.04788	0.10018	0.14806	—	696.323	696.323	0.02337	0.03506	0.47740	707.831

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.89148	1.56731	11.6554	22.0240	0.03564	0.34881	2.25743	2.60624	0.32189	0.54864	0.87053	—	5,882.86	5,882.86	0.24486	0.31433	10.0170	5,992.67
2028	49.1035	48.9306	7.58015	13.4207	0.01568	0.27090	0.55441	0.82531	0.24923	0.12995	0.37918	—	2,198.13	2,198.13	0.07232	0.03345	1.57829	2,211.48
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.81419	3.20791	31.2079	29.7727	0.08959	1.24251	19.8858	21.1283	1.14311	10.1561	11.2992	—	12,006.4	12,006.4	0.61240	1.37449	0.50588	12,431.8
2027	3.58493	3.01513	25.6663	28.2995	0.06093	1.04307	9.46501	10.5081	0.95962	3.71503	4.67465	—	6,850.06	6,850.06	0.27117	0.31433	0.25982	6,875.64
2028	49.4946	49.1302	12.1540	22.7743	0.03737	0.32783	2.61578	2.94361	0.30259	0.63264	0.93523	—	6,192.75	6,192.75	0.18637	0.32842	0.26489	6,295.54
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.41337	0.32700	3.42675	3.07976	0.00828	0.12350	1.57396	1.69746	0.11410	0.52608	0.64017	—	1,037.52	1,037.52	0.04902	0.07882	0.48185	1,062.72
2027	1.43321	1.18636	9.17147	15.4621	0.02674	0.28448	1.96284	2.24731	0.26237	0.54891	0.81128	—	4,205.83	4,205.83	0.14115	0.21174	2.88355	4,275.34
2028	8.99056	8.92383	2.33631	4.34561	0.00680	0.06692	0.43303	0.49995	0.06173	0.10456	0.16628	—	1,101.32	1,101.32	0.03359	0.05405	0.73079	1,119.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.07544	0.05968	0.62538	0.56206	0.00151	0.02254	0.28725	0.30979	0.02082	0.09601	0.11683	—	171.773	171.773	0.00812	0.01305	0.07978	175.945
2027	0.26156	0.21651	1.67379	2.82183	0.00488	0.05192	0.35822	0.41013	0.04788	0.10018	0.14806	—	696.323	696.323	0.02337	0.03506	0.47740	707.831
2028	1.64078	1.62860	0.42638	0.79307	0.00124	0.01221	0.07903	0.09124	0.01126	0.01908	0.03035	—	182.336	182.336	0.00556	0.00895	0.12099	185.263

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	14.9773	14.0575	10.9799	50.5194	0.15674	0.18374	10.5103	10.6940	0.16933	2.70813	2.87746	337.521	25,578.9	25,916.5	35.3589	1.90782	83.2578	27,452.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	12.3625	11.6390	11.4415	33.2973	0.15241	0.15829	10.5103	10.6686	0.15014	2.70813	2.85827	337.521	25,169.6	25,507.1	35.3692	1.92391	40.8661	27,005.5
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.1017	13.2422	11.6416	44.0037	0.15393	0.17574	10.3991	10.5748	0.16331	2.68032	2.84363	337.521	25,303.6	25,641.2	35.3688	1.92526	58.5293	27,157.6
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.57356	2.41670	2.12458	8.03067	0.02809	0.03207	1.89783	1.92990	0.02980	0.48916	0.51896	55.8805	4,189.31	4,245.19	5.85571	0.31875	9.69020	4,496.26

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.39046	3.66887	10.8584	36.0761	0.15587	0.15809	10.5103	10.6684	0.14994	2.70813	2.85807	—	16,443.0	16,443.0	0.68425	1.48654	43.5204	16,946.6
Area	10.5868	10.3886	0.12152	14.4432	0.00086	0.02565	—	0.02565	0.01939	—	0.01939	—	59.3932	59.3932	0.00249	0.00051	—	59.6073
Energy	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	8,311.62	8,311.62	0.51559	0.06250	—	8,343.13
Water	—	—	—	—	—	—	—	—	—	—	—	144.698	764.927	909.625	14.8845	0.35828	—	1,388.50
Waste	—	—	—	—	—	—	—	—	—	—	—	192.823	0.00000	192.823	19.2720	0.00000	—	674.624
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.7374	39.7374
Total	14.9773	14.0575	10.9799	50.5194	0.15674	0.18374	10.5103	10.6940	0.16933	2.70813	2.87746	337.521	25,578.9	25,916.5	35.3589	1.90782	83.2578	27,452.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.34635	3.62284	11.4415	33.2973	0.15241	0.15829	10.5103	10.6686	0.15014	2.70813	2.85827	—	16,093.0	16,093.0	0.69710	1.50314	1.12875	16,559.5
Area	8.01613	8.01613	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	8,311.62	8,311.62	0.51559	0.06250	—	8,343.13
Water	—	—	—	—	—	—	—	—	—	—	—	144.698	764.927	909.625	14.8845	0.35828	—	1,388.50
Waste	—	—	—	—	—	—	—	—	—	—	—	192.823	0.00000	192.823	19.2720	0.00000	—	674.624
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.7374	39.7374
Total	12.3625	11.6390	11.4415	33.2973	0.15241	0.15829	10.5103	10.6686	0.15014	2.70813	2.85827	337.521	25,169.6	25,507.1	35.3692	1.92391	40.8661	27,005.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.32483	3.60107	11.5583	34.1111	0.15334	0.15817	10.3991	10.5572	0.15003	2.68032	2.83035	—	16,186.4	16,186.4	0.69499	1.50414	18.7920	16,670.8
Area	9.77687	9.64110	0.08324	9.89263	0.00059	0.01757	—	0.01757	0.01328	—	0.01328	—	40.6803	40.6803	0.00171	0.00035	—	40.8269
Energy	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	8,311.62	8,311.62	0.51559	0.06250	—	8,343.13
Water	—	—	—	—	—	—	—	—	—	—	—	144.698	764.927	909.625	14.8845	0.35828	—	1,388.50
Waste	—	—	—	—	—	—	—	—	—	—	—	192.823	0.00000	192.823	19.2720	0.00000	—	674.624
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.7374	39.7374
Total	14.1017	13.2422	11.6416	44.0037	0.15393	0.17574	10.3991	10.5748	0.16331	2.68032	2.84363	337.521	25,303.6	25,641.2	35.3688	1.92526	58.5293	27,157.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.78928	0.65719	2.10939	6.22527	0.02798	0.02887	1.89783	1.92669	0.02738	0.48916	0.51654	—	2,679.85	2,679.85	0.11506	0.24903	3.11123	2,760.04
Area	1.78428	1.75950	0.01519	1.80540	0.00011	0.00321	—	0.00321	0.00242	—	0.00242	—	6.73508	6.73508	0.00028	0.00006	—	6.75937
Energy	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	1,376.08	1,376.08	0.08536	0.01035	—	1,381.30
Water	—	—	—	—	—	—	—	—	—	—	—	23.9564	126.642	150.599	2.46431	0.05932	—	229.883
Waste	—	—	—	—	—	—	—	—	—	—	—	31.9241	0.00000	31.9241	3.19070	0.00000	—	111.692
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.57897	6.57897
Total	2.57356	2.41670	2.12458	8.03067	0.02809	0.03207	1.89783	1.92990	0.02980	0.48916	0.51896	55.8805	4,189.31	4,245.19	5.85571	0.31875	9.69020	4,496.26

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72490	2.28674	20.6515	19.0056	0.03253	0.84309	—	0.84309	0.77564	—	0.77564	—	3,426.59	3,426.59	0.13900	0.02780	—	3,438.35
Demolition	—	—	—	—	—	—	10.5788	10.5788	—	1.60193	1.60193	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14931	0.12530	1.13159	1.04140	0.00178	0.04620	—	0.04620	0.04250	—	0.04250	—	187.759	187.759	0.00762	0.00152	—	188.403
Demolition	—	—	—	—	—	—	0.57966	0.57966	—	0.08778	0.08778	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02725	0.02287	0.20652	0.19006	0.00033	0.00843	—	0.00843	0.00776	—	0.00776	—	31.0856	31.0856	0.00126	0.00025	—	31.1922
Demolition	—	—	—	—	—	—	0.10579	0.10579	—	0.01602	0.01602	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06234	0.05490	0.06531	0.82673	0.00000	0.00000	0.19606	0.19606	0.00000	0.04596	0.04596	—	192.664	192.664	0.00876	0.00711	0.01785	195.020
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.59507	0.12499	10.4911	4.01058	0.05706	0.10869	2.28505	2.39374	0.10869	0.62561	0.73430	—	8,387.15	8,387.15	0.46464	1.33958	0.48803	8,798.45
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00340	0.00299	0.00390	0.04741	0.00000	0.00000	0.01062	0.01062	0.00000	0.00249	0.00249	—	10.7127	10.7127	0.00048	0.00039	0.01630	10.8571
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.03290	0.00715	0.58111	0.21842	0.00313	0.00596	0.12414	0.13010	0.00596	0.03401	0.03997	—	459.458	459.458	0.02546	0.07340	0.44285	482.411
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00062	0.00055	0.00071	0.00865	0.00000	0.00000	0.00194	0.00194	0.00000	0.00045	0.00045	—	1.77361	1.77361	0.00008	0.00006	0.00270	1.79752
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00601	0.00130	0.10605	0.03986	0.00057	0.00109	0.02266	0.02374	0.00109	0.00621	0.00729	—	76.0684	76.0684	0.00422	0.01215	0.07332	79.8686

3.3. Site Preparation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm ent	3.74146	3.14387	29.1635	28.8082	0.04890	1.24251	—	1.24251	1.14311	—	1.14311	—	5,297.94	5,297.94	0.21491	0.04298	—	5,316.12
Dust From Material Movement	—	—	—	—	—	—	19.6570	19.6570	—	10.1024	10.1024	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.10251	0.08613	0.79900	0.78927	0.00134	0.03404	—	0.03404	0.03132	—	0.03132	—	145.149	145.149	0.00589	0.00118	—	145.647
Dust From Material Movement	—	—	—	—	—	—	0.53855	0.53855	—	0.27678	0.27678	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.01871	0.01572	0.14582	0.14404	0.00024	0.00621	—	0.00621	0.00572	—	0.00572	—	24.0311	24.0311	0.00097	0.00019	—	24.1135
Dust From Material Movement	—	—	—	—	—	—	0.09829	0.09829	—	0.05051	0.05051	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07272	0.06404	0.07620	0.96452	0.00000	0.00000	0.22874	0.22874	0.00000	0.05362	0.05362	—	224.775	224.775	0.01022	0.00829	0.02082	227.523
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00198	0.00174	0.00227	0.02766	0.00000	0.00000	0.00620	0.00620	0.00000	0.00145	0.00145	—	6.24909	6.24909	0.00028	0.00023	0.00951	6.33332
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00036	0.00032	0.00041	0.00505	0.00000	0.00000	0.00113	0.00113	0.00000	0.00026	0.00026	—	1.03461	1.03461	0.00005	0.00004	0.00157	1.04855
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5. Grading (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62261	3.04400	27.2253	27.5707	0.06093	1.12137	—	1.12137	1.03166	—	1.03166	—	6,598.58	6,598.58	0.26767	0.05353	—	6,621.22

Dust From Material Movement	—	—	—	—	—	—	9.20359	9.20359	—	3.65375	3.65375	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12052	0.10127	0.90573	0.91722	0.00203	0.03731	—	0.03731	0.03432	—	0.03432	—	219.522	219.522	0.00890	0.00178	—	220.275
Dust From Material Movement	—	—	—	—	—	—	0.30619	0.30619	—	0.12155	0.12155	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02199	0.01848	0.16530	0.16739	0.00037	0.00681	—	0.00681	0.00626	—	0.00626	—	36.3444	36.3444	0.00147	0.00029	—	36.4691
Dust From Material Movement	—	—	—	—	—	—	0.05588	0.05588	—	0.02218	0.02218	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08311	0.07319	0.08708	1.10231	0.00000	0.00000	0.26142	0.26142	0.00000	0.06128	0.06128	—	256.886	256.886	0.01168	0.00948	0.02380	260.027

Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00275	0.00242	0.00315	0.03838	0.00000	0.00000	0.00860	0.00860	0.00000	0.00201	0.00201	—	8.67221	8.67221	0.00039	0.00032	0.01319	8.78910
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00050	0.00044	0.00058	0.00700	0.00000	0.00000	0.00157	0.00157	0.00000	0.00037	0.00037	—	1.43578	1.43578	0.00006	0.00005	0.00218	1.45514
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7. Grading (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.50534	2.94546	25.5801	27.2816	0.06093	1.04307	—	1.04307	0.95962	—	0.95962	—	6,598.08	6,598.08	0.26765	0.05353	—	6,620.72
Dust From Material Movement	—	—	—	—	—	—	9.20359	9.20359	—	3.65375	3.65375	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17835	0.14987	1.30153	1.38811	0.00310	0.05307	—	0.05307	0.04883	—	0.04883	—	335.714	335.714	0.01362	0.00272	—	336.866
Dust From Material Movement	—	—	—	—	—	—	0.46828	0.46828	—	0.18591	0.18591	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03255	0.02735	0.23753	0.25333	0.00057	0.00969	—	0.00969	0.00891	—	0.00891	—	55.5813	55.5813	0.00225	0.00045	—	55.7721
Dust From Material Movement	—	—	—	—	—	—	0.08546	0.08546	—	0.03393	0.03393	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07959	0.06967	0.08620	1.01787	0.00000	0.00000	0.26142	0.26142	0.00000	0.06128	0.06128	—	251.980	251.980	0.00353	0.00948	0.02146	254.915
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00405	0.00354	0.00439	0.05443	0.00000	0.00000	0.01315	0.01315	0.00000	0.00308	0.00308	—	13.0101	13.0101	0.00018	0.00048	0.01816	13.1765

Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00074	0.00065	0.00080	0.00993	0.00000	0.00000	0.00240	0.00240	0.00000	0.00056	0.00056	—	2.15397	2.15397	0.00003	0.00008	0.00301	2.18151
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9. Building Construction (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23076	1.02988	9.39093	12.9379	0.02340	0.33657	—	0.33657	0.30965	—	0.30965	—	2,397.08	2,397.08	0.09724	0.01945	—	2,405.30
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23076	1.02988	9.39093	12.9379	0.02340	0.33657	—	0.33657	0.30965	—	0.30965	—	2,397.08	2,397.08	0.09724	0.01945	—	2,405.30
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm ent	0.81649	0.68323	6.22999	8.58310	0.01552	0.22329	—	0.22329	0.20542	—	0.20542	—	1,590.23	1,590.23	0.06451	0.01290	—	1,595.69
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.14901	0.12469	1.13697	1.56642	0.00283	0.04075	—	0.04075	0.03749	—	0.03749	—	263.281	263.281	0.01068	0.00214	—	264.185
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.55152	0.48655	0.47295	8.23357	0.00000	0.00000	1.79174	1.79174	0.00000	0.41998	0.41998	—	1,821.67	1,821.67	0.07706	0.06497	5.67633	1,848.64
Vendor	0.10920	0.05088	1.79155	0.85246	0.01224	0.01224	0.46569	0.47793	0.01224	0.12866	0.14090	—	1,664.11	1,664.11	0.07056	0.22991	4.34067	1,738.73
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.54548	0.47748	0.59081	6.97640	0.00000	0.00000	1.79174	1.79174	0.00000	0.41998	0.41998	—	1,727.05	1,727.05	0.02418	0.06497	0.14710	1,747.16
Vendor	0.10680	0.04848	1.86331	0.87286	0.01224	0.01224	0.46569	0.47793	0.01224	0.12866	0.14090	—	1,665.03	1,665.03	0.07056	0.22991	0.11272	1,735.42
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36187	0.31677	0.39195	4.86375	0.00000	0.00000	1.17536	1.17536	0.00000	0.27530	0.27530	—	1,162.64	1,162.64	0.01604	0.04310	1.62297	1,177.50
Vendor	0.07244	0.03296	1.24361	0.57269	0.00812	0.00812	0.30604	0.31416	0.00812	0.08463	0.09275	—	1,104.23	1,104.23	0.04681	0.15253	1.24242	1,152.10
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06604	0.05781	0.07153	0.88763	0.00000	0.00000	0.21450	0.21450	0.00000	0.05024	0.05024	—	192.488	192.488	0.00266	0.00714	0.26870	194.949

Vendor	0.01322	0.00601	0.22696	0.10452	0.00148	0.00148	0.05585	0.05733	0.00148	0.01544	0.01693	—	182.819	182.819	0.00775	0.02525	0.20570	190.743
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.11. Building Construction (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18481	0.99143	8.92495	12.9352	0.02340	0.30024	—	0.30024	0.27622	—	0.27622	—	2,397.46	2,397.46	0.09725	0.01945	—	2,405.68
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19013	0.15909	1.43218	2.07572	0.00376	0.04818	—	0.04818	0.04432	—	0.04432	—	384.719	384.719	0.01561	0.00312	—	386.039
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03470	0.02903	0.26137	0.37882	0.00069	0.00879	—	0.00879	0.00809	—	0.00809	—	63.6946	63.6946	0.00258	0.00052	—	63.9132
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.53037	0.46540	0.53188	6.57447	0.00000	0.00000	1.79174	1.79174	0.00000	0.41998	0.41998	—	1,696.26	1,696.26	0.02115	0.06497	0.13191	1,716.28
Vendor	0.10680	0.03624	1.78267	0.83134	0.01224	0.01224	0.46569	0.47793	0.01224	0.12866	0.14090	—	1,626.26	1,626.26	0.05832	0.22991	0.10659	1,696.34
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08462	0.07420	0.08487	1.10301	0.00000	0.00000	0.28431	0.28431	0.00000	0.06659	0.06659	—	276.216	276.216	0.00339	0.01043	0.35409	279.762
Vendor	0.01733	0.00601	0.28768	0.13186	0.00196	0.00196	0.07403	0.07599	0.00196	0.02047	0.02243	—	260.877	260.877	0.00936	0.03689	0.28367	272.389
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01544	0.01354	0.01549	0.20130	0.00000	0.00000	0.05189	0.05189	0.00000	0.01215	0.01215	—	45.7307	45.7307	0.00056	0.00173	0.05862	46.3178
Vendor	0.00316	0.00110	0.05250	0.02407	0.00036	0.00036	0.01351	0.01387	0.00036	0.00374	0.00409	—	43.1911	43.1911	0.00155	0.00611	0.04697	45.0970
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.13. Paving (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81550	0.68524	6.62754	9.90989	0.01395	0.25554	—	0.25554	0.23510	—	0.23510	—	1,511.03	1,511.03	0.06129	0.01226	—	1,516.22
Paving	0.55636	0.55636	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.81550	0.68524	6.62754	9.90989	0.01395	0.25554	—	0.25554	0.23510	—	0.23510	—	—	1,511.03	1,511.03	0.06129	0.01226	—	1,516.22
Paving	0.55636	0.55636	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.04468	0.03755	0.36315	0.54301	0.00076	0.01400	—	0.01400	0.01288	—	0.01288	—	—	82.7962	82.7962	0.00336	0.00067	—	83.0803
Paving	0.03049	0.03049	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.00815	0.00685	0.06628	0.09910	0.00014	0.00256	—	0.00256	0.00235	—	0.00235	—	—	13.7079	13.7079	0.00056	0.00011	—	13.7549
Paving	0.00556	0.00556	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05837	0.05126	0.05109	0.84608	0.00000	0.00000	0.19606	0.19606	0.00000	0.04596	0.04596	—	—	195.771	195.771	0.00198	0.00711	0.55815	198.498
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05804	0.05093	0.05820	0.71942	0.00000	0.00000	0.19606	0.19606	0.00000	0.04596	0.04596	—	185.616	185.616	0.00231	0.00711	0.01444	187.807
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00316	0.00277	0.00317	0.04121	0.00000	0.00000	0.01062	0.01062	0.00000	0.00249	0.00249	—	10.3209	10.3209	0.00013	0.00039	0.01323	10.4534
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00058	0.00051	0.00058	0.00752	0.00000	0.00000	0.00194	0.00194	0.00000	0.00045	0.00045	—	1.70874	1.70874	0.00002	0.00006	0.00219	1.73068
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.15. Architectural Coating (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12985	0.10731	0.80814	1.11833	0.00173	0.01536	—	0.01536	0.01413	—	0.01413	—	133.517	133.517	0.00542	0.00108	—	133.975
Architectural Coatings	47.4367	47.4367	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.12985	0.10731	0.80814	1.11833	0.00173	0.01536	—	0.01536	0.01413	—	0.01413	—	133.517	133.517	0.00542	0.00108	—	133.975	
Architect ural Coating s	47.4367	47.4367	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.02348	0.01940	0.14613	0.20222	0.00031	0.00278	—	0.00278	0.00255	—	0.00255	—	24.1428	24.1428	0.00098	0.00020	—	24.2257	
Architect ural Coating s	8.57760	8.57760	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	0.00428	0.00354	0.02667	0.03690	0.00006	0.00051	—	0.00051	0.00047	—	0.00047	—	3.99712	3.99712	0.00016	0.00003	—	4.01083	
Architect ural Coating s	1.56541	1.56541	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10668	0.09368	0.09338	1.54638	0.00000	0.00000	0.35835	0.35835	0.00000	0.08400	0.08400	—	357.812	357.812	0.00363	0.01299	1.02014	362.796
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10607	0.09308	0.10638	1.31489	0.00000	0.00000	0.35835	0.35835	0.00000	0.08400	0.08400	—	339.251	339.251	0.00423	0.01299	0.02638	343.256
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01907	0.01672	0.01913	0.24858	0.00000	0.00000	0.06407	0.06407	0.00000	0.01501	0.01501	—	62.2496	62.2496	0.00077	0.00235	0.07980	63.0488
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00348	0.00305	0.00349	0.04537	0.00000	0.00000	0.01169	0.01169	0.00000	0.00274	0.00274	—	10.3061	10.3061	0.00013	0.00039	0.01321	10.4384
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.53496	0.20020	8.18206	3.58076	0.07296	0.10910	2.56207	2.67117	0.10434	0.68919	0.79353	—	7,961.78	7,961.78	0.31509	1.16937	19.9487	8,338.07
Unrefrigerated Warehouse-No Rail	3.85550	3.46867	2.67630	32.4954	0.08291	0.04898	7.94820	7.99718	0.04560	2.01894	2.06454	—	8,481.22	8,481.22	0.36916	0.31717	23.5718	8,608.54
General Office Building	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Parking Lot	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
City Park	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total	4.39046	3.66887	10.8584	36.0761	0.15587	0.15809	10.5103	10.6684	0.14994	2.70813	2.85807	—	16,443.0	16,443.0	0.68425	1.48654	43.5204	16,946.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.52615	0.19247	8.51395	3.61213	0.07299	0.10928	2.56207	2.67136	0.10451	0.68919	0.79370	—	7,964.64	7,964.64	0.31475	1.17036	0.51757	8,321.79
Unrefrigerated Warehouse-No Rail	3.82019	3.43038	2.92752	29.6851	0.07942	0.04901	7.94820	7.99721	0.04563	2.01894	2.06457	—	8,128.39	8,128.39	0.38235	0.33278	0.61118	8,237.73
General Office Building	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Parking Lot	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
City Park	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total	4.34635	3.62284	11.4415	33.2973	0.15241	0.15829	10.5103	10.6686	0.15014	2.70813	2.85827	—	16,093.0	16,093.0	0.69710	1.50314	1.12875	16,559.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufac	0.09687	0.03587	1.56972	0.65568	0.01332	0.01993	0.46343	0.48335	0.01906	0.12474	0.14379	—	1,318.36	1,318.36	0.05214	0.19374	1.42613	1,378.83
Unrefrig erated Wareho use-No Rail	0.69241	0.62133	0.53968	5.56959	0.01467	0.00894	1.43440	1.44334	0.00832	0.36442	0.37274	—	1,361.48	1,361.48	0.06292	0.05529	1.68510	1,381.22
General Office Building	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Parking Lot	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
City Park	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total	0.78928	0.65719	2.10939	6.22527	0.02798	0.02887	1.89783	1.92669	0.02738	0.48916	0.51654	—	2,679.85	2,679.85	0.11506	0.24903	3.11123	2,760.04

