Appendix B:
Air Quality, Energy, and Greenhouse Gas Emissions Supporting Information

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B.1 - Air Quality/Health Risk Technical Report

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SUISUN LOGISTICS CENTER AIR QUALITY/HEALTH RISK TECHNICAL REPORT

SUISUN CITY, CALIFORNIA

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AB	Assembly Bill
ACC	Advanced Clean Cars
AERMOD	American Meteorological Society/Environmental Protection Agency regulatory air dispersion model
APCDs	Air Pollution Control Districts
APCO	Air Pollution Control Officer
AQ	air quality
AQMDs	Air Quality Management Districts
ATCM	Airborne Toxic Control Measure
ASFs	age sensitivity factors
BAAQMD	Bay Area Air Quality Management District
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emission Estimator Model
CAP	criteria air pollutant
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CO	carbon monoxide
CO_2	carbon dioxide
cREL	chronic reference exposure level
DPM	Diesel Particulate Matter
EF	emission factor
EIR	Environmental Impact Report
EMFAC	EMission FACtors model
FAH	Fraction of time at home
$\mu g/m^3$	microgram/cubic meter
GHG	greenhouse gas
g/s	gram/second
HIC	chronic hazard index
HIs	hazard indices
HQ	hazard quotient
HRA	health risk assessment
LDR	Land Disposal Restrictions
MEI	Maximally Exposed Sensitive Receptors
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Datasets
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NHTSA	National Highway Traffic Safety Administration
NO	Nitric oxide
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
O_3	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
OFFROAD	Off-road Emissions Inventory Program model

Acronym	Definition
Pb	Lead
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million by volume
Ramboll	Ramboll Americas Engineering Solutions Inc
REL	reference exposure level
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SAFE	Safer Affordable Fuel-Efficient
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SOx	sulfur oxide
TACs	Toxic Air Contaminant
TOG	Total Organic Gases
TRUs	transportation refrigeration units
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
VDECS	Verified Diesel Emission Control Strategies
VMT	Vehicle miles traveled
VOCs	Volatile Organic Compounds
ZEV	zero-emission vehicle

1. INTRODUCTION

Ramboll Americas Engineering Solutions, Inc. (Ramboll) was retained to prepare an Air Quality (AQ) and Health Risk Technical Report for the proposed Suisun Logistics Center Project in Suisun City, California (Project).

This report consists of three major elements. First, it assesses the criteria air pollutant (CAP) emissions for the proposed Project. Specifically, the CAP emissions associated with construction and operation of the Project were estimated to evaluate if the Project would cause any significant air quality impacts. Second, the report provides a human health risk assessment (HRA) of both construction and operational emissions for the Project, considering toxic air contaminant (TAC) emissions in addition to relevant CAP emissions. And third, the report evaluates the Project's consistency with the applicable air quality plan. A description of the methodology and results of the analyses are provided in the following sub-sections.

1.1 Existing Conditions

The 167.43-acre Project site is located in unincorporated Solano County, within the existing Suisun City (the City) Sphere of Influence. The Project site is bounded by a service station and Walters Road to the west, Petersen Road to the north, grazing land to the east, and State Route (SR) 12 to the south. Travis Air Force Base is located approximately 0.5 mile to the east. There are existing residential, commercial and industrial land uses to the north and west of the Project site, and open spaces to the east and south of the Project site. The nearest commercial property is located approximately 100 feet to the west, and the nearest residential property is approximately 180 feet southwest. The existing site is designated "Agricultural" by the Solano County General Plan and is zoned "Exclusive Agricultural 160 acres (A-160)" by the Solano County Zoning Ordinance. The land is currently used for cattle grazing and contains grassy vegetation. The project site is currently designated "Special Planning Area" by the Suisun City General Plan, which is a non-binding designation denoting the City's intention that the site be thoroughly planned before being annexed into the City.

1.2 Project Analysis

The Project consists of 2.1 million square feet of warehouse uses on approximately 120 acres of the Project site, consisting of six buildings ranging from approximately 145,000 to 645,000 square feet in size. Each building would be equipped with docks, grade-level roll-up doors, and trailer parking stalls as well as associated passenger vehicle parking areas, driveways, and other supporting infrastructure. Some portion or all of the Project could include cold storage, which would be determined at a later date in the development process. The facility would be enclosed with a secure perimeter, and access would be restricted to authorized users via three main hauling and passenger entrances on along Petersen Road and one passenger entrance along Walters Road.