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	—	4,918.22	4,918.22	0.30509	0.03698	—	4,936.87
Unrefrig erated Wareho use-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	2,343.52	2,343.52	0.14537	0.01762	—	2,352.41
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	883.199	883.199	0.05479	0.00664	—	886.548

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	166.680	166.680	0.01034	0.00125	—	167.312
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Total	—	—	—	—	—	—	—	—	—	—	—	—	8,311.62	8,311.62	0.51559	0.06250	—	8,343.13
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	4,918.22	4,918.22	0.30509	0.03698	—	4,936.87
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	2,343.52	2,343.52	0.14537	0.01762	—	2,352.41
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	883.199	883.199	0.05479	0.00664	—	886.548
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	166.680	166.680	0.01034	0.00125	—	167.312
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Total	—	—	—	—	—	—	—	—	—	—	—	—	8,311.62	8,311.62	0.51559	0.06250	—	8,343.13
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	814.267	814.267	0.05051	0.00612	—	817.355
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	387.997	387.997	0.02407	0.00292	—	389.468
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	146.224	146.224	0.00907	0.00110	—	146.778
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	27.5958	27.5958	0.00171	0.00021	—	27.7004

City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,376.08	1,376.08	0.08536	0.01035	—	1,381.30

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Unrefrigerated Warehouse-No Rail	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
General Office Building	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Parking Lot	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Total	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Unrefrigerated Warehouse-No Rail	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000

General Office Building	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Parking Lot	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Total	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Unrefrigerated Warehouse-No Rail	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
General Office Building	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Parking Lot	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000
Total	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	—	0.00000	—	0.00000	0.00000	0.00000	0.00000	—	0.00000

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	7.15837	7.15837	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.85776	0.85776	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.57068	2.37246	0.12152	14.4432	0.00086	0.02565	—	0.02565	0.01939	—	0.01939	—	59.3932	59.3932	0.00249	0.00051	—	59.6073
Total	10.5868	10.3886	0.12152	14.4432	0.00086	0.02565	—	0.02565	0.01939	—	0.01939	—	59.3932	59.3932	0.00249	0.00051	—	59.6073
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	7.15837	7.15837	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.85776	0.85776	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	8.01613	8.01613	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.30640	1.30640	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.15654	0.15654	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.32134	0.29656	0.01519	1.80540	0.00011	0.00321	—	0.00321	0.00242	—	0.00242	—	6.73508	6.73508	0.00028	0.00006	—	6.75937
Total	1.78428	1.75950	0.01519	1.80540	0.00011	0.00321	—	0.00321	0.00242	—	0.00242	—	6.73508	6.73508	0.00028	0.00006	—	6.75937

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	67.5476	349.737	417.285	6.94792	0.16719	—	640.807
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	68.9762	357.135	426.111	7.09487	0.17073	—	654.360
General Office Building	—	—	—	—	—	—	—	—	—	—	—	8.17391	42.3216	50.4956	0.84077	0.02023	—	77.5439
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00000	15.7335	15.7335	0.00098	0.00012	—	15.7932
Total	—	—	—	—	—	—	—	—	—	—	—	144.698	764.927	909.625	14.8845	0.35828	—	1,388.50
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	67.5476	349.737	417.285	6.94792	0.16719	—	640.807
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	68.9762	357.135	426.111	7.09487	0.17073	—	654.360

General Office Building	—	—	—	—	—	—	—	—	—	—	—	8.17391	42.3216	50.4956	0.84077	0.02023	—	77.5439
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00000	15.7335	15.7335	0.00098	0.00012	—	15.7932
Total	—	—	—	—	—	—	—	—	—	—	—	144.698	764.927	909.625	14.8845	0.35828	—	1,388.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	11.1833	57.9030	69.0863	1.15031	0.02768	—	106.093
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	11.4198	59.1277	70.5475	1.17464	0.02827	—	108.337
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1.35328	7.00683	8.36012	0.13920	0.00335	—	12.8383
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00000	2.60487	2.60487	0.00016	0.00002	—	2.61474
Total	—	—	—	—	—	—	—	—	—	—	—	23.9564	126.642	150.599	2.46431	0.05932	—	229.883

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Manufac	—	—	—	—	—	—	—	—	—	—	—	101.869	0.00000	101.869	10.1814	0.00000	—	356.403
Unrefrig erated Wareho use-No Rail	—	—	—	—	—	—	—	—	—	—	—	78.8562	0.00000	78.8562	7.88140	0.00000	—	275.891
General Office Building	—	—	—	—	—	—	—	—	—	—	—	12.0291	0.00000	12.0291	1.20227	0.00000	—	42.0858
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	—	—	—	—	—	—	—	—	—	—	—	0.06952	0.00000	0.06952	0.00695	0.00000	—	0.24324
Total	—	—	—	—	—	—	—	—	—	—	—	192.823	0.00000	192.823	19.2720	0.00000	—	674.624
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	101.869	0.00000	101.869	10.1814	0.00000	—	356.403
Unrefrig erated Wareho use-No Rail	—	—	—	—	—	—	—	—	—	—	—	78.8562	0.00000	78.8562	7.88140	0.00000	—	275.891
General Office Building	—	—	—	—	—	—	—	—	—	—	—	12.0291	0.00000	12.0291	1.20227	0.00000	—	42.0858
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	—	—	—	—	—	—	—	—	—	—	—	0.06952	0.00000	0.06952	0.00695	0.00000	—	0.24324
Total	—	—	—	—	—	—	—	—	—	—	—	192.823	0.00000	192.823	19.2720	0.00000	—	674.624
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufac turing	—	—	—	—	—	—	—	—	—	—	—	16.8655	0.00000	16.8655	1.68565	0.00000	—	59.0067

Unrefrigerated	—	—	—	—	—	—	—	—	—	—	—	13.0555	0.00000	13.0555	1.30486	0.00000	—	45.6769
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1.99156	0.00000	1.99156	0.19905	0.00000	—	6.96778
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01151	0.00000	0.01151	0.00115	0.00000	—	0.04027
Total	—	—	—	—	—	—	—	—	—	—	—	31.9241	0.00000	31.9241	3.19070	0.00000	—	111.692

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.6790	39.6790
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05837	0.05837
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.7374	39.7374
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.6790	39.6790

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05837	0.05837
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39.7374	39.7374
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.56931	6.56931
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00966	0.00966
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00000	0.00000
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.57897	6.57897

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipm ent Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipm ent Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	11/1/2026	11/29/2026	5.00000	20.0000	—
Site Preparation	Site Preparation	11/30/2026	12/14/2026	5.00000	10.00000	—
Grading	Grading	12/15/2026	1/26/2027	5.00000	30.0000	—
Building Construction	Building Construction	1/27/2027	3/22/2028	5.00000	300.000	—
Paving	Paving	3/23/2028	4/20/2028	5.00000	20.0000	—
Architectural Coating	Architectural Coating	3/1/2028	5/31/2028	5.00000	66.0000	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.000000	8.00000	33.0000	0.73000
Demolition	Excavators	Diesel	Average	3.00000	8.00000	36.0000	0.38000
Demolition	Rubber Tired Dozers	Diesel	Average	2.00000	8.00000	367.000	0.40000

Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00000	8.00000	367.000	0.40000
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	4.00000	8.00000	84.0000	0.37000
Grading	Excavators	Diesel	Average	2.00000	8.00000	36.0000	0.38000
Grading	Graders	Diesel	Average	1.000000	8.00000	148.000	0.41000
Grading	Rubber Tired Dozers	Diesel	Average	1.000000	8.00000	367.000	0.40000
Grading	Tractors/Loaders/Back hoes	Diesel	Average	2.00000	8.00000	84.0000	0.37000
Grading	Scrapers	Diesel	Average	2.00000	8.00000	423.000	0.48000
Building Construction	Cranes	Diesel	Average	1.000000	7.00000	367.000	0.29000
Building Construction	Forklifts	Diesel	Average	3.00000	8.00000	82.0000	0.20000
Building Construction	Generator Sets	Diesel	Average	1.000000	8.00000	14.0000	0.74000
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	3.00000	7.00000	84.0000	0.37000
Building Construction	Welders	Diesel	Average	1.000000	8.00000	46.0000	0.45000
Paving	Pavers	Diesel	Average	2.00000	8.00000	81.0000	0.42000
Paving	Paving Equipment	Diesel	Average	2.00000	8.00000	89.0000	0.36000
Paving	Rollers	Diesel	Average	2.00000	8.00000	36.0000	0.38000
Architectural Coating	Air Compressors	Diesel	Average	1.000000	6.00000	37.0000	0.48000

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Worker	15.0000	18.5000	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2000	HHDT,MHDT
Demolition	Hauling	123.250	20.0000	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	17.5000	18.5000	LDA,LDT1,LDT2

Site Preparation	Vendor	—	10.2000	HHDT,MHDT
Site Preparation	Hauling	0.00000	20.0000	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	20.0000	18.5000	LDA,LDT1,LDT2
Grading	Vendor	—	10.2000	HHDT,MHDT
Grading	Hauling	0.00000	20.0000	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	137.078	18.5000	LDA,LDT1,LDT2
Building Construction	Vendor	54.4296	10.2000	HHDT,MHDT
Building Construction	Hauling	0.00000	20.0000	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	15.0000	18.5000	LDA,LDT1,LDT2
Paving	Vendor	—	10.2000	HHDT,MHDT
Paving	Hauling	0.00000	20.0000	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	27.4156	18.5000	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2000	HHDT,MHDT
Architectural Coating	Hauling	0.00000	20.0000	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00000	0.00000	498,135	166,045	11,100.0

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00000	0.00000	0.00000	9,858.00	0.00000
Site Preparation	0.00000	0.00000	15.0000	0.00000	0.00000
Grading	0.00000	0.00000	90.0000	0.00000	0.00000
Paving	0.00000	0.00000	0.00000	0.00000	4.24700

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	Manufacturing	0.00000	0%
Paving	Unrefrigerated Warehouse-No Rail	0.00000	0%
Paving	General Office Building	0.00000	0%
Paving	Parking Lot	4.24700	100%
Paving	City Park	0.00000	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00000	531.983	0.03300	0.00400
2027	0.00000	531.983	0.03300	0.00400
2028	0.00000	531.983	0.03300	0.00400

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VT/Weekday	VT/Saturday	VT/Sunday	VT/Year
Manufacturing	144.003	144.003	144.003	52,561.3	2,880.07	2,880.07	2,880.07	1,051,225
Unrefrigerated Warehouse-No Rail	1,105.94	1,105.94	1,105.94	403,669	11,207.5	11,207.5	11,207.5	4,090,739
General Office Building	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Parking Lot	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
City Park	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Manufacturing	Wood Fireplaces	0	0
Manufacturing	Gas Fireplaces	0	0
Manufacturing	Propane Fireplaces	0	0
Manufacturing	Electric Fireplaces	0	0
Manufacturing	No Fireplaces	0	0
Manufacturing	Conventional Wood Stoves	0	0
Manufacturing	Catalytic Wood Stoves	0	0
Manufacturing	Non-Catalytic Wood Stoves	0	0
Manufacturing	Pellet Wood Stoves	0	0
Unrefrigerated Warehouse-No Rail	Wood Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	Gas Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	Propane Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	Electric Fireplaces	0	0

Unrefrigerated Warehouse-No Rail	No Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	Conventional Wood Stoves	0	0
Unrefrigerated Warehouse-No Rail	Catalytic Wood Stoves	0	0
Unrefrigerated Warehouse-No Rail	Non-Catalytic Wood Stoves	0	0
Unrefrigerated Warehouse-No Rail	Pellet Wood Stoves	0	0
General Office Building	Wood Fireplaces	0	0
General Office Building	Gas Fireplaces	0	0
General Office Building	Propane Fireplaces	0	0
General Office Building	Electric Fireplaces	0	0
General Office Building	No Fireplaces	0	0
General Office Building	Conventional Wood Stoves	0	0
General Office Building	Catalytic Wood Stoves	0	0
General Office Building	Non-Catalytic Wood Stoves	0	0
General Office Building	Pellet Wood Stoves	0	0
Parking Lot	Wood Fireplaces	0	0
Parking Lot	Gas Fireplaces	0	0
Parking Lot	Propane Fireplaces	0	0
Parking Lot	Electric Fireplaces	0	0
Parking Lot	No Fireplaces	0	0
Parking Lot	Conventional Wood Stoves	0	0
Parking Lot	Catalytic Wood Stoves	0	0
Parking Lot	Non-Catalytic Wood Stoves	0	0
Parking Lot	Pellet Wood Stoves	0	0
City Park	Wood Fireplaces	0	0
City Park	Gas Fireplaces	0	0
City Park	Propane Fireplaces	0	0
City Park	Electric Fireplaces	0	0
City Park	No Fireplaces	0	0

City Park	Conventional Wood Stoves	0	0
City Park	Catalytic Wood Stoves	0	0
City Park	Non-Catalytic Wood Stoves	0	0
City Park	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0.00000	0.00000	498,135	166,045	11,100.0

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	250.000

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Manufacturing	3,374,450	531.983	0.0330	0.0040	0.00000
Unrefrigerated Warehouse-No Rail	1,607,918	531.983	0.0330	0.0040	0.00000
General Office Building	605,974	531.983	0.0330	0.0040	0.00000
Parking Lot	114,361	531.983	0.0330	0.0040	0.00000
City Park	0.00000	531.983	0.0330	0.0040	0.00000

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Manufacturing	35,250,131	0.00000
Unrefrigerated Warehouse-No Rail	35,995,681	0.00000
General Office Building	4,265,610	0.00000
Parking Lot	0.00000	0.00000
City Park	0.00000	2,034,188

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Manufacturing	189.017	0.00000
Unrefrigerated Warehouse-No Rail	146.318	0.00000
General Office Building	22.3200	0.00000
Parking Lot	0.00000	0.00000
City Park	0.12900	0.00000

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Manufacturing	Other commercial A/C and heat pumps	R-410A	2,088.00	0.30000	4.00000	4.00000	18.0000
General Office Building	Household refrigerators and/or freezers	R-134a	1,430.00	0.01679	0.60000	0.00000	1.000000
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000

City Park	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430.00	0.03750	1.000000	0.00000	1.000000

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	6.19000	annual days of extreme heat
Extreme Precipitation	4.30000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00000	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	22.1904
AQ-PM	70.0436
AQ-DPM	59.7635
Drinking Water	35.6563
Lead Risk Housing	89.4014
Pesticides	51.1724
Toxic Releases	98.4246
Traffic	97.5500
Effect Indicators	—
CleanUp Sites	19.2236
Groundwater	66.8770
Haz Waste Facilities/Generators	82.3163
Impaired Water Bodies	86.9593
Solid Waste	66.6896
Sensitive Population	—
Asthma	84.8330
Cardio-vascular	90.8400
Low Birth Weights	29.8820
Socioeconomic Factor Indicators	—
Education	79.7267
Housing	10.1774
Linguistic	39.8295
Poverty	46.8216
Unemployment	32.2749

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	79.019633
Employed	69.52393173
Median HI	71.69254459
Education	—
Bachelor's or higher	30.32208392
High school enrollment	22.2764019
Preschool enrollment	48.45374054
Transportation	—
Auto Access	34.2871808
Active commuting	14.98780957
Social	—
2-parent households	95.7141024
Voting	60.56717567
Neighborhood	—
Alcohol availability	22.6356987
Park access	36.98190684
Retail density	33.10663416
Supermarket access	2.399589375
Tree canopy	42.07622225
Housing	—
Homeownership	84.58873348
Housing habitability	83.49801104
Low-inc homeowner severe housing cost burden	94.49505967
Low-inc renter severe housing cost burden	95.79109457

Uncrowded housing	39.5996407
Health Outcomes	—
Insured adults	57.69280123
Arthritis	76.8
Asthma ER Admissions	20.1
High Blood Pressure	79.9
Cancer (excluding skin)	57.8
Asthma	86.2
Coronary Heart Disease	66.7
Chronic Obstructive Pulmonary Disease	81.8
Diagnosed Diabetes	43.0
Life Expectancy at Birth	27.5
Cognitively Disabled	58.3
Physically Disabled	33.4
Heart Attack ER Admissions	30.5
Mental Health Not Good	62.3
Chronic Kidney Disease	55.3
Obesity	54.6
Pedestrian Injuries	19.6
Physical Health Not Good	56.1
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	35.4
Current Smoker	67.4
No Leisure Time for Physical Activity	52.7
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	53.3
Elderly	54.5
English Speaking	48.5
Foreign-born	58.4
Outdoor Workers	29.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	30.0
Traffic Density	95.7
Traffic Access	23.0
Other Indices	—
Hardship	44.5
Other Decision Support	—
2016 Voting	14.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	83.0000
Healthy Places Index Score for Project Location (b)	62.0000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	Wilmington Long Beach Carson

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

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Land Use	Adjusted parking lot acreage from default so that the total reflects the net site acreage of 13.32.
Construction: Construction Phases	Extended architectural coating phase length to overlap with paving and building construction / a total of 19 months of construction.
Operations: Vehicle Data	Updated trips for Manufacturing and Unrefrigerated Warehouse per transportation analysis. No trips attributed to other land uses.
Operations: Fleet Mix	Truck fleet mix included in assumptions spreadsheet. Manufacturing fleet mix adjusted to reflect only truck trips.
Operations: Energy Use	CalEEMod default natural gas usage reassigned to electricity--Project will not use natural gas for heating and water.

8.3. Land Use

Model Parameter	Units	Default Value	New Value
Lot Area	acre	2.99700	4.24700
Landscape Area	sq. ft	—	0.00000

8.4. Construction

8.4.1. Construction Phases

Phase Type	Phase Name	Model Parameter	Default Value	New Value
Architectural Coating	Architectural Coating	Start Date	4/21/2028	3/1/2028
Architectural Coating	Architectural Coating	End Date	5/19/2028	5/31/2028
Architectural Coating	Architectural Coating	Work Days per Phase	20.0000	66.0000

8.5. Operations

8.5.1. Mobile Sources

8.5.1.1. Vehicle Data

Land Use	Model Parameter	Units	Default Value	New Value
Manufacturing	Weekday Trip Rate	size/day	3.93000	0.94470
Manufacturing	Saturday Trip Rate	size/day	6.42000	0.94470
Manufacturing	Sunday Trip Rate	size/day	5.09000	0.94470
Manufacturing	Non-Res H-W Trip Length	miles	14.8547	0.00000
Manufacturing	Non-Res W-O Trip Length	miles	7.88163	0.00000
Manufacturing	Non-Res O-O Trip Length	miles	6.73948	20.0000
Manufacturing	Non-Res H-W Trip	%	37.4368	0.00000
Manufacturing	Non-Res W-O Trip	%	31.1973	0.00000
Manufacturing	Non-Res O-O Trip	%	31.3659	100.0000
Unrefrigerated Warehouse-No Rail	Weekday Trip Rate	size/day	1.74000	7.10500
Unrefrigerated Warehouse-No Rail	Saturday Trip Rate	size/day	1.74000	7.10500
Unrefrigerated Warehouse-No Rail	Sunday Trip Rate	size/day	1.74000	7.10500
General Office Building	Weekday Trip Rate	size/day	9.74000	0.00000
General Office Building	Saturday Trip Rate	size/day	2.21000	0.00000
General Office Building	Sunday Trip Rate	size/day	0.70000	0.00000
General Office Building	Non-Res H-W Trip Length	miles	14.8547	0.00000
General Office Building	Non-Res W-O Trip Length	miles	7.88163	0.00000
General Office Building	Non-Res O-O Trip Length	miles	6.73948	0.00000
General Office Building	Non-Res H-W Trip	%	37.4368	0.00000
General Office Building	Non-Res W-O Trip	%	31.1973	0.00000
General Office Building	Non-Res O-O Trip	%	31.3659	0.00000
Parking Lot	Non-Res H-W Trip Length	miles	14.8547	0.00000

Parking Lot	Non-Res W-O Trip Length	miles	7.88163	0.00000
Parking Lot	Non-Res O-O Trip Length	miles	6.73948	0.00000
Parking Lot	Non-Res H-W Trip	%	37.4368	0.00000
Parking Lot	Non-Res W-O Trip	%	31.1973	0.00000
Parking Lot	Non-Res O-O Trip	%	31.3659	0.00000
City Park	Weekday Trip Rate	size/day	0.78000	0.00000
City Park	Saturday Trip Rate	size/day	1.96000	0.00000
City Park	Sunday Trip Rate	size/day	2.19000	0.00000
City Park	Non-Res H-W Trip Length	miles	14.8547	0.00000
City Park	Non-Res W-O Trip Length	miles	7.88163	0.00000
City Park	Non-Res O-O Trip Length	miles	6.73948	0.00000
City Park	Non-Res H-W Trip	%	37.4368	0.00000
City Park	Non-Res W-O Trip	%	31.1973	0.00000
City Park	Non-Res O-O Trip	%	31.3659	0.00000

8.5.1.2. Fleet Mix

Land Use	Season	Model Parameter	Units	Default Value	New Value
Manufacturing	A	Heavy-Heavy-Duty Trucks	%	1%	62%
Manufacturing	A	Passenger Cars	%	49%	0%
Manufacturing	A	Light-Duty Trucks 1	%	4%	0%
Manufacturing	A	Light-Duty Trucks 2	%	24%	0%
Manufacturing	A	Light Heavy-Duty Trucks 1	%	3%	0%
Manufacturing	A	Light Heavy-Duty Trucks 2	%	1%	17%
Manufacturing	A	Motorcycles	%	2%	0%
Manufacturing	A	Medium-Duty Trucks	%	14%	0%
Manufacturing	A	Motor Homes	%	< 0.5%	0%
Manufacturing	A	Medium-Heavy-Duty Trucks	%	1%	21%
Manufacturing	A	Other Buses	%	< 0.5%	0%