The rest of the Project site, totaling approximately 47 acres, would be preserved as open space. In addition to warehouse construction, the project would include storm drainage installation, roadway and sidewalk improvements, and installation of utilities, such as the extension of service laterals to the proposed buildings.

Peterson Road would be widened to include three full access unsignalized driveways intended for trucks and an additional eastbound lane. The existing Petersen Road westbound lane and Class I bike/pedestrian facility would also be improved by the Project. Some of these Peterson Road improvements are in furtherance of a project objective of increasing the capacity of that roadway

Road beyond what is necessary to mitigate Project impacts in order to provide a net benefit for Travis Air Force Base.

2. ENVIRONMENTAL AND REGULATORY BACKGROUND

2.1 Criteria Air Pollutants

Criteria air pollutants (CAPs) are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive people from illness or discomfort. Pollutants of concern include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and lead. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as CAPs. These pollutants are discussed in the following paragraphs.

2.1.1 Ozone

O_3 is a colorless gas that is formed in the atmosphere when volatile organic compounds (VOCs), sometimes referred to as reactive organic gases, and oxides of nitrogen (NO_x) react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of VOCs and NO_X, the precursors of O_3, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Northern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

2.1.2 Nitrogen Dioxide

Most NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_X and are major contributors to O_3 formation. The primary sources of NO, the precursor to NO_2, include automobile exhaust and industrial sources. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the atmosphere, causing reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis, and some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million by volume (ppm).

2.1.3 Carbon Monoxide

Carbon monoxide (CO) is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, automobile exhaust accounts for most CO emissions. CO emissions are generally lower in rural areas. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest levels of CO typically occur during the colder months of the year when inversion conditions, where a layer of warm air sits atop cool air, are more frequent and can trap pollutants close to the ground. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

2.1.4 Sulfur Dioxide

SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits placed on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

2.1.5 Particulate Matter

Particulate matter (PM) pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_X), NO_X, and VOCs. Inhalable or coarse particulate matter, or PM_{10}, is about one- seventh the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the bloodstream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

2.1.6 Lead

Lead (Pb) in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline, the manufacturing of batteries, paint, ink, ceramics, ammunition, and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

2.1.7 Sulfates

Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere. Sulfates can result in respiratory impairment, as well as reduced visibility.

2.1.8 Vinyl Chloride

Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

2.1.9 Hydrogen Sulfide

Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

2.1.10 Visibility-Reducing Particles

Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the view shed of natural scenery, reduced airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

2.2 Non-Criteria Air Pollutants

2.2.1 Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic non-cancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, waste processing facilities and laboratories; mobile sources such as automobiles; and area sources such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and non-carcinogenic effects. Non-carcinogenic effects typically affect one or more target organ systems and may be experienced either on short-term (acute) or long-term (chronic) exposure to a given TAC.

2.2.2 Diesel Particulate Matter

Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. California Air Resources Board (CARB) classified “particulate emissions from diesel-fueled engines” (DPM; 17 California Code of Regulations [CCR] 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars, and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM.[1] To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000.

2.3 Regulatory Setting

2.3.1 Federal and State Ambient Air Quality Standards for Criteria Air Pollutants

The Federal Clean Air Act (CAA) requires the adoption of National Ambient Air Quality Standards (NAAQS), which are periodically updated, to protect the public health and welfare from the effects of air pollution. Current federal standards are set for SO_2, CO, NO_2, O_3, PM_{10}, $PM_{2.5}$, and Pb.[2]

The State of California also has established additional standards, known as the California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. The current NAAQS and CAAQS are shown in **Table 2-1**.

Specific geographic areas are classified as either "attainment" or "nonattainment" areas for each pollutant based upon the comparison of measured data with the NAAQS and CAAQS. Those areas designated as "nonattainment" for purposes of NAAQS compliance are required to prepare regional air quality plans, which set forth a strategy for bringing an area into compliance with the standards. These regional air quality plans developed to meet federal requirements are included in an overall program referred to as the State Implementation Plan (SIP). If the SIP is deemed acceptable, the United States Environmental Protection Agency (USEPA) will delegate responsibility for implementation pursuant to the SIP to the State and/or its air districts therein.