Manufacturing	A	School Buses	%	< 0.5%	0%
Manufacturing	A	Urban Buses	%	< 0.5%	0%
Manufacturing	S	Heavy-Heavy-Duty Trucks	%	1%	62%
Manufacturing	S	Passenger Cars	%	49%	0%
Manufacturing	S	Light-Duty Trucks 1	%	4%	0%
Manufacturing	S	Light-Duty Trucks 2	%	24%	0%
Manufacturing	S	Light Heavy-Duty Trucks 1	%	3%	0%
Manufacturing	S	Light Heavy-Duty Trucks 2	%	1%	17%
Manufacturing	S	Motorcycles	%	2%	0%
Manufacturing	S	Medium-Duty Trucks	%	14%	0%
Manufacturing	S	Motor Homes	%	< 0.5%	0%
Manufacturing	S	Medium-Heavy-Duty Trucks	%	1%	21%
Manufacturing	S	Other Buses	%	< 0.5%	0%
Manufacturing	S	School Buses	%	< 0.5%	0%
Manufacturing	S	Urban Buses	%	< 0.5%	0%
Manufacturing	W	Heavy-Heavy-Duty Trucks	%	1%	62%
Manufacturing	W	Passenger Cars	%	49%	0%
Manufacturing	W	Light-Duty Trucks 1	%	4%	0%
Manufacturing	W	Light-Duty Trucks 2	%	24%	0%
Manufacturing	W	Light Heavy-Duty Trucks 1	%	3%	0%
Manufacturing	W	Light Heavy-Duty Trucks 2	%	1%	17%
Manufacturing	W	Motorcycles	%	2%	0%
Manufacturing	W	Medium-Duty Trucks	%	14%	0%
Manufacturing	W	Motor Homes	%	< 0.5%	0%
Manufacturing	W	Medium-Heavy-Duty Trucks	%	1%	21%
Manufacturing	W	Other Buses	%	< 0.5%	0%
Manufacturing	W	School Buses	%	< 0.5%	0%
Manufacturing	W	Urban Buses	%	< 0.5%	0%

8.5.3. Energy Usage

Land Use	Model Parameter	Units	Default Value	New Value
Manufacturing	Electricity	kWh/yr	1,462,250	3,374,450
Manufacturing	Electricity (Subject to Title 24)	kWh/yr	1,247,346	2,878,515
Manufacturing	Electricity (Not Subject to Title 24)	kWh/yr	214,903	495,935
Manufacturing	Natural Gas	kBTU/yr	6,524,428	0.00000
Manufacturing	Natural Gas (Subject to Title 24)	kBTU/yr	2,456,238	0.00000
Manufacturing	Natural Gas (Not Subject to Title 24)	kBTU/yr	4,068,190	0.00000
Unrefrigerated Warehouse-No Rail	Electricity	kWh/yr	728,531	1,607,918
Unrefrigerated Warehouse-No Rail	Electricity (Subject to Title 24)	kWh/yr	484,585	1,069,511
Unrefrigerated Warehouse-No Rail	Electricity (Not Subject to Title 24)	kWh/yr	243,947	538,407
Unrefrigerated Warehouse-No Rail	Natural Gas	kBTU/yr	3,000,467	0.00000
Unrefrigerated Warehouse-No Rail	Natural Gas (Subject to Title 24)	kBTU/yr	116,778	0.00000
Unrefrigerated Warehouse-No Rail	Natural Gas (Not Subject to Title 24)	kBTU/yr	2,883,689	0.00000
General Office Building	Electricity	kWh/yr	427,687	605,974
General Office Building	Electricity (Subject to Title 24)	kWh/yr	346,077	490,344
General Office Building	Electricity (Not Subject to Title 24)	kWh/yr	81,609.5	115,630
General Office Building	Natural Gas	kBTU/yr	608,315	0.00000
General Office Building	Natural Gas (Subject to Title 24)	kBTU/yr	481,837	0.00000
General Office Building	Natural Gas (Not Subject to Title 24)	kBTU/yr	126,478	0.00000
Parking Lot	Electricity	kWh/yr	162,059	114,361
Parking Lot	Electricity (Subject to Title 24)	kWh/yr	162,059	114,361

Appendix B

Energy Calculations

Construction Fuel Consumption

On-Site Diesel ¹ (off-road construction Equipment)	MTCO ₂ e	Gallons of Fuel ⁴	County Fuel in 2026 (Start of Construction)	Percent
Demolition	31	3,074		
Site Preparation/Grading	116	11,468		
Building Construction	328	32,325		
Paving	14	1,360		
Architectural Coating	4	395		
Total	494	48,622	3,798,808,000	0.001%

Off-Site Diesel ¹ (on-road construction trips)	MTCO ₂ e	Gallons of Fuel ⁴	County Fuel in 2026 (Start of Construction)	Percent
Demolition	80	7,872		
Site Preparation/Grading	0	0		
Building Construction	236	23,232		
Paving	0	0		
Architectural Coating	0	0		
Total	316	31,103	3,798,808,000	0.001%

Off-Site Gasoline ²	MTCO ₂ e	Gallons of Fuel ⁴	County Fuel in 2026 (Start of Construction)	Percent
Demolition	2	204		
Site Preparation/Grading	5	532		
Building Construction	241	27,378		
Paving	2	196		
Architectural Coating	10	1,180		
Total	260	29,491	3,798,974,000	0.001%

Total Diesel Fuel	79,725	79,725	3,798,808,000	0.002%
Total Gasoline Fuel		29,491	3,798,974,000	0.001%
Total Construction Fuel	1,069	109,217		

Construction Water Energy

Daily Soil Disturbance ¹	4.0	acres
Days of Soil Disturbance ²	40	days
Water Concentration ³	3,020	gallons/acre
Water Energy Intensity ⁴	5,306	kWh/MG
Total Construction Water	0.48	million gallons
Construction Water Energy	2,564	kWh
	0.0026	GWh
Los Angeles County Annual Electricity	62,908	GWh
Percentage Increase	0.00000%	

Notes:

¹ Total daily acres disturbed from offroad equipment per CalEEMod (3.0 Construction Emissions Detail) and maximum SCAQMD LST values for soil-disturbing equipment.

² Number of days of construction with soil-disturbing equipment per CalEEMod (5.1 Construction Schedule).

³ Water application rate per Air and Waste Management Association's Air Pollution Engineering Manual.

⁴ Water energy intensity factor for subarea per CalEEMod User Guide, Appendix G, Tab G-32.

Operational Fuel

Vehicle Type	Annual VMT ²	MPC ³	Annual Fuel (Gallons)	Fuel Type	Los Angeles County Gallons - 2028 ⁴	RS Percent
Passenger Cars (Gasoline)	3,846,956	21.6	178,100	Gas	3,299,104,753	0.005%
Light/Medium Trucks	601,870	17.2	34,992	Diesel	534,835,402	0.007%
Heavy Trucks/Other	693,138	6.1	113,629	Diesel	534,835,402	0.021%
Total Diesel	5,141,963		148,622		534,835,402	0.028%

Land Use ⁵	VMT Total	Passenger Car VMT	Light/Medium Trucks VMT	Heavy Trucks/Other VMT
Unrefrigerated Warehouse	4,090,739	3,846,956	206,538	37,245
Manufacturing	1,051,225	-	395,332	655,893
General Office Building				
Total	5,141,964	3,846,956	601,870	693,138

Land Use ⁶	LDA	LDT1	LDT2	MCY	MDV	LHD1	LHD2	MHD	OBUS	UBUS	SBUS	MH	HHD
Unrefrigerated Warehouse	48,7471	4.1652	24.4082	2.2301	14.4900	2.7417	0.7119	1.1104	0.0836	0.0617	0.0651	0.2746	0.9105
Manufacturing							16.8091	20.7977					62.3932
General Office Building	48.7471	4.1652	24.4082	2.2301	14.4900	2.7417	0.7119	1.1104	0.0836	0.0617	0.0651	0.2746	0.9105

Operational Fuel

UNMITIGATED							
Source	# of Generators	Fuel Consumption (100%/75% Load) gal/hr	Annual Hours of Operation	Annual Fuel (Gallons)	Fuel Type	Los Angeles County Gallons ³	SC Percent
Generators	1	204.30	50	10,215	Diesel	534,835,402	0.0019%

Source: Engine Specifcation Data Sheet. Cat 3516E 3 MW Diesel Generator Sets.

Operational Water Energy

UNMITIGATED		
Unmitigated Indoor	75.5	million gallons
Indoor Energy Intensity Factor ¹	6,807	kWh/MG
Unmitigated Outdoor	2	million gallons
Outdoor Energy Intensity Factor ²	5,306	kWh/MG
Operational Water Energy	524,800	kWh
Operational Water Energy	0.5248	GWh
Los Angeles County Annual Electricity	62,908	GWh
Percentage Increase	0.0008%	
MITIGATED		
Mitigated Indoor	75.5	million gallons
Indoor Energy Intensity Factor ¹	6,807	kWh/MG
Mitigated Outdoor	2	million gallons
Outdoor Energy Intensity Factor ²	5,306	kWh/MG
Operational Water Energy	524,800	kWh
Operational Water Energy	0.5248	GWh
Los Angeles County Annual Electricity	62,908	GWh
Percentage Increase	0.0008%	

Electricity/Natural Gas Energy

UNMITIGATED			
	Unmitigated Project Annual Energy	Los Angeles County Annual Energy ³	Percentage Increase
Electricity (kWh/yr)	5,702,703	62,908,000,000	0.0091%
Electricity (GWh/yr)	5.7027	62,908	0.0091%
Natural Gas (kBTU/yr)	0	295,400,000,000	0.0000%
Natural Gas (therms/yr)	0	2,954,000,000	0.0000%
MITIGATED			
	Mitigated Project Annual Energy	Los Angeles County Annual Energy ³	Percentage Increase
Electricity (kWh/yr)	5,702,703	62,908,000,000	0.0091%
Electricity (GWh/yr)	5.7027	62,908	0.0091%
Natural Gas (kBTU/yr)	0	295,400,000,000	0.0000%
Natural Gas (therms/yr)	0	2,954,000,000	0.0000%

Appendix C

CAAP Checklist

LONG BEACH DEVELOPMENT SERVICES | PLANNING BUREAU

Climate Action + Adaptation Plan Consistency Review Checklist

Purpose of the Climate Action + Adaptation Plan Consistency Review Checklist

In November 2020, the City of Long Beach adopted the Climate Action + Adaptation Plan (CAAP), which is a comprehensive planning document outlining the City's proposed approach both to address climate impacts on the city and to reduce the City's impact on the climate by reducing greenhouse gas (GHG) emissions.

The CAAP includes 21 priority GHG emission reduction "Mitigation Actions"¹ that shall be implemented for the City to achieve its proportional share of State GHG emission reductions for the near-term target year 2030 (referred to herein as *CAAP Actions*). These actions are organized into three sectors: 1) Building Energy; 2) Waste; and 3) Transportation. The CAAP also includes 40 "Adaptation Actions" that are identified to improve the ability of Long Beach and its residents and businesses to adapt to climate change, and related impacts now and in the future.² These actions are organized into four climate impacts: 1) Extreme Heat; 2) Air Quality; 3) Drought; and 4) Sea level rise and flooding.

The purpose of the Climate Action + Adaptation Plan Consistency Review Checklist (referred to herein as the *CAAP Checklist*) is to:

1. Require projects to implement relevant GHG emission reduction actions from the CAAP.
2. Require new development projects to implement relevant Adaptation Actions from the CAAP.
3. Provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).

The CAAP will also help the City comply with various local, regional, state, and federal regulations to significantly reduce GHG emissions. The City is obligated under CEQA, Assembly Bill 32 (The California Global Warming Solutions Act of 2006), Senate Bill (SB) 375 (The Sustainable Communities and Climate Protection Act of 2008), and various California Executive

¹ It should be noted that the CAAP's "mitigation actions" are not mitigation measures as defined by CEQA; they are actions to "mitigate" GHG emissions. This document refers to these as "CAAP Actions" throughout.

² Adaptation actions were developed based on the 2018 Long Beach Climate Stressors Review (Appendix D to the CAAP) and the Long Beach Climate Change Vulnerability Assessment Results (Appendix C to the CAAP).

Orders to do its part to reduce GHG emissions. Generally, statewide targets aim to reduce emissions to 1990 levels by 2020, to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. CEQA Guidelines Section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of greenhouse gases. The CAAP itself, the CAAP Checklist (this document), and the adopted programmatic Environmental Impact Report (EIR) for the CAAP together meet all requirements of §15183.5(b) contained in the CEQA Guidelines. Accordingly, the CAAP represents the City of Long Beach's qualified climate action plan in compliance with CEQA.

CEQA Compliance and Background Information

The City's near-term 2030 target was selected based on guidance provided in CARB's 2017 California Climate Change Scoping Plan and was developed to demonstrate consistency with the statewide 2030 target.³ The City's 2030 target is established on a per service population (SP)⁴ basis and aims to achieve emissions rates of 3.04 metric tons of carbon dioxide equivalent (MTCO₂e) per SP (MTCO₂e/SP). This compares to the City's 2030 business-as-usual forecast of 3.34 MTCO₂e/SP. Based on the City's SP growth estimates, the 2030 target emissions level is 1,984,272 MTCO₂e per year. GHG reductions of approximately 192,659 MTCO₂e will be required to achieve this target, or an overall reduction of approximately 0.3 MTCO₂e/SP.

As described in the CAAP, these GHG reductions will occur through a combination of City initiatives in various plans and policies and will provide reductions from both existing and new developments. The CAAP Checklist specifically applies to proposed discretionary projects that require environmental review pursuant to CEQA. Therefore, the CAAP Checklist is a critical implementation tool in the City's overall strategy to reduce GHG emissions. Implementation of applicable CAAP Actions in new development projects will help the City achieve incremental reductions toward its target.

Projects that are consistent with the demographic forecasts and land use assumptions used in the CAAP (i.e., consistent with the City's General Plan) can utilize the CAAP Checklist to demonstrate consistency with the CAAP, and if consistent, can tier from the existing programmatic environmental review contained in the adopted Environmental Impact Report (EIR) for the CAAP. In doing so; pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b); a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable. This approach is consistent with the recommendations of the Association of Environmental Professionals (AEP) Climate Change Committee (2016) for tiering from qualified GHG reduction plans that demonstrate substantial

³ City of Long Beach, July 2020, *City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo #3*.

⁴ Service population = total population plus employment.

progress toward meeting the next milestone Statewide planning reduction target (i.e., a 40 percent reduction below 1990 levels by 2030 as set forth by SB 32).⁵

This CAAP Checklist provides a mechanism for projects to specifically identify “those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project” per §15183.5(b)(2)) of the CEQA Guidelines.

GHG emissions associated with construction from a land use development project are generally orders of magnitude lower than the operational emissions. This is because construction emissions are typically short in duration compared to the project’s overall lifetime. Therefore, construction emissions can be assessed qualitatively as part of related CEQA GHG emissions analysis. However, some projects may have long construction periods or entail substantial excavation and grading that could result in construction-related GHG emissions that may be considered significant. Thus, the City retains the discretion on a project-by-project basis to consider whether a project’s construction-related GHG emissions could be cumulatively considerable and require more detailed quantitative CEQA GHG emissions analysis and mitigation.

Projects that are not consistent with the CAAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this CAAP Checklist to the extent feasible, as defined by CEQA and subject to the City’s discretion.⁶ Cumulative GHG impacts would be significant for any project that is not consistent with the CAAP.

As required by CEQA Guidelines Section 15183.5(b)(1)(E), the City will monitor strategy implementation and make updates, as necessary, to maintain an appropriate trajectory to the 2030 GHG target. CAAP updates will occur approximately every 5 years and can be scheduled to align with other City milestones, such as General Plan Element updates or budgetary cycles. If regular monitoring shows the CAAP is on track toward the GHG target, then CAAP updates may not be necessary. The City will also develop a comprehensive CAAP update following the current 2030 target year to provide greater analysis of the actions and implementation steps necessary to achieve the City’s 2045 carbon neutrality goal. The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAAP or local, State, or federal law.

Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*, provides the quantitative basis for the CAAP Action consistency requirements. This document demonstrates how, based on substantial evidence, implementing these requirements on a project-by-project basis will collectively achieve the CAAP’s target

⁵ Association of Environmental Professionals, 2016, *Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*, October 18, available at https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf.

⁶ CEQA Guidelines Section 21061.1 defines feasible as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.”

emissions level for new development, as required by CEQA Guidelines Section 15183.5(b)(1)(D).

CAAP Checklist Submittal Requirements

The CAAP Checklist is required to accompany the City’s Environmental Determination Application Checklist for all projects and plans subject to CEQA review, whether supported by private or government (local or State) funding, proposed within the City limits. The CAAP Checklist is designed to assist the project applicant in identifying the minimum GHG emission reduction actions and other applicable sustainability-focused requirements specific to a proposed project or plan. However, it may be necessary to supplement the completed CAAP Checklist with supporting materials, calculations, or certifications to demonstrate compliance with the CAAP Actions and other applicable sustainability-focused requirements. The CAAP Checklist will be included in the respective project or plan conditions of approval.

Consistency Checklist Applicability

The CAAP Checklist is only required for discretionary projects⁷ that are subject to and not exempt from CEQA. Projects that are exempt from CEQA are deemed to be consistent with the CAAP, and no further review is necessary, with the exception of the Class 32 “In-Fill Development Projects” categorical exemption (CEQA Guidelines Section 15332), for which Projects are required to demonstrate consistency with the CAAP through this Consistency Review Checklist.

Instructions for Consistency Checklist

Project applicants shall complete the following steps to demonstrate conformance with the City of Long Beach Climate Action + Adaptation Plan for the proposed project.

Step 1. Demonstrate consistency with the City’s General Plan (Table 1)

Step 2. Determine if project screens out of CAAP Action consistency (Table 1)

Step 3. Demonstrate consistency with the CAAP GHG Emission Reduction Actions (Table 1)

Step 4. Identify alternative project emission reduction measures and additional GHG reductions (Table 2)

Step 5. Demonstrate consistency with the CAAP Adaptation Actions (Table 3)

All projects must complete **Step 1. General Plan Consistency**, **Step 2. CAAP Action Consistency Screening**, **Step 3. CAAP Action Consistency Checklist**, and **Step 5. Adaptation Action**

⁷ In this context a project is any action that meets the definition of a “Project” in Section 15378 of the State CEQA Guidelines.

Consistency Checklist. Projects that propose alternative GHG emission reduction measures must also complete **Step 4. Alternative Project Measures and Additional GHG Reductions.**

The following process, illustrated in **Figure 1**, explains how to demonstrate a plan/project's consistency with the CAAP's GHG emissions reduction actions (*CAAP Actions*) and the CAAP's *Adaptation Actions* and, thereby, tier from the adopted EIR for the CAAP.

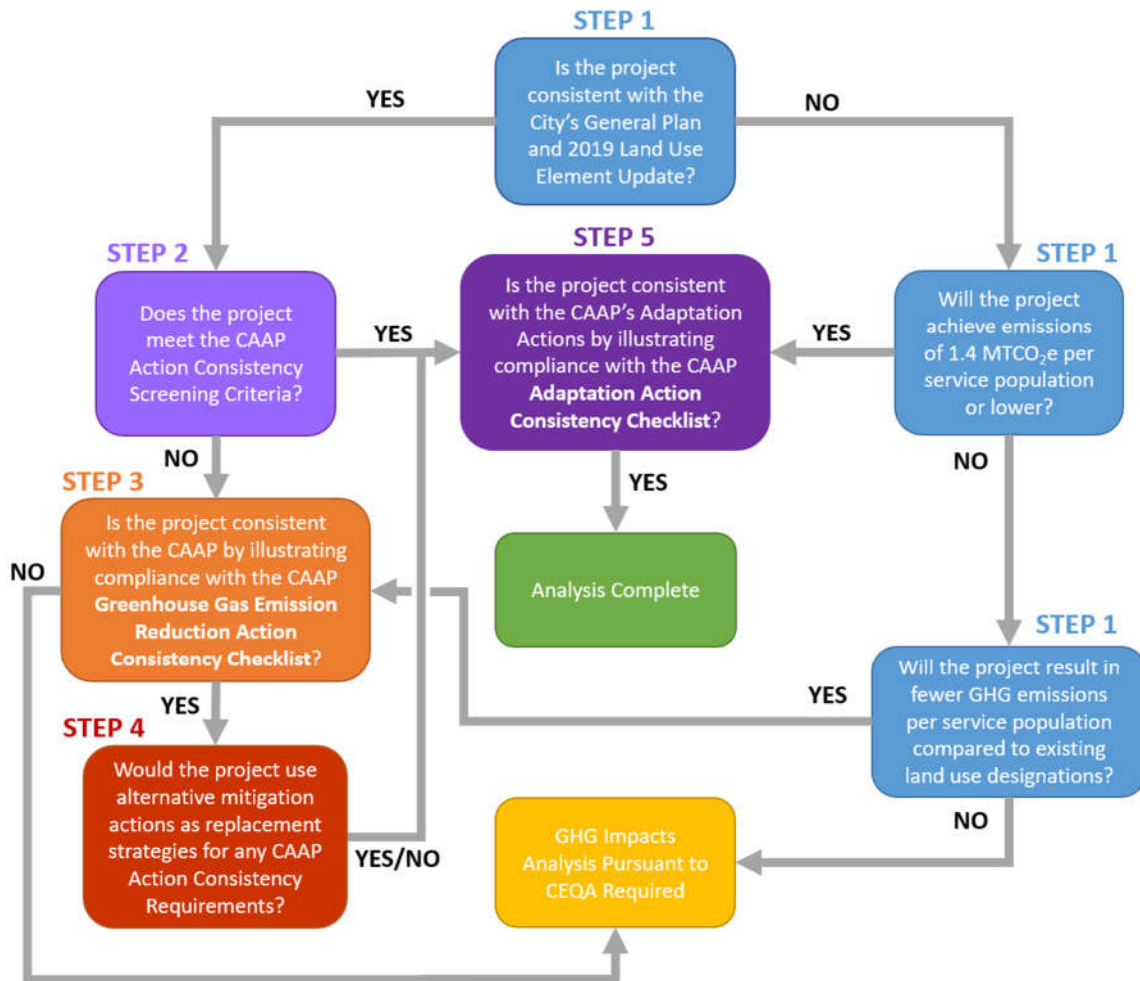


Figure 1
Determining Consistency with the City's Climate Action + Adaptation Plan

Step 1: Demonstrate consistency with the City's General Plan

All projects must demonstrate consistency with the City's General Plan and the existing land use designation of the 2019 Land Use Element (LUE). Alternatively, if a project is not consistent with the land use designation of the 2019 LUE, the project must identify an alternative compliance mechanism. Complete the *General Plan and 2019 Land Use Element Consistency* section of **Table 1 General Plan and CAAP Action Consistency Checklist** below.

The process for determining general plan consistency (included in Table 1) is as follows:

1. Is the proposed project consistent with the existing land use designation of the 2019 Land Use Element? If yes, move to **Step 2** below. If no:
2. Does the project achieve emissions of 1.4 MTCO₂e per service population⁸ or less? If yes, the project is considered consistent with the CAAP and the analysis is complete (no project-specific GHG impact analysis would be required). If not:
3. Does the project result in fewer GHG emissions per service population than the future no-project development based on existing land use designations at the project site? If yes, move to **Step 2** below. If no, the proposed project may not tier from the CAAP's EIR and must prepare a comprehensive project-specific analysis of GHG emissions and impacts and incorporate the measures in this Checklist to the extent feasible.

If the project is not consistent with the existing land use designation of the 2019 LUE (#1 above), the applicant must submit a comprehensive quantitative project-specific analysis of all GHG emissions, consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development, to demonstrate that the alternative compliance mechanisms are met (#2, #3, and #4 above).

Please see Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation* for additional discussion.

Step 2: Determine if project screens out of CAAP Action consistency

Certain projects may screen out of the CAAP Action Consistency Checklist if they meet certain criteria. These criteria are designed to ensure high efficiency and low GHG emissions and describe projects that would generally be consistent with the CAAP's GHG emission reduction actions (CAAP Actions) for new development. Complete the *CAAP Action Screening Criteria* section of **Table 1** below.

⁸ The Service Population for a project is the project's total anticipated residential population plus total anticipated employment provided by the project. For example, if a project would construct 100 housing units at an average occupancy of 2.5 people per unit, the total population would be 250; if the project would support 50 new jobs, the project's service population would therefore be 250 + 50 = 300.

1. If the project would achieve emissions of 1.4 MTCO₂e per service population or less, the project is considered consistent with the CAAP Actions and the analysis is complete (no project-specific GHG analysis would be required).

Additionally, projects may skip completion of the *Transportation* subsection of the *CAAP Action Screening Criteria* section of Table 1 below if they meet one of the following criteria:

1. Located in a state-defined Transit Priority Area or High Quality Transit Area (HQTa)
2. Includes local-serving retail (e.g., grocery stores, pharmacies, or restaurants) less than 50,000 square feet.
3. Includes 100% affordable housing (excluding manager's units)
4. Would result in fewer than 110 daily trips per day.

If the project meets one of these criteria, please complete the *Building Energy* and *Waste* sections of the CAAP Checklist.

All projects that meet these screening criteria for CAP Action Consistency must still complete **Step 3. CAAP Adaptation Action Consistency**, as provided in Table 3.

Step 3: Demonstrate consistency with CAAP GHG Emission Reduction Actions

Table 1 identifies the CAAP Action consistency requirements for projects. Projects must demonstrate consistency with the CAAP Action requirements listed in Table 1 or document why the strategies are not applicable or are infeasible.⁹ The corresponding CAAP Actions are indicated in the table to provide additional context. The full text of the GHG emission reduction actions are provided in Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*.

All applicants shall complete the following steps for the *Building Energy*, *Waste*, and *Transportation* sections of **Table 1** below:

1. Review the project consistency options described in the column titled "*CAAP Action Consistency Requirement*".
2. Use the check boxes in the column titled "Project Consistency" to indicate if the "Project Complies," the requirement is "Not Applicable," the "Project Does Not Comply," or if there is an "Alternative Measure Proposed."
3. Provide a qualitative analysis of the proposed project's compliance with the CAAP Action requirements in the column titled "Description of Project Measure(s) / Documentation of Compliance." This will be the basis for CEQA analysis to demonstrate compliance with the CAAP and by extension, with SB 32. The qualitative analysis should provide:

⁹ Please note that the CAAP Action requirements are not mitigation measures as defined by CEQA.

- a. A description of which consistency options are included as part of the proposed project, or;
- b. A description of why the consistency requirement is not applicable to the proposed project, or;
- c. A description of why the consistency options are infeasible. If applicants select ‘Project Does Not Comply’ or ‘Alternative Measure Proposed’, they must complete Table 2 to document what alternative project measures will be implemented to achieve a similar level of GHG reduction and how those reduction estimates were calculated.

The CAAP Action consistency requirements are listed as either “Tier 1” or “Tier 2.” These two levels are defined as follows:

Tier 1: Required for all discretionary projects to demonstrate consistency with the CAAP.

Tier 2: Encouraged for all discretionary projects to the maximum extent feasible. Although these are not required, projects are strongly encouraged to implement as many of these as feasible.

Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*, provides the quantitative basis for the CAAP Action consistency requirements.

Step 4: Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions

Projects that propose alternative GHG emission reduction measures to those identified in Table 1 or propose to include additional GHG emission reduction measures beyond those described in Table 1 shall provide a summary explanation of the proposed measures and demonstrate GHG reductions achievable through the proposed measures.¹⁰ Documentation for these alternative or additional project measures shall be documented in **Table 2 Applicant Proposed Alternative Project Emission Reduction Measures**. Any applicants who select ‘Project Does Not Comply’ or ‘Alternative Measure Proposed’ in Table 1 must complete the following steps for Table 2.

1. In the column titled “Description of Alternative / Replacement Measure” provide a qualitative description of what measure will be implemented, why it is proposed, and how it will reduce GHG emissions.
2. In the column titled “Description of GHG Reduction Estimate” demonstrate how the alternative project measure would achieve the same or greater level of GHG emission reductions as the CAAP Action requirement that it replaces. Documentation and calculation files must be attached separately.

¹⁰ Please note that the alternative GHG emission reduction measures are not mitigation measures as defined by CEQA.

In the column titled “Proposed Measure Implementation” identify how the measure will be implemented: incorporated as part of the project design or as an additional measure that is not part of the project (e.g., an offsite emission reduction program sponsored by the applicant).

Carbon offset credits are not permitted to be used as alternative project emission reduction measures.

Step 5: Demonstrate consistency with the CAAP Adaptation Actions

Table 3 *CAAP Adaptation Action Consistency Checklist* identifies the CAAP Adaptation Action consistency requirements for projects. Projects must demonstrate consistency with the CAAP Adaptation Action requirements listed in Table 3 or document why the strategies are not applicable or are infeasible. The corresponding CAAP Adaptation Actions are indicated in the table to provide additional context. The full text of the adaptation actions are provided in Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*.

All applicants shall complete the following steps for **Table 2** below:

1. Review the project consistency options described in the column titled “*CAAP Adaptation Action Consistency Requirement*”.
2. Use the check boxes in the column titled “Project Consistency” to indicate if the “Project Complies,” the requirement is “Not Applicable,” or the “Project Does Not Comply.”
3. Provide a qualitative analysis of the proposed project’s compliance with the CAAP Adaptation Action requirements in the column titled “Description of Project Measure(s) / Documentation of Compliance.” This will be the basis for CEQA analysis to demonstrate compliance with the CAAP and by extension SB 32. The qualitative analysis should provide:
 - a. A description of which consistency requirements are included as part of the proposed project, or;
 - b. A description of why the consistency requirements are not applicable to the proposed project, or;
 - c. A description of why the consistency requirements are infeasible.

CAAP Consistency Review Checklist

Table 1 *General Plan and CAAP Action Consistency Checklist* allows the applicant to demonstrate compliance with the City’s General Plan and the CAAP’s GHG emission reduction actions. This table addresses **Step 1. General Plan Consistency**, **Step 2. CAAP Action Consistency Screening**, and **Step 3. CAAP Action Consistency Checklist**. All projects are required to complete this checklist.

Table 2 *Applicant Proposed Alternative Project Emission Reduction Measure* allows the project applicant to document alternative GHG emission reduction measures utilized to demonstrate compliance with the Table 1 CAAP Action consistency requirements. This table addresses **Step 4. Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions**. Only projects proposing to use alternative GHG emission reduction measures are required to complete this checklist.

Table 3 *CAAP Adaptation Action Consistency Checklist* allows the applicant to demonstrate compliance with the CAAP’s Adaptation Actions. This table addresses **Step 5. Demonstrate consistency with the CAAP Adaptation Actions**. All projects are required to complete this checklist.

TABLE 1
CAAP GREENHOUSE GAS EMISSION REDUCTION ACTION CONSISTENCY CHECKLIST

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
STEP 1: General Plan and 2019 Land Use Element Consistency		
1. The Project is Consistent with the City's General Plan Land Use Element The growth projections outlined in the 2019 General Plan Land Use Element were used in the City's CAAP to estimate citywide GHG emissions over time. Therefore, new development projects must be consistent with the Land Use Element to be consistent with the CAAP. In order for City staff to determine a project's consistency with the Land Use Element, please answer the following question and provide explanation with supporting documentation. Is the proposed project consistent with the existing land use designation of the 2019 Land Use Element? If "Yes," proceed to the "CAAP Action Consistency" section below. If "No," proceed to Item 2.	As displayed in Map LU-7 (Placetypes) in the 2019 Long Beach General Plan Land Use Element, the Project site falls under the Industrial (I) Placetype. Uses for this designation include research and development, storage, manufacturing, and a variety of other related endeavors and accessory commercial uses. The Project would include a 332,090 square foot (sf) industrial building, with uses consisting of manufacturing, warehousing, and ancillary office space, consistent with the uses allowed in the Industrial Placetype. The Project is consistent with the City's General Plan Land Use Element, therefore, analysis proceeds to the "CAAP Action Consistency" section below.	☒ Yes ☐ No
2. The Project Achieves emissions of 1.4 MTCO₂e per service population or less Does the project achieve emissions of 1.4 MTCO₂e per service population or less? The project must conduct a comprehensive quantitative project-specific analysis of all GHG emissions, consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development, to demonstrate that the project achieves this efficiency level. If "Yes," the project is consistent with the CAAP and no additional analysis is needed (no project-specific GHG impact analysis would be required). If "No," proceed to Item 3.	Not Applicable: The Project is consistent with the City's General Plan Land Use Element, therefore, analysis proceeds to the "CAAP Action Consistency" section below.	☐ Yes ☐ No
3. I Project Results in Fewer GHG Emissions per Service Population Compared to Existing Land Use Designations The project must achieve one of the following options. 1. Does the project result in fewer GHG emissions per service population than the future no-project development based on existing land use designations at the project site? The	Not Applicable: The Project is consistent with the City's General Plan Land Use Element, therefore, analysis proceeds to the "CAAP Action Consistency" section below.	☐ Yes ☐ No

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
applicant must conduct a comprehensive project-specific analysis of all GHG emissions for both the project and the future no-project development, consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development, to demonstrate that the project achieves this emissions level. If "Yes," proceed to the "CAAP Action Consistency" section below. If "No," proceed to number 2. 2. If there isn't a project-specific GHG emissions analysis available, then the project would likely result in fewer GHG emissions per service population than would existing land use designations at the project site by incorporating key land use design elements. Would the project implement at least <u>one</u> of the following elements? a. The project would result in a higher density of housing and / or jobs located within 0.5 miles of a transit station than was than was contemplated in the General Plan. b. The project includes a mix of uses (i.e., residential, retail, commercial) and is located in a Transit Priority Area or a High Quality Transit Area. c. The project includes more affordable housing units than was contemplated in the General Plan and is located within 0.5 miles of a transit station. d. The project includes local-serving retail less than 50,000 square feet. If "Yes," proceed to the "CAAP Action Consistency" section below. <i>If "No," the proposed project may not tier from this document and must prepare a comprehensive project-specific analysis of GHG emissions and impacts and incorporate the measures in the CAAP Checklist to the extent feasible.</i>		
STEP 2: CAAP Action Screening Criteria		
Certain projects may screen out of the CAAP Checklist if they meet the following screening criteria: 1. Would the project achieve emissions of 1.4 MTCO₂e per service population or less?	The Project would construct a 332,090 sf industrial building, redeveloping the site and demolishing the existing building and satellites. When combined with construction emissions amortized over 30 years, the proposed Project would result in 4,532 metric tons of carbon dioxide equivalent (MTCO₂e) per year. With a service population of 450 employees,	☐ Project Complies ☐ Not Applicable

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
If "Yes", the project is consistent with the CAAP and no additional analysis is needed (no project-specific GHG impact analysis would be required). If "No," proceed to <i>Building Energy</i> below.	the proposed Project emissions would amount to approximately 10.1 MTCO2e per service population per year. These emissions would exceed the screening threshold of 1.4 MTCO2e per service population per year. Therefore to assess Project consistency, analysis proceeds to the "CAAP Action Consistency" section below.	☒ Project Does Not Comply
STEP 3: CAAP Action Consistency		
Building Energy		
1. <u>TIER 1: Zero-Carbon Electricity</u> For all projects except heavy industry (but including light industrial projects), the project must utilize 100% zero-carbon electricity on-site. The project must comply with one of the following options: 1. Install on-site renewable energy systems or participate in a community solar program to supply 100% of the project's estimated energy demand to the maximum extent feasible. 2. Participate in Southern California Edison at the Green Rate level (i.e., 100% carbon-free electricity) for all electricity accounts associated with the project until which time SCE provides 100% carbon-free electricity for all accounts by default. 3. A combination of #1 and #2 above such that 100% of the project's electricity is zero-carbon. Supports CAAP Measures: BE-1, BE-2, BE-3	All projects except heavy industry (which the Project is not) must utilize 100 percent zero-carbon electricity on-site. Mitigation Measure (MM) GHG-1 would require the proposed Project to consume 100 percent carbon-free electricity on-site, achieved through installing on-site renewable energy systems, installing solar ready rooftop where there is available rooftop area, installing additional on-site renewable systems to meet 100% of any increase to the projected energy demand, or obtaining energy from a community solar program or other zero-carbon energy program for the portion of the renewable energy system that is not installed on-site. With implementation of MM GHG-1, the proposed Project would be consistent with the CAAP regarding Building Energy.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed
2. <u>TIER 1: MUNICIPAL PROJECTS ONLY: Reduce Energy Use and Supply the Project with Renewable Electricity</u> The Project must incorporate the following design elements to the maximum extent feasible: 1. Incorporate strategic energy management programs to reduce building energy demands. 2. Energy efficiency design features to reduce electricity and natural gas energy use beyond Title 24 Building Energy requirements. 3. Install on-site renewable energy systems, such as rooftop solar PV.	Not Applicable: The proposed Project is not a municipal project.	☐ Project Complies ☒ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
4. Participate in Southern California Edison at the Green Rate level (i.e., 100% carbon-free electricity) for all electricity accounts associated with the project until which time SCE provides 100% carbon-free electricity for all accounts by default. Supports CAAP Measures: BE-6		
3. <u>TIER 1:</u> Comply with all City building energy codes and ordinances The Project must comply with all applicable City building energy codes and ordinances at the time of project approval. This includes, but is not limited to, any requirements for electrification, energy use intensity factors, zero-net-energy construction, CalGreen Tier 2 or other energy measures, or LEED requirements. Supports CAAP Measures: BE-7	The proposed Project would comply with Title 24 Building Energy Efficiency Standards. Thus, the Project would be consistent with the City's goals to reduce emissions through reduced energy consumption and with the requirements of the City's General Plan and CAAP, which aim to increase building energy efficiency and reduce energy consumption, to work toward reductions in energy demand (Measure BE-7).	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed
4. <u>TIER 2:</u> Building Energy Efficiency This action applies only to projects that include a retrofit of an existing building. If the proposed project does not include a retrofit, select "Not Applicable" in the Project Conformance column. Projects are encouraged to incorporate energy efficiency measures into the design, which can reduce carbon emissions while also reducing future operational costs through the following: 1. Incorporate strategic energy management programs to reduce building energy demands. 2. Conduct an energy audit or benchmarking analysis to identify potential energy savings opportunities and implement such opportunities. 3. Achieve CalGreen Tier 2 or voluntary building energy measures as they apply to the retrofit. 4. Reduce or eliminate the use of natural gas in place of electricity use (i.e., replace existing natural gas appliances with electric alternatives) 5. Replace existing appliances with higher-efficiency models 6. Install high-efficiency appliances/fixtures to reduce water use, and/or include water-efficient landscape design	Not Applicable: The proposed Project is not a retrofit of an existing building.	☐ Project Complies ☒ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
7. Participate in SoCalREN, SCE, or other energy efficiency programs 8. Conduct other energy efficiency retrofits 9. Achieve zero-net-energy Supports CAAP Measures: BE-4, BE-5		
Waste		
5. <u>TIER 1:</u> Recyclable Materials Recycling The project must comply with all state and local requirements for recycling, also including but not limited to, Chapter 8.60 Solid Waste, Recycling, and Litter Prevention and Organic Waste Disposal Reduction in the City's Municipal code. The project must also: 1. Comply with all Mandatory Construction & Demolition (C&D) Recycling Program Requirements, including Section 18.67.100. 2. Provide substantial storage, collection, and loading of recyclables in a manner that is convenient and safe for all users of the building. Ensure there are sufficient sizes and amount of collection containers for recyclables. Containers must be kept clean, be clearly labeled, and are co-located next to any other solid waste receptacles. Ensure sufficient pick up of collection containers to meet the needs of the occupants. 3. Ensure that all projects include space for multi-stream collection containers in any location where a solid waste container is traditionally housed. This includes both outdoor collection containers serviced by a waste hauler or indoor collection containers utilized by occupants. The project must provide educational material and training to occupants and tenants in how to properly separate recyclables from all other solid waste and place recyclables in a separate container designated for recycling. 4. Ensure that all project occupants and tenants separate recyclables from all other refuse and place recyclables in a separate container designated for recycling.	The proposed Project would comply with all state and local requirements for recycling, also including but not limited to, LBMC Chapter 8.60, Solid Waste, Recycling and Litter Prevention and Organic Waste Disposal Reduction. The proposed Project would also comply with the following CAAP GHG Emission Reduction Actions, which are also described in MM GHG-1: • Comply with all Mandatory Construction & Demolition (C&D) Recycling Program Requirements, including Section 18.67.100. • Provide substantial storage, collection, and loading of recyclables in a manner that is convenient and safe for all users of the building. Ensure there are sufficient sizes and amount of collection containers for recyclables. Containers must be kept clean, be clearly labeled, and are co-located next to any other solid waste receptacles. Ensure sufficient pick up of collection containers to meet the needs of the occupants. • Provide proper storage, collection, and loading of organics in a manner that is convenient and safe for all users of the building. Ensure there are sufficient sizes of collection containers for organics. Containers must be kept clean, be clearly labeled, and are co-located next to any other solid waste receptacles. Ensure sufficient pick up of collection containers to meet the needs of the occupants. • The proposed project shall include space for multi-stream collection containers for both recycling and organics in any location where a solid waste container is traditionally housed. This includes both outdoor collection containers serviced by a waste hauler or indoor collection containers utilized by occupants. The proposed project must provide educational material and training to occupants and tenants in how to properly separate recyclables from all other solid waste and place recyclables in a separate container designated for recycling and organics. • Ensure that all occupants and tenants of the proposed project separate recyclables from all other refuse and place recyclables in a separate container designated for recycling and composting.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
5. Ensure containers are audited annually to ensure proper service levels and to check for contamination. Report findings back to occupants within 30 days and to the City as requested. 6. Work with waste hauler to provide educational material to tenants at least on an annual basis. 7. Provide compliance data to the City as required for any current auditing program. Supports CAAP Measures: W-1	- Ensure containers are audited annually to ensure proper service levels and to check for contamination. Report findings back to occupants within 30 days and to the City as requested. - Work with waste hauler to provide educational material to tenants at least on an annual basis. - Provide compliance data to the City as required for any current auditing program. By complying with these Emissions Reduction Actions, also described in MM GHG-1, the Project would be consistent with CAAP Measures W-1.	
6. <u>TIER 1:</u> Organics Composting The project must comply with all state and local requirements for composting and organic waste collection, including but not limited to, Chapter 8.60 Solid Waste, Recycling, and Litter Prevention and Organic Waste Disposal Reduction in the City's Municipal code. The project must also: - Provide proper storage, collection, and loading of organics in a manner that is convenient and safe for all users of the building. Ensure there are sufficient sizes of collection containers for organics. Containers must be kept clean, be clearly labeled, and are co-located next to any other solid waste receptacles. Ensure sufficient pick up of collection containers to meet the needs of the occupants. - Ensure that all projects include space for multi-stream collection containers for both recycling and organics in any location where a solid waste container is traditionally housed. This includes both outdoor collection containers serviced by a waste hauler or indoor collection containers utilized by occupants. The project must provide educational material and training to occupants and tenants in how to properly separate organics from all other solid waste and place organics in a separate container designated for organics. - Ensure that all project occupants and tenants will separate compostables from all other refuse and place compostables in a separate container designated for composting. - Ensure containers are audited annually to ensure proper service levels and to check for contamination. Report findings back to occupants within 30 days and to the City as requested.	As outlined above, the proposed Project would comply with all state and local requirements related to solid waste disposal, including with respect to recyclables, organics, and composting. By incorporating requirements related to recyclables, organics, and potential composting opportunities included in MM GHG-1, the proposed Project would be consistent with CAAP Measures W-2 and W-3.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
5. Work with waste hauler to provide educational material to tenants at least on an annual basis. 6. Provide compliance data to the City as required for any current auditing program. Supports CAAP Measures: W-2, W-3		
7. TIER 2: Incorporate On-site Composting, Mulching, and/or Anaerobic Digestion The project may incorporate organic waste processing capabilities, such as composting, mulching, or anaerobic digestion facilities (where applicable). Collaborate with agencies to share organic processing information with interested parties. Supports CAAP Measures: W-4	The proposed Project does not incorporate organic waste processing capabilities (composting, mulching, or anaerobic digestion), however as CAAP Tier 2 measures are voluntary and the City can meet CAAP GHG reduction goals with Tier 1 measures alone, the Project is not required to comply with Tier 2 measures.	☐ Project Complies ☐ Not Applicable ☒ Project Does Not Comply ☐ Alternative Measure Proposed
Transportation		
8. TIER 2: Meets Transportation Screening Criteria Does the project meet <u>one</u> of the following transportation screening criteria? 1. Is the project located in a Transit Priority Area or High Quality Transit Area? 2. Does the project include local-serving retail (e.g., grocery stores, pharmacies, or restaurants) less than 50,000 square feet? 3. Does the project include 100 percent affordable housing units(excluding the Manager's unit)? 4. Will the project result in less than 110 total daily vehicle trips at full buildout? If "Yes," skip checklist items #9 though #14 and proceed to checklist item #15 (<i>Comply with the City's Transportation Impact Guidelines</i>) below. If "No," proceed to checklist item #6 below. Supports CAAP Measures: T-1, T-2, T-3, T-5, T-6, T-7, T-8, T-9	The Project is located in a Transit Priority Area (TPA), therefore, the Project would be consistent with CAAP Measures T-1, T-2, T-3, T-5, T-6, T-7, T-8, and T-9.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
9. <u>TIER 1:</u> Trip Reduction Features to Reduce Vehicle Miles Traveled The project must incorporate vehicle trip reduction features into the project design or as mitigation measures. These features must achieve a minimum five percent reduction in vehicle trips and VMT as compared to the project without such vehicle trip reduction features, as estimated through practices backed by substantial evidence with cited reduction potential in the TIA guidelines Appendix A. This can be achieved through the implementation of a project-specific TDM Plan (see checklist item #13), offering transit subsidies, incorporating pedestrian and bicycle infrastructure (see checklist items #10 and #11), implementing parking restrictions or pricing, or including other features and measures to reduce vehicle trips. Supports CAAP Measures: T-1	The proposed Project would implement items 10, 11, and 13, as explained below, to reduce vehicle trips and VMT. Home-based work VMT per employee in the 2050 Plus Project scenario is 10.03, which is less than both the home-based work VMT per employee of 10.61 in the 2050 No Project scenario and the County's baseline VMT of 19.37.	☐ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed
10. <u>TIER 1:</u> Incorporate Pedestrian Infrastructure The project must incorporate pedestrian infrastructure into its design: 1. Pedestrian facilities and connections to public transportation consistent with the City's Mobility Element, CX3 Pedestrian Plan, and any other relevant governing plan 2. Increase sidewalk coverage to improve pedestrian access 3. Improve degraded or substandard sidewalks 4. Maximize shade for pedestrians through tree planting and maintenance 5. Incorporate best practices to ensure pedestrian infrastructure is contiguous and links externally with existing and planned pedestrian facilities; best practices include high-visibility crosswalks, pedestrian hybrid beacons, and other pedestrian signals, mid-block crossing walks, pedestrian refuge islands, speed tables, bulb-outs (curb extensions), curb ramps, signage, pavement markings, pedestrian-only connections and districts, landscaping, and other improvements to pedestrian safety 6. Minimize barriers to pedestrian access and interconnectivity, such as walls, landscaping buffers, slopes, and unprotected crossings	The proposed Project would incorporate new sidewalks along Via Oro Avenue and expand paved sidewalk coverage to Hughes Way. The Project also includes landscape area adjacent to sidewalks, maximizing shade for pedestrians through tree planting and maintenance. Additionally, the Project would construct a new shaded bus shelter at the existing 192 Long Beach Transit bus stop along Via Oro Avenue. The proposed Project would incorporate pedestrian infrastructure, therefore, the Project is consistent with this requirement.	☒ Project Complies ☐ Not Applicable

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
Supports CAAP Measures: T-2		
11. <u>TIER 1:</u> Incorporate Bicycle Infrastructure The project must incorporate bicycle infrastructure into its design: 1. Bicycle facilities for new and expanded buildings, new dwelling units, change of occupancy, increased of use intensity, and added off-street vehicle parking spaces 2. Provide short and long-term (secure) bicycle parking for at least 5% of motorized vehicle capacity and nothing less than CalGREEN requirements, whichever is more restrictive 3. Bicycle facilities consistent with the City's Bicycle Master Plan, Urban Design Element, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen Supports CAAP Measures: T-3	The proposed Project would, with implementation of MM GHG-1, construct long- and short-term bicycle parking spaces consistent with the latest CALGreen standards or at least 5 percent of motorized vehicle capacity (whichever is more restrictive). The Project would provide 34 bicycle parking spaces, which is more than 5 percent of the 333 total motorized vehicle parking spaces provided (or 17 required bicycle parking spaces). Off-site bicycle facilities are outside the Project area and applicant's control and, as such, not applicable to the Project. With implementation of MM GHG-1, the Project would incorporate bicycle infrastructure and be consistent with this requirement.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed
12. <u>TIER 1:</u> Incorporate Electric Vehicle Charging Infrastructure The project must comply with any CalGREEN requirement, City ordinance, building code, or condition of approval that requires a certain amount of EV charging infrastructure and readiness. This may include minimum requirements for EV charging stations, EV-capable parking spaces, and EV-ready parking spaces. Supports CAAP Measures: T-5	The proposed Project would, with implementation of MM GHG-1, include at least 20 percent all parking spaces as EV capable spaces and equip at least 50 percent of EV capable spaces with EV charging stations, consistent with City and CALGreen requirements. The Project would provide 67 EV capable spaces, which is 20 percent of the 333 total parking spaces provided. 34 EV capable spaces would be equipped with EV charging stations, which is 50 percent of the 67 total EV capable spaces provided. With implementation of MM GHG-1, the Project would incorporate electric vehicle charging infrastructure and be consistent with this requirement.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed
13. <u>TIER 1:</u> Comply with City TDM Ordinance The Project must comply with the City's TDM ordinance at the time of project approval. This may include preferential carpool/vanpool parking, bicycle parking, and shower facilities and locker rooms; trip reduction plans; transit-supportive infrastructure development; and similar strategies. Comply with any applicable VMT reduction target and incorporate any required monitoring mechanisms for development, subject to the ordinance. Supports CAAP Measures: T-7	The proposed Project would, with implementation of MM GHG-1, include safe and convenient access to carpool and vanpool vehicles, designated pathways connecting each building to the external pedestrian circulation system, bus stop improvements (if determined necessary by the City), and safe and convenient access to on-site bicycle parking facilities. The Project would provide 2 designated carpool/vanpool parking spaces. With implementation of MM GHG-1, the Project would comply with the City TDM ordinance and be consistent with this requirement.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed
14. <u>TIER 1:</u> Comply with the City's Transportation Impact Guidelines	Per the Governor's Office of Planning and Research (OPR) technical advisory and the County's policy, home-based VMT per capita (resident) is	☒ Project Complies

CAAP Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
The project must comply with the City's current Transportation Impact (TIA) Guidelines. Projects may screen out if they meet certain criteria, such as being located in a transit priority area or local-serving retail development less than 50,000 square feet. For projects which don't screen out must meet the VMT efficiency metrics identified by the TIA Guidelines (e.g., 11.8 daily VMT per capita for residential projects and 18.0 daily VMT per capita for office projects). Supports CAAP Measures: T-9	the recommended metric to evaluate CEQA-related transportation impacts for industrial land uses. As stated in the technical advisory, OPR allows VMT to be measured as regional or citywide VMT per capita. Home-based work VMT per employee in the 2050 Plus Project scenario is 10.03, which is less than both the home-based work VMT per employee of 10.61 in the 2050 No Project scenario and the County's baseline VMT of 19.37.	☐ Not Applicable ☐ Project Does Not Comply ☐ Alternative Measure Proposed
15. <u>TIER 2: High-Density, Mixed-Use, Transit-Oriented, Walkable Infill Project Design</u> Projects should maximize the following characteristics whenever feasible: 1. Located in a transit priority area or transit corridor 2. Includes local-serving retail (e.g., grocery stores, pharmacies, or restaurants) 3. Includes 100 percent affordable housing units or an otherwise high level of affordable housing as defined by the City for the project site 4. Includes a mix of land uses 5. Includes shared and reduced parking strategies, such as shared parking facilities, carpool/vanpool-only spaces, shuttle facilities, EV-only spaces, and reduced parking below allowable amount 6. Does not provide more parking than required Supports CAAP Measures: T-6, T-8	Most of the Project site is located within a high transit priority area, as shown on the City of Long Beach Transit Priority Area Map. The proposed Project does not maximize the listed characteristics whenever feasible, however, as CAAP Tier 2 measures are voluntary and the City can meet CAAP GHG reduction goals with Tier 1 measures alone, the Project is not required to comply with Tier 2 measures.	☐ Project Complies ☐ Not Applicable ☒ Project Does Not Comply ☐ Alternative Measure Proposed

SOURCE: Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*.

TABLE 2
STEP 4: CAAP GREENHOUSE GAS REPLACEMENT MEASURES

Description of Proposed Alternative / Replacement Measure	Description of GHG Reduction Estimate	Proposed Measure Implementation
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	☐ Part of Design ☐ Additional Measure
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	☐ Part of Design ☐ Additional Measure
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	☐ Part of Design ☐ Additional Measure
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	☐ Part of Design ☐ Additional Measure
Replacement for CAAP Consistency Requirement #: [Number] Emissions Sector: [Building energy, transportation, waste, or other sector] Measure Description: [Describe the proposed project measure and why it is proposed] Supports CAAP Measures: [CAAP Measure(s)]	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	☐ Part of Design ☐ Additional Measure

Measure Description: <i>[Describe the proposed project measure and why it is proposed]</i> Supports CAAP Measures: <i>[CAAP Measure(s)]</i>	<i>emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	
Replacement for CAAP Consistency Requirement #: <i>[Number]</i> Emissions Sector: <i>[Building energy, transportation, waste, or other sector]</i> Measure Description: <i>[Describe the proposed project measure and why it is proposed]</i> Supports CAAP Measures: <i>[CAAP Measure(s)]</i>	<i>[Demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions.</i> <i>Include a description of how your measure will reduce emissions and provide supporting quantification documentation and assumptions. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions.]</i>	☐ Part of Design ☐ Additional Measure

SOURCE: SOURCE: Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation.*

TABLE 3
STEP 5: CAAP ADAPTATION ACTION CONSISTENCY CHECKLIST

CAAP Adaptation Action Consistency Requirement	Description of Project Measure(s) / Documentation of Compliance	Project Consistency
Extreme Heat		
1. Incorporate Cool Roofs, Cool Walls, Reflective Streets, Cool Surfaces, and Shade Canopies The project incorporates the following features into its design, but not less than the California Energy Code: 1. Cool roofs and/or walls in place of dark roofs and/or conventional walls 2. Cool pavements and reflective street materials 3. Shade canopy installations 4. Other heat island mitigation design features Supports CAAP Measures: EH-1, EH-2	The proposed Project would incorporate reflective and cool roofing consistent with the latest Title 24 Building Energy Efficiency Standards and, therefore, be consistent with CAAP Measures EH-1 and EH-2. The Project would incorporate Portland cement concrete, which is considered a form of cool pavement due to the grey color that reflects sunlight.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply
2. Incorporate Tree Plantings and Expands Urban Forest Cover The project enhances and expands urban forest cover and vegetation by planting trees and other vegetation. All trees and vegetation planted must be drought-tolerant or California native trees & plants. Supports CAAP Measures: EH-3	The proposed Project would incorporate low or very low water use plants per Water Use Classification of Landscape Species Standards, and all trees and vegetation planted would be drought-tolerant or California Native trees and plants. The Project would include 155 planted trees, including Mexican Sycamore, Brisbane Box, Holly Oak, Desert Museum, Australian Willow, Afghan Pine, and Desert Willow. The Project would incorporate tree plantings and expand urban forest cover and, therefore, be consistent with CAAP Measure EH-3.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply
3. Incorporate Bus Shelter Amenities For any project that includes the installation of a new bus shelter, the project must include bus shelter amenities such as shade structures. Supports CAAP Measures: EH-7	The Project would construct a new shaded bus shelter at the existing 192 Long Beach Transit bus stop along Via Oro Avenue.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply

Air Quality		
4. Install Photocatalytic Tiles The project includes the installation of photocatalytic tiles on outdoor surfaces, particularly in areas of the City with the poorest air quality. Supports CAAP Measures: AQ-1	The proposed Project would incorporate a PV system consistent with the latest Title 24 Building Energy Efficiency Standards for warehouse and office land uses.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply
5. Include Urban Agriculture The project includes urban agriculture in the form of community or private gardens. Supports CAAP Measures: AQ-2	Not Applicable: As displayed in Map LU-7 (Placetypes) in the 2019 Long Beach General Plan Land Use Element, the Project site falls under the Industrial (I) Placetype. Because of the proposed Project land uses and operations, including urban agriculture would not be feasible.	☐ Project Complies ☒ Not Applicable ☐ Project Does Not Comply
6. Use Electric Lawn and Garden Equipment, Outdoor Power Equipment, and Other Small Equipment The project prohibits the use of gasoline-powered small equipment, including lawn and garden equipment and outdoor power equipment, for all tenants and owners. The project provides educational materials to tenants regarding the SCAQMD Electric Lawn and Garden Equipment Incentive and Exchange Program, Commercial Lawn & Garden Battery Buy-Down Rebate Program, and Residential Lawn Mower Rebate Program as well as the new requirements of AB1346. This requirement must be stipulated in the contract specifications for the project's future tenants and any landscaping contracts for the property or tenants. Supports CAAP Measures: AQ-4	The proposed Project would, with implementation of MM GHG-1, utilize electric lawn and gardening equipment for all landscaping activities. This requirement will be stipulated in the contract specifications for the project's future tenants and any landscaping contracts for the property or tenants.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply
Drought		
7. Implement Water Use Efficiency and Water Conservation	The proposed Project would comply with the latest Title 24 CALGreen standards, including water conservation measures and installation of high-	☒ Project Complies

The project incorporates water use efficiency and conservation measures, including: 1. CalGreen Tier 1 and Tier 2 voluntary water conservation measures 2. Low-flow or high-efficiency water fixtures 3. Water-efficient landscapes with lower water demands than required by the DWR 2015 Model Water Efficient Landscape Ordinance (MWELO) 4. Drought-tolerant and native plant species only 5. Other applicable strategies to reduce water use Supports CAAP Measures: DRT-1	efficiency water fixtures. Additionally, the Project would incorporate low or very low water use plants per Water Use Classification of Landscape Species Standards, and all trees and vegetation planted would be drought-tolerant or California Native trees and plants.	☐ Not Applicable ☐ Project Does Not Comply
8. Incorporate Green Infrastructure and Green Streets The project shall incorporate green infrastructure such as permeable pavement, bioretention areas, bioswales, or vegetated strips. Supports CAAP Measures: DRT-3	The Project would incorporate a biofiltration system in the form of a modular wetlands treatment unit designed to capture, filter, and treat stormwater runoff from on-site impervious surfaces. The system will be sized/designed per the LID BMP Manual referenced in LBMC 18.74.060, and compliance will be verified through the City's LID plan review process (18.74.040) prior to permit issuance. The Project would also include vegetated strips. The project would incorporate rainfall capture systems if feasible in accordance with the feasibility process specified in the City Low Impact Development (LID) Best Management Practices (BMP) Design Manual.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply
9. Use Recycled Water and Greywater for Non-Potable Uses; includes Rainfall Capture The project uses recycled water and/or greywater for non-potable uses and incorporates water reuse strategies onsite, such as rainfall capture systems. The project would: 1. Require use of reclaimed / recycled water and/or grey water for outdoor uses 2. Install residential greywater systems that meet appropriate regulatory standards 3. Install rainfall capture systems 4. Install dual plumbing for the use of recycled water Supports CAAP Measures: DRT-4, DRT-5	Not Applicable: According to Long Beach Utilities, the Project area does not have reclaimed water line infrastructure servicing the Project Site. The Project would incorporate rainfall capture systems if feasible in accordance with the feasibility process specified in the City Low Impact Development (LID) Best Management Practices (BMP) Design Manual.	☒ Project Complies ☒ Not Applicable ☐ Project Does Not Comply



Sea Level Rise and Flooding		
10. Comply with all City Floodplain and Sea Level Rise Regulations The project complies with all City and FEMA floodplain regulations as necessary to limit, elevate, or provide floodproofing standards in areas designated as vulnerable to flooding in order to minimize physical damage to development. This includes compliance with all applicable FEMA, California Building Code, City Building Code Chapter 18.40 and Floodplain Ordinance requirements. The project also complies with all applicable sea level rise regulations and ordinances, such as the Local Coastal Program. The project applicant must notify all residents, tenants, and occupants if the project is located on a FEMA floodplain map and a sea level rise inundation map and shall provide these maps to residents, tenants, and occupants. Supports CAAP Measures: FLD-1, FLD-2	The proposed Project would comply with all City, state, and federal regulations regarding flooding and sea level rise and, therefore, be consistent with CAAP Measures FLD-1 and FLD-2.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply
11. Comply with the City's Current Stormwater Management Plan The project must comply with the City's Current Stormwater Management Plan and all related ordinances related to stormwater management and sea level rise scenarios evaluated by the City. Supports CAAP Measures: FLD-5	The proposed Project would comply with the City's Current Stormwater Management Plan and all related ordinances related to stormwater management and sea level rise scenarios evaluated by the City and, therefore, be consistent with CAAP Measure FLD-5.	☒ Project Complies ☐ Not Applicable ☐ Project Does Not Comply
12. Ensure that all critical infrastructure in the sea level rise vulnerability zone is elevated, relocated, or floodproofed. For any project related infrastructure or infrastructure improvements, the project must sufficiently elevate, relocate, or install sufficient floodproofing techniques for all critical infrastructure in the City's sea level rise vulnerability zone pursuant to all City requirements. The project uses floodproofing techniques as necessary. Supports CAAP Measures: FLD-10	Not Applicable: The Project site is not located within an a sea level rise vulnerability zone, as shown in Appendix C of the CAAP.	☐ Project Complies ☒ Not Applicable ☐ Project Does Not Comply
13. Adapt Street Hardscapes and Waterfront Streets and Paths	Not Applicable: The Project site is not located within an a sea level rise vulnerability zone, as shown in Appendix C of the CAAP, nor does the Project propose street improvements.	☐ Project Complies ☒ Not Applicable

For any project related street improvements within the SLR vulnerability zone, the project must consider elevating and extending street hardscapes such as curbs to eliminate gaps that could become flood pathways, including those identified in the CAAP. Supports CAAP Measures: FLD-14, FLD-15		☐ Project Does Not Comply
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SOURCE: Attachment A, *Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation*.

LONG BEACH DEVELOPMENT SERVICES | PLANNING BUREAU

Climate Action + Adaptation Plan Consistency Review Checklist: Technical Support Documentation

Introduction

In November 2020, the City of Long Beach adopted the Climate Action + Adaptation Plan (CAAP), which is a comprehensive planning document outlining the City's proposed approach both to address climate impacts on the city and to reduce the City's impact on the climate by reducing greenhouse gas (GHG) emissions. The CAAP demonstrates how the City will achieve its proportional share of State GHG emission reductions by 2030.

The purpose of the Climate Action + Adaptation Plan Consistency Review Checklist (referred to herein as the *CAAP Checklist*) is to provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA). This technical support document describes the process used to develop the CAAP Checklist and provides justification for the project-specific consistency requirements included therein. It specifically provides substantial evidence that implementing these requirements on a project-by-project basis will collectively achieve the CAAP's target emissions level for new development, as required by CEQA Guidelines Section 15183.5(b)(1)(D). New development can contribute its fair-share of GHG reductions by complying with CAAP mitigation actions that were determined to be applicable through the checklist development process. The following sections provide additional information about the steps used to determine the applicability of individual actions to new development projects in the City.

CEQA Compliance and Background Information

The City's near-term 2030 target was selected based on guidance provided in CARB's 2017 California Climate Change Scoping Plan and was developed to demonstrate consistency with the statewide 2030 target.¹ The City's 2030 target is established on a per service population (SP) basis and aims to achieve emissions rates of 3.04 metric tons of carbon dioxide equivalent

¹ City of Long Beach, July 2020, *City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo #3*.

(MTCO₂e) per SP (MTCO₂e/SP). This compares to the City’s 2030 business-as-usual forecast of 3.34 MTCO₂e/SP. Based on the City’s SP growth estimates, the 2030 target emissions level is 1,984,272 MTCO₂e per year. Annual GHG reductions of approximately 192,659 MTCO₂e by 2030 will be required to achieve this target, or a reduction of approximately 0.3 MTCO₂e/SP.

As described in the CAAP, these GHG reductions will occur through a combination of City initiatives in various plans and policies and will provide reductions from both existing and new developments. The CAAP Checklist specifically applies to proposed discretionary projects that require environmental review pursuant to CEQA. Therefore, the CAAP Checklist is a critical implementation tool in the City’s overall strategy to reduce GHG emissions. Implementation of applicable CAAP Actions in new development projects will help the City achieve incremental reductions toward its target.

Projects that are consistent with the demographic forecasts and land use assumptions used in the CAAP (i.e., consistent with the City’s General Plan) can utilize the CAAP Checklist to demonstrate consistency with the CAAP, and if consistent, can tier from the existing programmatic environmental review contained in the adopted Environmental Impact Report (EIR) for the CAAP. In doing so; pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b); a project’s incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable. This approach is consistent with the recommendations of the Association of Environmental Professionals (AEP) Climate Change Committee (2016) for tiering from qualified GHG reduction plans that demonstrate substantial progress toward meeting the next milestone Statewide planning reduction target (i.e., a 40 percent reduction below 1990 levels by 2030 as set forth by SB 32).²

This CAAP Checklist for new development provides a mechanism for projects to specifically identify “those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project” per §15183.5(b)(2).

GHG emissions associated with construction from a land use development project are generally orders of magnitude lower than the operational emissions. This is because construction emissions are typically short in duration compared to the project’s overall lifetime. Therefore, construction emissions can be assessed qualitatively as part of related CEQA GHG emissions analysis. However, some projects may have long construction periods or entail substantial excavation and grading that could result in construction-related GHG emissions that may be considered significant. Thus, the City retains the discretion on a project-by-project basis to consider whether a project’s construction-related GHG emissions could be cumulatively considerable and require more detailed quantitative CEQA GHG emissions analysis and mitigation.

Projects that are not consistent with the CAAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions

² Association of Environmental Professionals, 2016, *Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*, October 18, available at https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf.

and incorporation of the measures in this CAAP Checklist to the extent feasible. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP.

As required by CEQA Guidelines Section 15183.5(b)(1)(E), the City will monitor strategy implementation and make updates, as necessary, to maintain an appropriate trajectory to the 2030 GHG target. CAAP updates will occur approximately every 5 years and can be scheduled to align with other City milestones, such as General Plan updates to the Land Use and Mobility Elements or budgetary cycles. If regular monitoring shows the CAAP is on track toward the GHG target, then CAAP updates may not be necessary. The City will also develop a comprehensive CAAP update following the current 2030 target year to provide greater analysis of the actions and implementation steps necessary to achieve the City's 2045 carbon neutrality goal. The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAAP or local, State, or federal law.

Climate Action + Adaptation Plan Summary

The CAAP includes a baseline inventory of citywide production-based³ GHG emissions for 2010; a business-as-usual (BAU) emissions forecast for 2030, 2040, and 2050;⁴ a calculation of the City's target GHG emissions for 2030 and its aspirational GHG goal for 2045; and an evaluation of the GHG emission reductions needed in each target year from implementation of local actions.⁵

In 2015, the City's production-based GHG emissions totaled 3,100,468 metric tons of carbon dioxide equivalent (MTCO₂e) per year in 2015, which equates to 6.6 MTCO₂e per Long Beach resident and 5.0 MTCO₂e per service population (SP) (i.e., residents plus employees). BAU emissions are estimated to be 2,176,931 MTCO₂e in 2030, which equates to 3.3 MTCO₂e/SP. BAU emissions would be 1,732,030 MTCO₂e in 2040 (2.6 MTCO₂e/SP) and 1,491,905 MTCO₂e in 2050 (2.2 MTCO₂e/SP).

The City's near-term 2030 target was selected based on guidance provided in CARB's 2017 California Climate Change Scoping Plan and was developed to demonstrate consistency with the

³ The production-based inventory includes emissions associated with activities taking place within the city that generate GHG emissions which occur inside the city boundary (such as building natural gas combustion) as well as outside the city boundary (such as building electricity consumption, where the electricity is generated at a power plant located outside of the City). This inventory includes "jurisdictional emissions" – those emissions sources over which the City and community have some amount of influence. This differs from the CAAP's "consumption-based" inventory which accounts for emissions inside and outside of the City that occur from consumptive activities in the City, such as emissions generated in the production and use of goods and services by households.

⁴ The BAU forecast indicates how emissions would increase if no additional actions were taken by the City to reduce emissions. This accounts for the growth in population, housing, employment and building square footage that is expected for the City through the year 2045. The BAU forecast does account for the expected impacts of foreseeable federal, state, and regional actions, based on the latest information from CARB and the 2017 Climate Change Scoping Plan. This includes the state's Renewables Portfolio Standard (RPS), the Pavley vehicle emission standards and Advanced Clean Cars, the Low Carbon Fuel Standard, and the effect of SCAG 2016 Regional Transportation Plan/Sustainable Community Strategy on land use changes, vehicle trips, and VMT.

⁵ City of Long Beach, 2020, *Climate Action + Adaptation Plan Appendix A Greenhouse Gas Inventory Methodology and 2030 Reduction Target Pathway*, November 23, available at https://www.longbeach.gov/globalassets/lbds/media-library/documents/planning/caap/lb-caap-proposed-plan-app-a-_dec-14, accessed December 2021.

statewide 2030 target.⁶⁻⁷ The City’s 2030 target is established on a per service population (SP) basis and aims to achieve emissions rates of 3.04 MTCO₂e/SP. This compares to the City’s 2030 BAU forecast of 3.34 MTCO₂e/SP. Based on the City’s SP growth estimates, the 2030 target emissions level is 1,984,272 MTCO₂e/yr. GHG reductions of approximately 192,659 MTCO₂e will be required to achieve this target (a reduction of approximately 0.3 MTCO₂e/SP).

The City also used the CAAP to begin initial evaluation of a long-term aspirational GHG reduction goal and has begun considering the strategies that will be required to achieve it. The City has set an aspirational goal to achieve net carbon neutrality citywide by 2045, which is consistent with California Executive Order B-55-18, which calls for statewide net carbon neutrality in the same year.

The CAAP includes 21 priority GHG emission reduction “Mitigation Actions”⁸ that shall be implemented for the City achieve its proportional share of State GHG emission reductions for the near-term target year 2030 (referred to herein as *CAAP Actions*). These actions are organized into three sectors: 1) Building Energy; 2) Waste; and 3) Transportation.

Table A *CAAP Baseline Inventory, BAU Forecasts, and Emission Reduction Targets* presents the City’s GHG emissions inventory, BAU forecast, and target levels as evaluated in the CAAP.

TABLE A
CAAP BASELINE INVENTORY, BAU FORECASTS, AND EMISSION REDUCTION TARGETS

Category	GHG Emissions (MTCO ₂ e)		
	2015	2030	2045 ^a
GHG Emissions (2015 Baseline and BAU Forecasts)	2,799,123	2,176,931	1,513,047
CAAP Target Level: Emissions Per SP	-	3.04	0
CAAP Target Level: Mass Emissions	-	1,984,272	0
CAAP Reductions Needed	-	192,659	1,513,047
CAAP Estimated Reductions	-	363,250	n/a
Total Emissions after CAAP Implementation: Mass Emissions	-	1,813,682	n/a
Total Emissions after CAAP Implementation: Emissions Per SP	5.0	2.78	n/a

NOTES:

^a The CAAP’s 2045 target is aspirational in nature and not the primary reduction goal of the CAAP and the City. In addition, forecasting the CAAP’s ability to reduce GHG emissions out to 2045 is speculative given the long timeframe (more than 20 years), uncertainties in future technology, and emissions modeling limitations. As such, the CAAP did not forecast emission reductions out to 2045.

SOURCE: City of Long Beach, 2020, *Climate Action + Adaptation Plan*, November, available at <https://www.longbeach.gov/lbds/planning/caap/>, accessed October 2021.

⁶ California Air Resources Board, 2017, *California’s 2017 Climate Change Scoping Plan*, November, available at <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents>, accessed October 2021.

⁷ City of Long Beach, July 2020, *City of Long Beach Climate Action and Adaptation Plan GHG Emissions Reduction Target Options Memo #3*.

⁸ It should be noted that the CAAP’s “mitigation actions” are not mitigation measures as defined by CEQA; they are actions to “mitigate” GHG emissions. This document refers to these as “CAAP Actions” throughout.

By meeting the 2030 target, the City will meet its proportional share of the 2030 state target identified in SB 32. However, full implementation of all 21 priority actions will not be enough to achieve carbon neutrality in 2045. If emission reductions from these actions were maximized by 2045, total emissions would still be approximately 1.1 million MTCO₂e based on preliminary estimates. As a result, additional action will be needed to achieve the City's ambitious carbon neutrality goal. However, future actions anticipated by the state and possible federal initiatives would reduce the need for local measures and help ensure broader participation in emission reduction efforts. If CARB adopts a recommendation for a percentage reduction for local governments for future years, the City will amend its targets accordingly.

The CAAP also includes 40 "Adaptation Actions" that are identified to improve the ability of Long Beach and its residents and businesses to adapt to climate change, and related impacts now and in the future.⁹ These actions are organized into four climate impacts: 1) Extreme Heat; 2) Air Quality; 3) Drought; and 4) Sea level rise and flooding.

CAAP Consistency Checklist Components

As noted above, the CAAP Checklist provides a streamlined review process for the GHG emissions analysis of proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to CEQA, per section 15183.5 of the CEQA Guidelines. The following sections describe the components of the CAAP Checklist and technical support information for its development. It serves to provide substantial evidence that the requirements placed on new development are sufficient to ensure consistency with the City's CAAP and achieve the CAAP's target emissions level for new development.

Land Use Consistency

The first step in the CAAP Consistency Checklist is to demonstrate consistency with the City's General Plan and the existing land use designation of the 2019 Land Use Element (LUE). The GHG emissions forecasts in the CAAP were developed using various data sources for each emissions sector. For example, population forecasts were used to project residential electricity-related emissions; employment was used to project commercial, institutional, and industrial electricity-related emissions; the 2018 California Gas Report¹⁰ was used to project natural gas-related emissions; transportation-related emissions were projected using regional VMT data from the Southern California Associated of Governments (SCAG) 2012 Regional Transportation Plan / Sustainable Community Strategy (RTP/SCS) Regional Travel Demand model¹¹ and CARB's Emission FACTors 2014 (EMFAC2014) model.

⁹ Adaptation actions were developed based on the 2018 Long Beach Climate Stressors Review (Appendix D to the CAAP) and the Long Beach Climate Change Vulnerability Assessment Results (Appendix C to the CAAP).

¹⁰ California Gas and Electric Utilities, *2018 California Gas Report*, available at https://www.socalgas.com/regulatory/documents/cgr/2018_California_Gas_Report.pdf, accessed December 2021.

¹¹ For more information, see <https://scag.ca.gov/trip-based-model>

Table B *CAAP Socioeconomic and Building Square Footage Data* presents the population, housing, employment, and building square footage data used in the CAAP’s emissions forecast and emission reduction calculations.

TABLE B
CAAP SOCIOECONOMIC AND BUILDING SQUARE FOOTAGE DATA

Category	2015	2030
Population	468,911	480,424
Employment	155,402	172,297
Service Population (Population + Employment)	624,313	652,721
Households	166,782	182,247
Single-Family	64,061	65,039
Multifamily	102,721	117,208
Nonresidential square footage	69,232,878	77,771,354
Commercial	21,153,178	22,187,152
Office	8,213,696	9,936,986
Industrial	18,269,678	23,520,644
Institutional	21,596,326	22,126,572
Nonresidential square footage	166,782	182,247

SOURCE: City of Long Beach, 2020, *Climate Action + Adaptation Plan*, November, available at <https://www.longbeach.gov/lbds/planning/caap/>, accessed October 2021; City of Long Beach.

The forecasts were based on the 2019 Land Use Element (LUE published in 2015, revised land use maps published in 2018, project adopted in 2019) and 2013 Mobility Elements of the City’s General Plan. The City reviewed the assumptions used to forecast emissions in the City’s CAAP and developed a series of questions that allow the City to assess a project’s consistency with the land use assumptions used in the CAAP. This step is intended to provide the substantial evidence that a project that is consistent with the CAAP’s GHG projections would not result in a cumulatively considerable GHG impact if otherwise consistent with the CAAP. In general, for the CAAP to be applicable to a project, the project must be consistent with the CAAP’s forecasts. If a project is consistent with the CAAP’s forecasts, the project’s growth was accounted for in the CAAP’s BAU emissions projection. This in turn means that if the project is consistent with the CAAP Actions, implementing the CAAP would result in overall GHG emissions that would be less than the CAAP’s identified GHG targets for the City, and would therefore be less than significant, as set forth in the Subsequent Environmental Impact Report for the CAAP.

See *Step 1: Demonstrate consistency with the City’s General Plan* below for detailed instructions for determining land use consistency.

Not all projects that are inconsistent with existing General Plan and LUE would be inconsistent with the CAAP’s emission reduction targets and actions. For example, if a project achieves less GHG emissions per service population than the future no-project alternative at the project site, it would still be within the projections assumed in the CAAP and can move forward to Step 2 of the

Checklist. Estimated GHG emissions for the project would need to be provided to support this conclusion. As another example, if a project includes a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing land use designations, it would still be within the projections assumed in the CAAP and can move forward to Step 2 of the Checklist. Estimated GHG emissions under the existing and proposed designations would need to be provided to support this conclusion. These alternative options are explained below in *Step 1: Demonstrate consistency with the City's General Plan*.

CAAP Mitigation Action Consistency

The CAAP identifies specific goals, actions, and targets supporting each of the 21 priority CAAP Actions. The CAAP Actions include a combination of ordinances, City Council policies, resolutions, programs, and incentives, as well as outreach and education activities. As the CAAP is implemented, each CAAP Action will be assessed and monitored. The CAAP also included implementing actions for each CAAP Action; these implementing actions would work together to achieve the overall goals and targets of each CAAP Action and thereby reduce GHG emissions to the target levels.

As described in the CAAP, there is an existing framework of federal, state, regional, and local regulations that contribute to reducing GHG emissions. Some of these actions are already included in the City's BAU forecast. However, federal, state, and regional actions by themselves would not achieve the City's target for 2030. Therefore, local actions that reduce emissions from both the built environment and new development would be necessary. While the City will work to achieve reductions outlined in the CAAP through planning processes and new ordinances, new development can do its fair share in helping the City achieve its targets by incorporating specific project design features and other measures consistent with the CAAP. This also provides new development with the benefit of using CEQA streamlining provisions for addressing its GHG impacts, as discussed in the *CEQA Compliance and Background Information* section above.

The CAAP's 2015 baseline includes the effect of regulations that were in place at that time. The 2030 forecast, however, accounts for existing (implemented since 2015) and reasonably foreseeable state programs. For example, projected emissions in the stationary energy sector include reductions in electricity and natural gas use due to implementation of the 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6) and some fuel switching. Similarly, projected emissions from the transportation sector were estimated using emission factors from the EMFAC2014 model which includes projected fleet turnover and implementation of Pavley fuel efficiency standards in future years. The gap in emission reductions need to achieve the CAAP's 2030 target that remains after the projected emissions are adjusted for known state actions demonstrates the need for local action.

Given this, the CAAP identified actions that would exceed existing state or local regulatory requirements already assumed in the CAAP's BAU forecast. Many of these actions would apply to new development and were therefore included in the CAAP Checklist. The CAAP Checklist therefore addresses CAAP Actions that would be additional to the requirements of existing state

and local codes. If a new project incorporates all CAAP Action requirements listed in CAAP Checklist, it would not hinder the City's ability to achieve its 2030 reduction target but rather would contribute to the City's ability to meet its overall CAAP targets.

The CAAP also identifies implementing actions for each overall CAAP Action. The overall intent of the CAAP Action and implementing actions provide the basis for the identified CAAP Action requirements listed in CAAP Checklist. Details on each requirement are provided in the following sections. The CAAP Checklist will be updated by the City as needed to incorporate new GHG reduction techniques or to comply with later amendments to the CAAP or local, state, or federal law. Certain CAAP Action requirements listed in CAAP Checklist may otherwise become mandatory through future updates to state and local codes or through adoption of local ordinances. If the CAAP performance and monitoring process (see CAAP Chapter 8) reveals the need for further GHG emission reductions to stay on track to meet the City's 2030 reduction target, the CAAP Checklist may be updated to include additional applicable measures for new development.

See *Step 2: Determine if project screens out of CAAP Action consistency* and *Step 3: Demonstrate consistency with CAAP GHG Emission Reduction Actions* below for instructions for demonstrating consistency with the CAAP Actions and for additional detail on the CAAP Action consistency requirements for new development and how these requirements align with the CAAP Mitigation Actions.

CAAP Adaptation Action Consistency

As discussed above, the CAAP also includes 40 Adaptation Actions that are identified to improve the ability of Long Beach and its residents and businesses to adapt to climate change. These actions establish an initial roadmap to withstand rising temperatures, flooding associated with sea level rise and intense storm events, and drought among others.

Projects must demonstrate consistency with the CAAP Adaptation Action requirements or document why the actions are not applicable or are infeasible. Many of the Adaptation Actions may not apply directly to a development project, such as elevating all critical infrastructure in the sea level rise vulnerability zone. However, all projects must implement all applicable and feasible CAAP Adaptation Action consistency requirements to ensure consistency with the CAAP towards adapting to climate change and its related impacts as much as possible.

Implementation of the CAAP Adaptation Action consistency requirements would not directly contribute toward the City's ability to reduce GHG emissions and meet its emission reduction targets. Nevertheless, projects must still implement all applicable and feasible CAAP Adaptation Action consistency requirements to demonstrate their consistency with the CAAP as a whole.

See *Step 4: Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions* below for additional detail on the CAAP Adaptation Action consistency requirements for new development and how these requirements align with the CAAP Adaptation Actions.

CAP Consistency Checklist Steps

Project applicants shall complete the following steps to demonstrate conformance with the City of Long Beach Climate Action + Adaptation Plan for the proposed project.

Step 1. Demonstrate consistency with the City's General Plan (CAAP Checklist Table 1)

Step 2. Determine if project screens out of CAAP Action consistency (CAAP Checklist Table 1)

Step 3. Demonstrate consistency with the CAAP GHG Emission Reduction Actions (CAAP Checklist Table 1)

Step 4. Identify alternative project emission reduction measures and additional GHG reductions if necessary (CAAP Checklist Table 2)

Step 5. Demonstrate consistency with the CAAP Adaptation Actions (CAAP Checklist Table 3)

All projects must complete **Step 1. Demonstrate consistency with the City's General Plan**, **Step 2. Determine if project screens out of CAAP Action consistency**, **Step 3. Demonstrate consistency with CAAP GHG Emission Reduction Actions**, and **Step 5. Demonstrate consistency with the CAAP Adaptation Actions**. Projects that propose alternative GHG emission reduction measures must also complete **Step 4. Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions**.

Step 1: Demonstrate consistency with the City's General Plan

All projects must demonstrate consistency with the City's General Plan and the existing land use designation of the 2019 LUE. This represents **Step 1** of the CAAP Checklist. Alternatively, if a project is not consistent with the land use designation of the 2019 LUE, the project must identify an alternative compliance mechanism. As described in the CAAP Checklist, projects must answer the following questions:

1. Is the proposed project consistent with the existing land use designation of the 2019 Land Use Element?
2. If no to #1, does the project achieve emissions of 1.4 MTCO₂e per service population or less?
3. If no to #1 and #2, does the project result in fewer GHG emissions per service population than the future no-project development based on existing land use designations at the project site?

For question #1, the demographic forecasts and land use assumptions of the CAAP are based on the 2019 Land Use and 2013 Mobility Elements of the City's General Plan.

However, the 2019 LUE is the City's current Land Use element, and therefore all projects must demonstrate consistency with the 2019 LUE to be permitted without a general plan amendment. Further, the slight difference in population and employment numbers would likely not inhibit the

CAAP from achieving its target emissions level, as was demonstrated above for VMT. Accordingly, the analysis of the project's GHG emissions in its CEQA document should include a reference to the project's consistency with the existing land use designation of the 2019 LUE.

For question #2, projects that are not consistent with the land use designation of the 2019 LUE can demonstrate an emissions efficiency level of 1.4 MTCO₂e per service population instead. This level is low enough that the project would be fully consistent with the CAAP, even if it is not consistent with the land use designation of the 2019 LUE. For evidence supporting this conclusion, please see the *GHG Emissions Less than 1.4 MTCO₂e per Service Population* section below.

For question #3, projects that are not consistent with the land use designation of the 2019 LUE, and cannot demonstrate an emissions efficiency level of 1.4 MTCO₂e per service population, the project can instead demonstrate that they would result in fewer GHG emissions per service population than the future no-project development based on existing land use designations at the project site. In other words, the project would not be more GHG intensive than what would occur for a project consistent with the 2019 LUE. Therefore, even though the project's emissions aren't specifically included in the CAAP's emissions forecast, the project would produce equal or fewer GHG emissions per service population than the equivalent 2019 LUE-consistent project, and therefore be consistent with the CAAP. Projects would still have to complete the CAAP Checklist (**Step 2**).

If the project answers "no" to all three questions above (not consistent with the land use designation of the 2019 LUE, cannot demonstrate an emissions efficiency level of 1.4 MTCO₂e per service population, , and cannot demonstrate an emissions level per service population lower than the future no-project development), then the project cannot use the CEQA Checklist to tier from the adopted EIR for the CAAP. Instead, the project's GHG emissions must be evaluated under a project-specific impact analysis pursuant to all CEQA requirements and incorporate the measures in the CAAP Checklist to the extent feasible.

Step 2: Determine if project screens out of CAAP Action consistency

Certain projects may screen out of the CAAP Checklist if they meet certain criteria. These criteria are designed to ensure high efficiency and low GHG emissions and describe projects that would generally be consistent with the CAAP's GHG emission reduction actions for new development. This represents **Step 2** of the CAAP Checklist.

As described in the CAAP Checklist, if the project can achieve emissions of 1.4 MTCO₂e per service population or less, the project is considered consistent with the CAAP Actions and the analysis is complete.

Additionally, projects may skip completion of the Transportation subsection of the CAAP Action Screening Criteria section of Table 1 if they meet one of four transportation screening criteria.

These screening options are discussed in detail below.

GHG Emissions Less than 1.4 MTCO₂e per Service Population

If projects can quantitatively demonstrate that they will achieve a certain efficiency emissions level, and that efficiency emissions level is consistent with the CAAP's overall target for citywide emissions as it applies to new development, then the project would be considered consistent with the CAAP. This efficiency emissions level was calculated to be 1.4 MTCO₂e per service population (SP).

This efficiency emissions level was calculated using the following approach:

1. Estimated emissions from the land use sectors of the City's 2030 BAU forecast, because these are the emission sectors that would apply to new development. Emissions for the following sources were removed: Oil & Gas refining (Thums facility), tidelands flaring, agriculture, Port-related emissions (including diesel heavy-duty truck emissions), freight rail, Metro rail, harbor craft, cruise ships, and airport ground support equipment. The resulting land-use-based emissions of 1,687,782 MTCO₂e represent 78 percent of total citywide emissions in 2030.
2. Calculated the CAAP's target reductions for the land use sector only by scaling total citywide reductions needed to achieve the CAAP's target (192,659 MTCO₂e) by the land use emissions fraction (78%) = 149,369 MTCO₂e.
3. Calculated the citywide target level for land use emissions by subtracting the land use target reductions calculated above from the 2030 BAU land use emissions = 1,538,412 MTCO₂e.
4. Because new development will naturally be more efficient than existing development, given new building energy standards, compliance with TIA guidelines, etc., it was assumed that new development would be 15% more efficient than existing development. This was based on the TIA's required reduction in daily VMT of 15% for residential and office projects (compared to regional average daily VMT) and data from the UCLA Energy Atlas for the City of Long Beach which indicates that post-1990 homes are approximately 15% more energy efficient than pre-1990 homes (more recent building vintage data was not available from UCLA).
5. Calculated the portion of the land use emissions target that would be achieved through existing development based on the 15% factor = 1,624,933 MTCO₂e; calculated the portion of the land use target that would be achieved through new development based on the 15% factor = 62,848 MTCO₂e.
6. Isolated the CAAP's reduction actions that apply to new land use development (see Table C below) = 21,840 MTCO₂e. Subtracted this value from the new development target level = 41,007 MTCO₂e to get the proportion of reductions that would come through CAAP actions.
7. Divided this value by the growth in service population from 2015-2030 (28,408) to determine the efficiency level required of new development = 1.44 MTCO₂e/SP.

Therefore, the efficiency level of 1.4 MTCO₂e/SP (rounded down from 1.44) represents the average emissions level per service population that new land use development would have to achieve to be consistent with the CAAP's target level and emission reduction actions. This efficiency level is therefore used as an alternative compliance approach to completing the CAAP

Consistency Checklist for new projects. This level represents *average efficiency emissions* and does not mean that all projects would have to achieve these emissions to be consistent with the CAAP; only that if a project achieves this emissions level, it is considered consistent with the CAAP for CEQA tiering purposes.

Transportation Screening Criteria

Certain projects may screen out of the *Transportation* requirements of the CAAP Checklist if they meet one of the following criteria:

1. Located in a Transit Priority Area or High Quality Transit Area (HQTa) as defined by Southern California Association of Governments (SCAG).¹²
2. Includes local-serving retail (e.g., grocery stores, pharmacies, or restaurants) less than 50,000 square feet.
3. Includes 100% affordable housing
4. Would result in fewer than 110 daily trips per day.

These screening criteria represent characteristics that are desirable from a GHG emission reduction perspective, as envisioned by the CAAP and consistent with the screening criteria developed by the State of California for implementing SB743 to reduce vehicle miles traveled (VMT). Projects that meet these criteria are assumed to result in reduced transportation activity and significantly lower mobile source GHG emissions than the citywide average development and would therefore be consistent with the CAAP's transportation actions.

Any project which meets these criteria would still need to demonstrate consistency with the building energy and waste CAAP Actions by completing the *Building Energy* and *Waste* sections of the CAAP Checklist.

Transit Priority Area or HQTa

Projects located in a Transit Priority area or HQTa would have relatively low mobile source emissions on a per-capita basis compared to projects not located in these areas. The determination that these projects would screen out of the CAAP Checklist for transportation is based on the Long Beach TIA Guidelines and CEQA Guidelines Section 15064.3, Subsection (b), which states that “generally, [land use] projects within one-half mile of either an existing major transit stop or an existing high quality transit corridor should be presumed to cause a less than significant transportation impact.” Figure 4 of the Long Beach TIA Guidelines displays the transit priority areas of Long Beach based on the California PRC definitions for major transit stops or high-

¹² SCAG defines a HQTa as an area within one half-mile of a well-served transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours. For more information, see: <https://gisdata-scag.opendata.arcgis.com/datasets/43e6fef395d041c09deacb369a513ca1/explore?location=34.152977%2C-117.742800%2C9.85>

quality transit corridors. Any project located in these transit priority areas will be presumed to be consistent with the CAAP's transportation actions, unless the project:

- Has an overall Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site);
- Is inconsistent with the Long Beach Land Use Element or the SCAG RTP/SCS; or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

A higher-density project located within a transit priority area could help the City achieve its VMT and mode share goals even though it would be inconsistent with the growth projections in the CAAP, whereas a higher-density project in a more remote location may not provide the same benefit. Projects in transit priority areas can support the CAAP by increasing the capacity for transit-supportive residential and/or employment densities. Projects can increase walking opportunities in a transit priority area by implementing pedestrian improvements through provision of multiple and direct pedestrian connections and accessibility to local activity centers (such as transit stations, schools, shopping centers, and libraries) and features for walkability as identified in the proposed project circulation system.

Although a project that increases density in a transit priority area (compared to existing land use designations) may lead to a short-term increase GHG emissions at the project site, the project is likely to reduce automobile trips in the long-term and produce related benefits. Higher density generally reduces the distance people travel and provides greater options for the mode of travel they choose. Transit ridership increases with density, justifying enhanced transit service.¹³ The City can make progress towards its GHG reduction targets by accommodating growth in a more efficient manner, such as via higher density development in transit priority areas.

Local-Serving Retail

As discussed in the Long Beach TIA Guidelines, retail development that is 50,000 square feet (sf) or less is likely to be local-serving and tends to shorten trips within Long Beach. Therefore, any retail project 50,000 square feet or less will be presumed to be consistent with the CAAP's transportation actions (related to CEQA Guidelines Section 15064.3, subdivision (b)).

High Level of Affordable Housing

As discussed in the Long Beach TIA Guidelines, affordable residential development in areas with inadequate affordable housing has the potential to shorten commute distances and/or increase the

¹³ California Air Pollution Control Officers Association, Sacramento Metropolitan Air Quality Management District, and ICF, *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*, Final Draft, December 2021, available at <https://www.airquality.org/residents/climate-change/ghg-handbook-caleemod>. Accessed March 2022.

proportion of residents using transit, which would reduce VMT. Residential projects (or the residential portion of mixed-use projects) with 100 percent affordable dwelling units will be presumed to be consistent with the CAAP's transportation actions (pursuant to CEQA Guidelines Section 15064.3, subdivision (b)).

Fewer than 110 Trips per Day

According to the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA*, projects which would have fewer than 110 trips per day could be presumed to have a less than significant transportation impact related to CEQA Guidelines Section 15064.3, subdivision (b).¹⁴ Therefore, these projects would be presumed to be consistent with the CAAP's transportation actions.

Step 3: Demonstrate consistency with CAAP GHG Emission Reduction Actions

All projects must demonstrate consistency with the CAAP Action requirements listed in CAAP Checklist Table 1 or document why the strategies are not applicable or are infeasible. However, if a project achieves emissions of 1.4 MTCO₂e per service population or less as discussed in Step 1 above, the project would be consistent with the CAAP's target level and emission reduction actions and would not have to complete CAAP Checklist Table 1. All other projects must complete CAAP Checklist Table 1.¹⁵ This represents **Step 3** of the CAAP Checklist.

The CAAP Action consistency requirements are listed as either "Tier 1" or "Tier 2." These two levels are defined as follows:

Tier 1: Required for all discretionary projects to demonstrate consistency with the CAAP.

Tier 2: Encouraged for all discretionary projects to the maximum extent feasible. Although these are not required, projects are strongly encouraged to implement as many of these as feasible.

In order to demonstrate consistency with the proposed CAAP, future projects would implement both mandatory (Tier 1) and encouraged (Tier 2) measures that support the CAAP Actions and would achieve the City's GHG emissions targets.

All projects are required to complete Tier 1 measures. Tier 1 measures are required because they are either: 1) quantified as part of the City's GHG reduction pathway for new development; or 2) required through ordinance, building code, or other city planning requirements (such as the

¹⁴ The OPR Technical Advisory states the following: "CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact."

¹⁵ Projects that meet certain transportation screening criteria, as discussed in the Step 2 *Transportation Screening Criteria* section above, may skip the *Transportation* section of CAAP Checklist.

Bicycle Master Plan). Tier 1 measures required for the Building and Energy sector include zero-carbon electricity, building energy efficiency, municipal project energy efficiency measures and solar PV installations, and compliance with building energy codes and ordinances. Tier 1 measures for the Transportation sector include trip reduction features to reduce vehicle miles traveled (VMT), incorporation of pedestrian, bicycle, and electric vehicle charging infrastructure, and compliance with the City's Transportation Demand Management (TDM) Ordinance and Traffic Impact Analysis (TIA) Guidelines. Tier 1 measures required for the Waste sector include recyclable materials recycling and organics composting. If a project does not include specific Tier 1 measures, quantifiably equivalent measures for GHG emission reductions must be provided for the project to be considered consistent with the proposed CAAP (see section *Step 4: Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions* below).

All projects are encouraged to complete Tier 2 measures, but they are not required. Tier 2 measures were not quantified as part of the City's GHG reduction pathway for new development. There are no Tier 2 measures identified for the Building and Energy sector. Tier 2 measures for the Transportation Sector include meeting the Transportation Screening Criteria and High-Density, Mixed-Use, Transit-Oriented, Walkable Infill Project Design. Tier 2 measures for the Waste sector include incorporation of on-site composting, mulching, and/or anaerobic digestion.

Tier 1 Measures: Quantitative Consistency Requirements

This section addresses each required Tier 1 CAAP consistency checklist item for new development that relates to a CAAP action that was quantified for GHG emission reductions in the CAAP. These items are mandatory for all projects. For each checklist item listed below, this document provides the quantitative basis behind the requirements for new development and demonstrates new development's "fair share" of the CAAP's mitigation of GHG emissions as stipulated by the California Supreme Court in *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204 (commonly referred to as "Newhall Ranch"), in CARB's 2017 Scoping Plan-Identified VMT Reductions And Relationship To State Climate Goals document, and in CEQA Guidelines Section 15130(a)(3).^{16,17,18}

¹⁶ In Newhall Ranch, the court said, "Indeed, to proceed in this manner is consistent with CEQA's 'inherent recognition ... that if a plan is in place to address a cumulative problem, a new project's incremental addition to the problem will not be 'cumulatively considerable' if it is consistent with the plan and is doing its fair share to achieve the plan's goals." (Addressing the Significance of Greenhouse Gas Emissions, supra, 4 Golden Gate U. Envtl. L.J. at pp. 210–211.)"

¹⁷ "It is reasonable for new development to achieve a fair share of per capita VMT and GHG emissions reductions necessary to achieve statewide climate goals and to continue to work towards additional VMT and GHG emissions reductions through other measures." California Air Resources Board, *California Air Resources Board 2017 Scoping Plan-Identified VMT Reductions and Relationship to State Climate Goals*, January 2019, available at <https://ww2.arb.ca.gov/resources/documents/carb-2017-scoping-plan-identified-vmt-reductions-and-relationship-state-climate>, accessed August 2020.

¹⁸ CEQA Guidelines Section 15130(a)(3) state that "An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable."

Table C CAAP Action Consistency: New Development Contributions presents a summary of the specific requirements and performance standards for new development for the five quantified CAAP Actions. The table also presents total emission reductions achieved by new development for each measure and compares this to the total emission reduction necessary from all development (existing and new) citywide by 2030.

TABLE C
CAAP ACTION CONSISTENCY: NEW DEVELOPMENT CONTRIBUTIONS

Sector, CAAP Action Consistency Requirement, and CAAP Action	Summary of New Development Consistency Requirements	2030 GHG Emission Reductions (MTCO ₂ e)			Percent New Development of Total GHG Reduction
		New Development	Existing Development	Total	
Building Energy					
1. Zero-Carbon Electricity					
BE-1: Provide access to renewably generated electricity (SCE Green-Rate) ^a	100% zero-carbon electricity	16,650	9,680	26,330	63%
BE-2: Increase use of solar power					
Waste					
5. Recyclable Materials Recycling					
W-1: Ensure compliance with state law recycling program requirements for multi-family and commercial property recycling programs	Comply with all state and local requirements for recycling and mandate recycling onsite	2,240	43,100	45,330	5%
6. Organics Composting					
W-2: Develop an organic waste collection program for City-serviced accounts.	Comply with all state and local requirements for organic waste collection and mandate compostable material separation onsite	1,960	37,770	39,730	5%
Transportation					
9. Trip Reduction Features to Reduce Vehicle Miles Traveled					
T-1: Increase frequency, speed, connectivity, and safety of transit options	Five percent reduction in vehicle miles traveled (VMT)	990	4,340	5,330	19%
Total		21,840	94,890	116,730	19%

NOTES:

^a In the CAAP, BE-1 includes emission reductions from SCE's commitment to an 80 percent carbon free energy supply by 2030 (which would occur independent of CAAP implementation outside of the City's jurisdiction), and also accounts for a proportion of SCE accounts in Long Beach enrolling in SCE's Green Rate program (within control of the City). The emission reductions presented in this table include only the portion of BE-1 associated with additional enrollment in SCE's Green Rate program, since all development will benefit from changes to SCE's default energy supply mix.

SOURCE: City of Long Beach, 2020, *Climate Action + Adaptation Plan*, November, available at <https://www.longbeach.gov/lbds/planning/caap/>, accessed October 2021; City of Long Beach.

Table C illustrates that with the CAAP Action consistency requirements included in the CAAP Checklist, new development would contribute nearly 22,000 MTCO₂e of GHG emission reductions in 2030, representing 19 percent of the total reductions attributed to these five measures in the CAAP. Because new development only accounts for four percent of the total citywide service population in 2030, the 19% represents new developments' fair share contribution toward the CAAP's emission reduction estimates. In other words, on a per-SP basis, new development is achieving nearly *five times* more GHG emission reductions than existing development.

As discussed above, other quantified CAAP measures (T-4: Implement the Port of Long Beach Clean Air Action Plan; BE-6: Perform municipal energy and water audits; and BE-8: Identify and implement short-term measures to reduce emissions related to oil and gas extraction) would not apply to new development and their implementation would be independent of actions taken by new development.

CAAP Checklist Table 1, Step 3: #1. Zero-Carbon Electricity

This checklist item requires that new development use 100% carbon-free electricity for all electricity usage onsite. This can be achieved through onsite solar PV or other onsite renewable energy generation, through enrollment in SCE's Green Rate program (or other available carbon-free electricity service at the time of project application), or some combination of the two.

The CAAP does not calculate GHG emission reductions separately for existing development and new development, so the following modeling evaluation was performed.

The CAAP includes the following actions related to zero-carbon electricity for new development:

- **BE-1: Provide access to renewably generated electricity.** Explore and pursue various options to increase the community's access to renewable electricity that exceeds the State's Renewables Portfolio Standard in the near-term.
- **BE-2: Increase use of solar power.** Incentivize and facilitate an increase in solar power infrastructure installation and usage
- **BE-3: Promote community solar and microgrids.** Leverage partnerships and private developers to expand participation in community solar programs. Identify optimum locations and funding mechanisms for implementing microgrid pilot projects.

The CAAP calculated GHG emission reductions for BE-1 and BE-2 (no reductions were calculated for BE-3). For BE-1, the CAAP assumed that SCE would reduce the carbon intensity of their retail electricity supply by 80% by 2030. This would occur independent of City and project applicant action and would result in 169,921 MTCO₂e of emission reductions. The CAAP also assumed a 10 percent participation rate in SCE's Green Rate program for all residential and commercial accounts in the City. This amounts to 83,332 megawatt hours (MWh) of carbon-free electricity supplied to residential accounts and 76,394 MWh of carbon-free electricity supplied to commercial accounts, resulting in 19,041 MTCO₂e of emission reductions. The total citywide emission reduction for BE-1 is 188,963 MTCO₂e.

For BE-2, the CAAP assumed that 5 percent of the 91,992 maximum rooftop PV solar coverage potential would install solar PV for a total of 4,600 solar PV systems. At the time the CAAP was prepared, the City of Long Beach had 1,469 roofs with solar PV installations. 5 percent coverage would result in 3,131 new solar PV installations. The CAAP used an average system size of 6.8 kW DC and an average annual generation of 10,400 kilowatt hours (kWh). All data and factors in this calculation was based on Google's Project Sunroof dashboard.¹⁹ The total citywide emission reduction for BE-2 is 3,881 MTCO₂e.

Because checklist item #1 requires new development to source 100 percent of its electricity from carbon-free sources; whether from onsite solar (BE-2) or carbon-free electricity through SCE or possibly in the future through a Community Choice Aggregation program (BE-1), a separate emission reduction contribution analysis for each of these two CAAP measures for new development is not needed. Therefore, this document calculated reductions from the combination of BE-1 and BE-2 implemented for new development, as required by checklist item #1. The calculation steps are as follows:

1. The CAAP projects growth in electricity use from 2015-2030 as 19,970 MWh for residential development, 85,529 MWh for commercial development, and 153,269 MWh for industrial development.
2. For industrial electricity use, only light industrial uses were accounted for in this calculation (conservatively assuming heavy industry would be exempt from the measure due to potential infeasibility). It was assumed that 25% of total industrial development (and electricity use) would be due to light industrial uses, or 38,317 MWh.
3. Although this checklist item requires 100 percent carbon-free electricity, it was assumed that some new development would be exempt or there would be less than 100 percent compliance with this measure. It was conservatively assumed that 95% of all new electricity use associated with new residential, commercial, and light industrial development would be carbon-free. This amounts to 136,626 total MWh supplied by carbon-free sources.
4. The 2030 emission rate for SCE-provided electricity, after SCE reduces the carbon intensity of their retail electricity supply, is 0.1192 MTCO₂e per MWh. By applying this rate to the total amount of carbon-free electricity provided through BE-1 and BE-2 for new development, the total emission reduction is 16,650 MTCO₂e.

The CAAP estimated that BE-1 and BE-2 combined would reduce emissions citywide by 192,840 MTCO₂e. However, when accounting only for the portion of BE-1 associated with enrollment in SCE's Green Rate program (because the reduction in SCE's standard electricity intensity would occur independent of CAAP implementation outside of the City's jurisdiction), the total reduction is 22,923 MTCO₂e. Based on the assumptions above for new development, the reduction for implementation of checklist item #1 would be 16,650 MTCO₂e. This represents 63 percent of the total citywide reduction for BE-1 and BE-2. Since electricity consumption associated with new

¹⁹ Google, *Google Project Sunroof: Estimated rooftop solar potential of Long Beach, CA*, Last Updated November 2018, available at <https://sunroof.withgoogle.com/data-explorer/place/ChIJWdeZQOjKwoARqo8qxPo6AKE/>, accessed March 2022.

development represents only 8 percent of the City's total electricity consumption in 2030, the 63 percent value represents new developments' fair share contribution toward BE-1 and BE-2.

CAAP Checklist Table 1, Step 3: #5. Recyclable Materials Recycling

This checklist item requires that new development comply with all state and local requirements for recycling, including the mandatory commercial and multifamily recycling ordinance. It also requires that projects; (1) provide for the storage, collection, and loading of recyclables in a manner that is convenient for all users of the building; (2) make efforts to ensure that all project occupants and tenants will separate recyclables from all other refuse and place recyclables in a separate container designated for recycling; and (3) provide compliance data to the City as required for any current auditing program.

The CAAP does not calculate GHG emission reductions separately for existing development and new development, so the following modeling evaluation was performed.

This checklist item addresses the following CAAP action:

- **W-1: Ensure compliance with state law recycling program requirements for multifamily and commercial property recycling programs.** Adopt a mandatory commercial recycling ordinance that includes enforcement mechanisms to ensure that on-site recycling collection is provided at multifamily and commercial properties and that the City is in compliance with state laws.

The CAAP calculated GHG reductions for W-1 assuming a citywide reduction in paper and cardboard landfilling of 75 percent from the multifamily residential and commercial sectors. This represents a reduction in 8,264 tons of paper and cardboard landfilled from the multifamily sector and a reduction in 41,948 tons of paper and cardboard landfilled from the commercial sector. The landfilling emission rate is 0.90 MTCO_{2e} per ton, so the total reduction is 45,340 MTCO_{2e}.

GHG emission reductions associated with paper and cardboard recycling for new development were calculated as follows:

1. The total tonnage of paper and cardboard landfilling for new development was calculated by taking the growth in paper and cardboard landfilling from 2015 to 2030; this value is 480 tons for multifamily development and 2,434 tons for commercial development.
2. It was assumed that new development could achieve slightly better diversion than existing development, given opportunities to educate new occupants and tenants about recycling and by providing new collection bins immediately. A reduction of 85 percent was selected for new development.
3. The total tonnage of paper and cardboard landfilling reduced for new development was then calculated for both multifamily and commercial waste; this amounts to 408 tons for multifamily and 2,069 tons commercial.

4. Using the average landfilling emission rate of 0.90 MTCO₂e per ton, the GHG emission reduction is 370 MTCO₂e for multifamily and 1,870 MTCO₂e for commercial; the total reduction is 2,240 MTCO₂e

The CAAP estimated that W-1 would reduce emissions citywide by 45,335 MTCO₂e. The contribution from new development would therefore represent 4.9 percent of the total citywide reduction for W-1. Since paper and cardboard landfilling associated with new development represents 4.4 percent of the City's total paper and cardboard landfilling in 2030, the 4.9 percent contribution from new development exceeds the citywide average contribution and represents a fair share.

CAAP Checklist Table 1, Step 3: #6. Organics Composting

This checklist item requires that new development comply with all state and local requirements for composting and organic waste collection, including the mandatory commercial and multifamily organic waste collection ordinance. It also requires that projects (1) provide for the storage, collection, and loading of recyclables and solid waste in a manner that is convenient for all users of the building; (2) make efforts to ensure that all project occupants and tenants will separate compostables from all other refuse and place compostables in a separate container designated for composting; and (3) provide compliance data to the City as required for any current auditing program.

The CAAP does not calculate GHG emission reductions separately for existing development and new development, so the following modeling evaluation was performed.

This checklist item addresses the following CAAP action:

- **W-2: Develop an organic waste collection program for City-serviced accounts.** Develop an organic waste collection program and educational campaign for properties serviced by the City to divert organic waste from landfills.
- **W-3: Partner with private waste haulers to expand organic waste collection community-wide.** Adopt a mandatory commercial and multifamily organic waste collection ordinance and partner with the City's franchise waste haulers to ensure organics collection service is provided community-wide.

The CAAP calculated GHG reductions for W-2 assuming a citywide reduction in landfilling of organics (food, park, and wood) of 75 percent from the multifamily residential and commercial sectors. This represents a reduction in 3,695 tons of organics landfilled from the multifamily sector and a reduction in 20,937 tons of organics landfilled from the commercial sector. The landfilling emission rate for organics is 0.44 MTCO₂e per ton for multifamily organics and 0.47 MTCO₂e per ton for commercial organics, so the total reduction is 39,730 MTCO₂e.

GHG emission reductions associated with organics composting for new development were calculated as follows:

1. The total tonnage of organics landfilling for new development was calculated by taking the growth in organics landfilling from 2015 to 2030; this value is 832 tons for multifamily development and 5,870 tons for commercial development.
2. It was assumed that new development could achieve slightly better diversion than existing development, given opportunities to educate new occupants and tenants about recycling and by providing new collection bins immediately. A reduction of 85 percent was selected for new development.
3. The total tonnage of organics landfilling reduced for new development was then calculated for both multifamily and commercial waste; this and amounts to 707 tons for multifamily and 3,488 tons commercial.
4. Using the average landfilling emission rate of 0.44 MTCO₂e per ton for multifamily organics and 0.47 MTCO₂e per ton for commercial organics, the GHG emission reduction is 310 MTCO₂e for multifamily and 1,650 MTCO₂e for commercial; the total reduction is 1,960 MTCO₂e

The CAAP estimated that W-2 would reduce emissions citywide by 39,734 MTCO₂e. The contribution from new development would therefore represent 4.9 percent of the total citywide reduction for W-2. Since organics landfilling associated with new development represents 4.4 percent of the City's total organics landfilling in 2030, the 4.9 percent contribution from new development exceeds the citywide average contribution, representing a fair share.

CAAP Checklist Table 1, Step 3: #9. Trip Reduction Features to Reduce Vehicle Miles Travelled

This checklist item requires that new development achieve a five percent reduction in vehicle trips and VMT compared to the project without such vehicle trip reduction features. This could be achieved by a number of actions and design features, such as through a TDM plan.

The CAAP does not calculate GHG emission reductions separately for existing development and new development, so the following modeling evaluation was performed.

This checklist item addresses the following CAAP action:

- **T-1: Increase frequency, speed, connectivity, and safety of transit options.** Continue development and implementation of additional water use efficiency and conservation programs to help reduce water use.

The CAAP calculated GHG emission reductions for T-1 assuming a citywide reduction in light-duty VMT of one percent. This would be a result of implementation of transit system and ridership improvements.

Transit improvements would influence vehicle travel patterns for both existing and new development, but new development has the opportunity to better utilize transit improvements than much of the existing built environment in the City. For example, new development can locate

jobs and residents near transit, offer transit subsidies, limit available parking, offer parking cash-out, and provide other design features and incentives to maximize transit use by future occupants and customers of the project site.

Because of this, new development would be required to reduce total VMT by five percent compared to the project without such vehicle trip reduction features. This could be achieved by a number of actions and design features, such as through a TDM plan.

GHG emission reductions associated with a five percent reduction in VMT from new development were calculated as follows:

1. The CAAP projects that in 2030, the average daily light-duty VMT per service population would be 11.0 miles. This actually represents a 17 percent reduction in the 2015 value of 13.2 daily light-duty VMT per service population based on a variety of factors and regulations including the RTP/SCS.
2. It was assumed that new development would already be more efficient than existing development for transportation. Using compliance with the City's TIA Guidelines document as a proxy, on average, new development would result in 15 percent less VMT per service population than existing development. This means that new development would have to achieve a value of 9.4 daily light-duty VMT per service population (on average).
3. Based on this, new development from 2015 to 2030 would produce approximately 266,000 daily VMT (9.4 multiplied by 28,408 new service population).
4. A five percent reduction in 266,000 daily VMT is equal to approximately 13,000 daily VMT. The BAU emission rate for light-duty vehicles is 214.78 grams CO₂e per VMT. Therefore, a five percent reduction in VMT for new development would result in 990 MTCO₂e of emission reductions.

The CAAP estimated that T-1 would reduce emissions citywide by 5,230 MTCO₂e. The contribution from new development would therefore represent 19 percent of the total citywide reduction for T-1. Since new service population associated with new development represents only 4 percent of the City's service population in 2030, the 19 percent value represents new developments' fair share contribution toward T-1.

It should also be noted that the CAAP's BAU emissions forecast for the on-road transportation sector indicates that citywide light-duty vehicle VMT would decline by 15 percent from the 2015 baseline year value of 8.2 million daily VMT to the 2030 target year value of 7.2 million daily VMT. The BAU forecast was prepared using VMT projections from the SCAG 2012 RTP/SCS Regional Travel Demand model, as discussed above in the *Modeling Methods for Vehicle Miles Traveled* section below. The SCAG model assumes implementation of the 2012 RTP/SCS, which includes numerous transportation investments and improvements such as new bus rapid transit routes and extensions, new light rail routes and extensions, new and expanded bus service, Metrolink extensions of commuter rail, various active transportation strategies such as increasing

bikeways, various TDM strategies to reduce solo driving, high-occupancy vehicle lane network expansions, and many others.²⁰ This means that new development would have to do more than achieve a five percent reduction in vehicle trips and VMT in order to be consistent with the SCAG 2012 RTP/SCS, and the additional reductions quantified for the CAAP.

Modeling Methods for Vehicle Miles Traveled

After the modeling for the CAAP was conducted, the City adopted the Land Use Element (LUE) update (December 2019) and the Traffic Impact Analysis (TIA) Guidelines (June 2020). Both the LUE and TIA rely on updated socioeconomic projections and updated SCAG Regional Travel Demand modeling when compared to the CAAP due to when the analysis work was completed. Specifically, the CAAP relied on the SCAG 2012 RTP/SCS,²¹ which was the most updated available data at the time the analysis was done, while both the 2019 LUE and the 2020 TIA Guidelines relied on SCAG's 2016 RTP/SCS.²²

In order to demonstrate that these differences in available data sources would not inhibit the CAAP from achieving its 2030 GHG reduction targets, a modeling exercise was conducted. Data from the transportation modeling conducted for the 2019 LUE shows that total citywide daily vehicle miles traveled (VMT) would be 9.2 million compared to the CAAP's value of 8.0 million. This represents a 15 percent increase in VMT when comparing the 2019 LUE with the CAAP, and a 14 percent increase in daily VMT per service population (12.8 vs. 11.0). If the CAAP were updated using the 2019 LUE's VMT data and the same on-road vehicle emission factors from the CAAP, total 2030 emissions would increase by 42,000 MTCO₂e. This would increase the GHG emission reductions needed to achieve the CAAP's target of 1,984,272 MTCO₂e from 192,659 MTCO₂e to 234,214 MTCO₂e. Because the CAAP achieves total reductions of 393,250 MTCO₂e, the target would still be achieved with 129,000 MTCO₂e to spare.

Therefore, the difference in modeling methods between the 2019 LUE and the CAAP does not hinder the CAAP's ability to achieve the citywide GHG emissions reduction target.

It should also be noted that the VMT modeling conducted for the 2020 TIA Guidelines also relies on different modeling methods than the CAAP uses to estimate light-duty VMT and associated mobile source emissions. The 2020 TIA Guidelines used a "home-based trip" approach to model regional average light-duty VMT per capita for Los Angeles County and a "work-based trip" approach to model regional average light-duty VMT per employee for Los Angeles County. This means all trips originating from home or work are captured in the model, which represents travel associated with a specific land use type (like residential or office). These values are 13.9 daily light-duty VMT per capita (home-based) and 18.0 daily light-duty VMT per employee (work-based). These regional average values are used as thresholds for analyzing new project VMT generation (e.g., for new residential projects, 15 percent below the regional average VMT per

²⁰ Southern California Association of Governments, *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy*, April 2012, available at <http://libraryarchives.metro.net/DPGTL/scag/2012-2035-regional-transportation-plan.pdf>, accessed December 2021.

²¹ For more information, see <https://scag.ca.gov/trip-based-model>

²² Southern California Association Of Governments, *SCAG Regional Travel Demand Model And 2012 Model Validation*, March 2016, available at https://scag.ca.gov/sites/main/files/file-attachments/scag_rtdm_2012modelvalidation.pdf?1605571641, accessed December 2021.

capita value of 13.9 [11.8], would constitute a less-than-significant transportation impact under CEQA).

The CAAP's VMT modeling is based on a total trip generation approach using the origin-destination method embodied in the SCAG model. This approach accounts for all trip types that residents, employees, and customers take within the City, and includes all trips with an origin and/or a destination within City boundaries. This is the standard modeling approach conducted for citywide GHG inventories and climate action plans, as recommended by accepted community GHG inventory protocols including the ICLEI U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions and the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories.^{23,24} This differs from the TIA modeling which accounts for land-use driven trips such as home-based and work-based trips.

Although the TIA applied the results from a different base year model than the CAAP, the ability of the CAAP to achieve its 2030 target emissions level is not compromised by this difference. This is because the CAAP continues to account for all travel and network effects in the city to generate emissions and reductions, while the TIA was focused on the effects of specific land use types on VMT. Projects would also have to comply with both the TIA guidelines and the CAAP Checklist to have a less-than-significant impact on transportation and climate change under CEQA.

Tier 1 Measures: Qualitative Consistency Requirements

This section addresses each required Tier 1 CAAP consistency checklist item for new development that relates to a CAAP action that was not quantified for GHG emission reductions in the CAAP. These items are mandatory for all projects. For each checklist item listed below, this document provides the basis behind the requirements for new development.

CAAP Checklist Table 1, Step 3: #2. MUNICIPAL PROJECTS ONLY: Reduce Energy Use and Supply the Project with Renewable Electricity

This checklist item only applies to municipal projects. The CAAP calculated GHG emission reductions for municipal energy sources associated with energy efficiency, solar PV installations, and carbon-free electricity purchases. The CAAP does not calculate GHG emission reductions separately for existing municipal facilities and new municipal facilities.

This checklist item addresses the following CAAP action:

- **BE-6: Perform municipal energy and water audits.** Establish a municipal building/facility energy and water audit program, establish targets for decreasing annual energy use, and track progress.

²³ ICLEI – Local Governments for Sustainability USA, 2019, *U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions*, Version 1.2, available at <https://iclei.usa.org/us-community-protocol/>

²⁴ World Resources Institute, C40 Cities Climate Leadership Group and ICLEI – Local Governments for Sustainability USA, 2021, *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories*, Version 1.1, available at <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>.

The CAAP calculated emission reductions associated with energy efficiency for Street and Park Lights and window efficiency at the Houghton Community Center. To ensure consistency with this, the CAAP checklist requires that all new municipal projects incorporate energy efficiency design features to reduce electricity and natural gas energy use beyond Title 24 Building Energy requirements.

The CAAP calculated emission reductions for solar PV installations based on PV systems installed at 13 City facilities²⁵ for a total of 8,834 kW of solar capacity installed. To ensure consistency with this, the CAAP checklist requires that all new municipal projects must install on-site renewable energy systems, such as rooftop solar PV.

For carbon-free electricity purchases, the CAAP assumed that 100% of electricity used for buildings and facilities, street lights & traffic signals, and water & wastewater would be supplied from carbon-free sources. To ensure consistency with this, the CAAP checklist requires that all new municipal projects participate in Southern California Edison's Green Rate level (i.e., 100% carbon-free electricity) for all electricity accounts associated with the project until which time SCE provides 100% carbon-free electricity for all accounts by default.

These requirements ensure that all new municipal projects would be consistent with CAAP Action BE-6.

CAAP Checklist Table 1, Step 3: #3. Comply with all City building energy codes and ordinances

All projects must comply with all applicable City building energy codes and ordinances at the time of project approval. This includes, but is not limited to, any requirements for electrification, energy use intensity factors, zero-net-energy construction, CalGreen Tier 2 or other energy measures, or LEED requirements. All projects must comply with these requirements as a matter of City and State building code. These are standard requirements independent of the CAAP.

This checklist item addresses the following CAAP action:

- **BE-7: Update building codes to reduce emissions in new residential and commercial buildings.** Identify and implement building energy code options to establish incentives and/or requirements for all electric residential and commercial buildings.

Supporting actions in the CAAP for BE-7 include:

- BE-7.1: Evaluate a range of reach code components that incentivize between 50 and 100 percent of all new commercial and residential buildings to be 100 percent electric, and conduct an analysis of the cost-effectiveness of various measures.
- BE-7.2: Establish an outreach strategy to engage stakeholders in reach code development.

²⁵ Facilities include ECOC, Main Health Dept. Building, Public Works Yard, East Division Police Sub-Station, LBGO Headquarters, Airport Parking Garage (Lot B), City Place Lot A, City Place Lot B, City Place Lot C, Pike Parking Structure, Aquarium Parking Structure, Convention Center, and Pier A West.

The CAAP does not quantify the benefits of a reach code or require that new development comply with such reach code. However, should the city adopt a reach code in the future, all new development would be required to comply with the reach code once it is in effect.

CAAP Checklist Table 1, Step 3: #10. Incorporate Pedestrian Infrastructure

This checklist item requires that new development incorporate pedestrian infrastructure into its design. Specifically, the project must provide pedestrian facilities and connections to public transportation consistent with the City's Mobility Element, CX3 Pedestrian Plan, and any other relevant governing plan. The project must also incorporate additional pedestrian infrastructure, as detailed in the CAAP Checklist. The CAAP did not specifically quantify emission reductions for these actions though the reduction in VMT attributed to action T-1 is supported by these actions.

This checklist item addresses the following CAAP action:

- **T-2: Expand/improve pedestrian infrastructure citywide.** Ensure safe and convenient pedestrian infrastructure is provided citywide, including uninterrupted sidewalk connections, adequate lighting and visibility, shading, and safe intersections.

CAAP Checklist Table 1, Step 3: #11. Incorporate Bicycle Infrastructure

This checklist item requires that new development incorporate bicycle infrastructure into its design. Specifically, the project must provide bicycle facilities consistent with the City's Mobility Element, Bicycle Master Plan, Urban Design Element, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen. The project must also incorporate additional bicycle infrastructure, as detailed in the CAAP Checklist. The CAAP did not specifically quantify emission reductions for these actions, though the reduction in VMT attributed to action T-1 is supported by these actions.

This checklist item addresses the following CAAP action:

- **T-3: Increase bikeway infrastructure.** Expand the bikeway system and associated infrastructure throughout the city in order to encourage safe and convenient use of active and sustainable travel modes.

CAAP Checklist Table 1, Step 3: #12. Incorporate Electric Vehicle Charging Infrastructure

All projects must comply with any City ordinance, building code, or condition of approval that requires a certain amount of EV charging infrastructure and readiness. This may include minimum requirements for EV charging stations, EV-capable parking spaces, and EV-ready parking spaces. The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP action:

- **T-5: Develop an Electric Vehicle Infrastructure Master Plan.** Develop an EV infrastructure plan that aligns with county-wide efforts to guide investment and policy

decisions that will result in a distributed network of EV chargers to incentivize and facilitate EV ownership and use.

CAAP Checklist Table 1, Step 3: #13. Comply with City TDM Ordinance

This checklist item requires that all new projects comply with the City's TDM ordinance at the time of project approval. This may include preferential carpool/vanpool parking, bicycle parking, and shower facilities and locker rooms; trip reduction plans; transit-supportive infrastructure development; and similar strategies. The project must comply with any applicable VMT reduction target and incorporate any required monitoring mechanisms for development, subject to the ordinance.

This checklist item addresses the following CAAP action:

- **T-7: Update the Transportation Demand Management Ordinance.** Update and implement a transportation demand management (TDM) ordinance that encourages travel by transit, vanpool/carpool, and bicycle.

CAAP Checklist Table 1, Step 3: #14. Comply with the City's Transportation Impact Guidelines

This checklist item requires that all projects comply with the City's current TIA Guidelines. Projects may screen out if they meet certain criteria, such as being located in a transit priority area or local-serving retail development less than 50,000 square feet. Projects that don't screen out of the Transportation Screening Criteria must meet the VMT efficiency metrics identified by the TIA Guidelines (e.g., 11.8 daily VMT per capita for residential projects and 18.0 daily VMT per capita for office projects). The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP action:

- **T-9: Integrate SB 743 planning with CAAP process.** Evaluate the effectiveness of VMT reductions resulting from SB 743 compliance in achieving the City's GHG reduction target.

Tier 2 Measures: Qualitative Consistency Requirements

This section addresses each encouraged Tier 2 CAAP consistency checklist item for new development that relates to a CAAP action that was not quantified for GHG emission reductions in the CAAP. These items are encouraged for all projects as feasible. For each checklist item listed below, this document provides the basis behind the recommendations for new development.

CAAP Checklist Table 1, Step 3: #4. Building Energy Efficiency

This checklist item only applies only to projects that include a retrofit of an existing building. All projects are encouraged to incorporate energy efficiency measures into their design, which can reduce carbon emissions while also reducing future operational costs. The CAAP Checklist includes a number of items, including energy audits and benchmarking, CalGreen Tier 2 or voluntary building energy measures, electrification, the use of efficient appliances, energy

efficiency retrofits, and net-zero energy. The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP actions:

- **BE-4: Develop a residential and commercial energy assessment and benchmarking program.** Develop an energy assessment and benchmarking program for commercial and residential properties to identify opportunities for energy efficiency and evaluate options to increase energy efficiency retrofits.
- **BE-5: Provide access to energy efficiency financing, rebates, and incentives for building owners.** Identify funding sources to increase energy efficiency improvements in the community's existing building stock and develop an outreach strategy to promote opportunities to all segments of the community.

CAAP Checklist Table 1, Step 3: #7. Incorporate On-site Composting, Mulching, and/or Anaerobic Digestion

This checklist item encourages projects to incorporate organic waste processing capabilities, such as composting, mulching, and anaerobic digestion facilities (where applicable), and to collaborate with agencies to share organic processing information with interested parties. The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP action:

- **W-4: Identify organic waste management options.** Evaluate organic waste collection and processing options, including composting, mulching, and anaerobic digestion, and develop a plan to implement feasible options.

CAAP Checklist Table 1, Step 3: #8. Meets Transportation Screening Criteria

This item is discussed above in the *Transportation Screening Criteria* section above (Step 2). As discussed above, these screening criteria represent characteristics that are desirable from a GHG emission reduction perspective, as envisioned by the CAAP. Projects that meet these criteria are assumed to result in reduced transportation activity and significantly lower mobile source GHG emissions than the citywide average development and would therefore be consistent with the CAAP's transportation actions.

CAAP Checklist Table 1, Step 3: #15. High-Density, Mixed-Use, Transit-Oriented, Walkable Infill Project Design

This checklist item encourages projects to be located in a transit priority area or transit corridor, include local-serving retail, include affordable housing, include a mix of uses, and include shared and reduced parking strategies, among other items. The CAAP did not quantify emission reductions for these actions.

This checklist item addresses the following CAAP actions:

- **T-6: Increase employment and residential development along primary transit corridors.** Identify land use and/or zoning changes to expand TOD opportunities along the city's primary transit corridors. Pursue strategies to increase affordable housing in these areas.
- **T-8: Update the Transportation Demand Management Ordinance.** Use the City's land use authority to increase development density particularly near transit, and provide a mix of land uses, such that residents and employees in the city can easily access goods, services, and entertainment via transit or active transportation modes.

All projects must also achieve a five percent reduction in vehicle trips and VMT compared to the project without such vehicle trip reduction features (CAAP Checklist item #9), incorporate electric vehicle charging infrastructure, comply with the City's TDM ordinance, and comply with the City's current TIA Guidelines.

Other CAAP Actions Not Applicable to New Development

The CAAP included two quantified actions that would not apply to new development:

- **BE-8: Identify and implement short-term measures to reduce emissions related to oil and gas extraction.** Implement the suite of near-term measures included in the CAAP Oil and Gas Technical Memorandum to reduce oil and gas extraction emissions per the memorandum.
- **T-4: Implement the Port of Long Beach Clean Air Action Plan.** Implement the Port of Long Beach Clean Trucks Program, which is described in the San Pedro Bay Ports Clean Air Action Plan, to reduce the GHG emissions associated with goods movement through trucks serving the Port of Los Angeles and Port of Long Beach.

New projects would not have to comply with these CAAP actions because they are not directed at discretionary projects. Action BE-8 applies to oil and gas extraction operations while action T-4 applies to the Port of Long Beach's operational activities.

Step 4: Identify Alternative Project Emission Reduction Measures and Additional GHG Reductions

Projects that propose alternative GHG emission reduction measures to those identified in Step 3 above (CAAP Checklist Table 1) or propose to include additional GHG emission reduction measures beyond those described in Step 3 above shall provide a summary explanation of the proposed measures and demonstrate GHG reductions achievable through the proposed measures. These alternative or additional project measures shall be documented in CAAP Checklist Table 2. This process represents **Step 4** of the CAAP Checklist.

Alternative actions must be additional beyond anything quantified for GHG emission reductions in the CAAP and must be additional to any requirements at the federal, state, regional, or local level. These actions must be physical design features to be included on the project plans and/or construction contracts. All alternative actions must be real, permanent, quantifiable, verifiable,

enforceable, and additional.²⁶ All alternative actions must achieve the same or greater level of GHG emission reductions as the required Tier 1 CAAP Action(s) that they are replacing. This will ensure that projects which cannot (or choose not to) comply with certain Tier 1 CAAP Actions will still be consistent with the CAAP's target emissions level for new development and would not inhibit the CAAP from achieving its citywide emission reduction target for 2030.

For each alternative measure proposed, the project must quantitatively demonstrate the effectiveness of the proposed measure to reduce the project's GHG emissions. This includes supporting quantification documentation (such as Microsoft Excel and CalEEMod modeling files), assumptions, and reference material. The GHG emission reduction analysis must be consistent with all CEQA guidelines and standard practice for modeling GHG emissions for new development measures and actions. All documentation submitted by the project applicant for alternative actions is subject to city verification and approval.

At this time, carbon offset credits are not permitted to be used as alternative project emission reduction measures. The city retains discretion to permit carbon offset credits in the future.

Step 5: Demonstrate consistency with the CAAP Adaptation Actions

Projects must demonstrate consistency with the CAAP Adaptation Action requirements (CAAP Checklist Table 3) or document why the actions are not applicable or are infeasible. This represents **Step 5** of the CAAP Checklist.

All Adaptation Actions are encouraged to be incorporated into future discretionary projects, as applicable. However, many of these actions may be implemented by the City or other agencies and may not all be subject to CEQA. The Adaptation Actions in the CAAP are described for citywide implementation at a programmatic level, and the CAAP Checklist translates those actions into recommendations for strategies that may be incorporated at the project level for future developments.

CAAP Checklist Table 3: #1. Incorporate Cool Roofs, Cool Walls, Reflective Streets, Cool Surfaces, and Shade Canopies

This checklist item addresses the following CAAP actions:

- **EH-1: Increase Presence of Cool Roofs and Cool Walls.** Increase the installation of cool roofs and cool walls to keep buildings and neighborhoods cooler.
- **EH-2: Increase the Presence of Reflective Streets, Cool Surfaces, and Shade Canopies.** Treat paved surfaces such as streets, parking lots, and playgrounds with reflective surfaces and install shade canopies to reduce urban heat.

²⁶ Definitions for these terms are generally as set forth in both subdivisions (d)(1) and (d)(2) of California Health and Safety Code §38562.

CAAP Checklist Table 3: 2. Incorporate Tree Plantings and Expands Urban Forest Cover

This checklist item addresses the following CAAP actions:

- **EH-3: Enhance and Expand Urban Forest Cover and Vegetation.** Expand and enhance urban forest cover and vegetation to mitigate urban heat island conditions.

CAAP Checklist Table 3: 3. Incorporate Bus Shelter Amenities

This checklist item addresses the following CAAP actions:

- **EH-7: Provide Bus Shelter Amenities.** Provide more bus shelter amenities to help prevent health effects from long sun exposure and to incentivize usage of public transportation.

CAAP Checklist Table 3: 4. Install Photocatalytic Tiles

This checklist item addresses the following CAAP actions:

- **AQ-1: Incentivize Installation of Photocatalytic Tiles.** Support the installation of photocatalytic tiles to improve air quality.

CAAP Checklist Table 3: 5. Include Urban Agriculture

This checklist item addresses the following CAAP actions:

- **AQ-2: Encourage Urban Agriculture Practices that Reduce Air Quality Pollution.** Continue to incentivize urban agriculture practices and projects in community and home gardens that increase local food production and reduce air quality impacts from food transportation.

CAAP Checklist Table 3: 6. Use Electric Lawn and Garden Equipment, Outdoor Power Equipment, and Other Small Equipment

This checklist item addresses the following CAAP actions:

- **AQ-4: Electrify Small Local Emitters, Such as Lawn and Garden Equipment, Outdoor Power Equipment, and Others.** Support the replacement of small, fossil-fuel-powered engine equipment with electric-powered equipment.

CAAP Checklist Table 3: 7. Implement Water Use Efficiency and Water Conservation

This checklist item addresses the following CAAP actions:

- **DRT-1: Continue Development And Implementation Of Water Use Efficiency Programs And Implement Additional Water Conservation Programs.** Continue development and implementation of additional water use efficiency and conservation programs to help reduce water use.

CAAP Checklist Table 3: 8. Incorporate Green Infrastructure and Green Streets

This checklist item addresses the following CAAP actions:

- **DRT-3: Expand Usage of Green Infrastructure And Green Streets.** Incorporate green infrastructure and green streets to diversify water supply, increase natural and stormwater capture, prevent urban runoff, reduce the demand on existing infrastructure, reduce the heat island effect, and increase sustainability and resiliency.

CAAP Checklist Table 3: 9. Use Recycled Water and Greywater for Non-Potable Uses; includes Rainfall Capture

This checklist item addresses the following CAAP actions:

- **DRT-4: Expand Usage of Recycled Water and Greywater for Non-Potable Use.** Increase and incentivize recycled water and greywater use to establish a more diverse water supply portfolio.
- **DRT-5: Incorporate Increased Rainfall Capture and Other Actions to Maximize Local Water Supplies and Offset Imported Water.** Increase and incentivize rainfall capture and other actions to establish a more diverse water supply portfolio and maximize local water supplies from stormwater capture, recycled water, and groundwater.

CAAP Checklist Table 3: 10. Comply with all City Floodplain and Sea Level Rise Regulations

This checklist item addresses the following CAAP actions

- **FLD-1: Update and Augment Floodplain Regulations as Necessary.** Update and augment floodplain regulations as necessary to limit, elevate, or provide floodproofing standards for development in areas designated as vulnerable to flooding in order to minimize physical damage to development.
- **FLD-2: Incorporate Sea Level Rise Language into Citywide Plans, Policies, and Regulations.** Incorporate sea level rise adaptation into relevant plans, policies, and regulations (e.g., the General Plan, neighborhood plans, Local Coastal Program, design standards for capital projects)

CAAP Checklist Table 3: 11. Comply with the City's Current Stormwater Management Plan

This checklist item addresses the following CAAP actions:

- **FLD-5: Update the City's Existing Stormwater Management Plan.** Update the City's existing Stormwater Management Plan to account for flood risks associated with climate change and develop a funding/implementation plan for fully fund storm drain and pump station improvements.

CAAP Checklist Table 3: 12. Ensure that all critical infrastructure in the sea level rise vulnerability zone is elevated

This checklist item addresses the following CAAP actions:

- **FLD-10: Relocate/Elevate Critical Infrastructure.** Carry out more detailed studies to assess the need to raise or relocate critical infrastructure outside of the sea level rise vulnerability zone.

CAAP Checklist Table 3: 13. Elevate Street Hardscapes and Waterfront Streets and Paths

This checklist item addresses the following CAAP actions:

- **FLD-14: Elevate street hardscapes.** Street hardscapes such as curbs could be elevated and extended to eliminate gaps that could become flood pathways.
- **FLD-15: Elevate streets/pathways.** Waterfront streets and paths may need to be elevated to protect transportation routes and provide flood protection for infrastructure behind the road/path.