Whenever the USEPA revises or establishes a new NAAQS, the State and the USEPA have specific obligations to ensure that the NAAQS is met.[3] These are listed below:

- The USEPA must designate areas as meeting (attainment areas) or not meeting (nonattainment areas) the NAAQS within two years after its promulgation.
- States must submit "infrastructure SIPs" to show that they have the basic air quality management program components in place to implement the NAAQS within three years after its promulgation.
- States must submit nonattainment area SIPs that outline the strategies and emission control measures that will improve air quality and make the area meet the NAAQS within 18 to 24 months after designation.

The steps involved in the SIP process are described below.[4]

- SIPs must be developed with public input and be formally adopted by the State and submitted to the USEPA by the Governor's designee (CARB in California).
- The USEPA reviews each SIP and proposes to approve or disapprove all or part it. The public is then provided with an opportunity to comment on the USEPA's proposed action. The USEPA considers public input before taking final action on a State's plan.

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1 CARB. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/rrpfinal.pdf. Accessed: November 2023.

2 USEPA. NAAQS. Available at: https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed: November 2023.

3 USEPA. NAAQS Implementation Process. Available at: https://www.epa.gov/criteria-air-pollutants/naaqs-implementation-process. Accessed: November 2023.

4 USEPA. State Implementation Plan Development Process. Available at: https://www.epa.gov/criteria-air-pollutants/naaqs-implementation-process. Accessed: November 2023.

- If the USEPA approves all or part of a SIP, those control measures are enforceable in federal court. In the event a State fails to submit an approvable SIP or if the USEPA disapproves a SIP, the USEPA is required to develop a Federal Implementation Plan.

Table 2-2 summarizes the attainment status of Bay Area Air Quality Management District (BAAQMD) for the pollutants regulated by the NAAQS and CAAQS.[5] As seen in **Table 2-2**, BAAQMD is currently in attainment (including where unclassified or maintenance) for: the federal 24-hour PM_{10} standard and federal annual $PM_{2.5}$ standard, the federal and State CO standards, the federal and State NO_2 standards, the federal and State SO_2 standards, and the State hydrogen sulfide, vinyl chloride, sulfates, the federal lead standards. However, as also shown in **Table 2-2**, BAAQMD is currently designated as nonattainment for the federal and State O_3 standards, the State PM_{10} standards, the federal 24-hour $PM_{2.5}$ standards, and the state annual $PM_{2.5}$ standards.[6, 7]

2.3.2 Federal Heavy-duty Engines and Vehicles Fuel Efficiency Standards

In 2010, President Obama issued a memorandum directing federal agencies to establish additional standards regarding fuel efficiency and greenhouse gas (GHG) reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and National Highway Traffic Safety Administration (NHTSA) proposed stringent, coordinated federal GHG and fuel economy standards for model year 2017–2025 light-duty vehicles. The proposed standards are projected to achieve 163 grams/mile of carbon dioxide (CO_2) in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon (mpg) if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021.
In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles.

In August 2016, the USEPA 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 of sizes of buses and work trucks. The final standards are expected to lower carbon dioxide emissions by approximately 1.1 billion metric tons (MT) and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.[8]

In August 2017, the USEPA asked for additional information and data relevant to assessing whether the GHG emissions standards for model years 2022-2025 remain appropriate. In early 2018, the USEPA Administrator announced that the midterm evaluation for the GHG emissions standards for cars

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[5] USEPA. Nonattainment Areas for Criteria Pollutants (Green Book). Available at: https://www.epa.gov/green-book. Accessed: November 2023.

[6] California standard attainment status based on CARB website. Available at:https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations. Accessed: November 2023.

[7] BAAQMD. 2017. Air Quality Standards and Attainment Status. Available at: https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status. Accessed: November 2023.

[8] USEPA and NHTSA. 2016. Federal Register, Vol. 81, No. 206, Rules & Regulations, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium and Heavy-Duty Engines and Vehicles – Phase 2. October 25. Available at: https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed: November 2023.

and light-duty trucks for model years 2022-2025 was completed and stated his determination that the current standards should be revised in light of recent data. Subsequently, in April 2018, the USEPA and NHTSA proposed to amend certain existing CAFE standards for passenger cars and light trucks and establish new standards, covering model years 2022-2025. Compared to maintaining the post-2020 standards now in place, the pending proposal would increase U.S. fuel consumption.[9] California and other states have announced their intent to challenge federal actions that would delay or eliminate GHG reductions. In April 2020, NHTSA and EPA amended the CAFE and GHG emissions standards for passenger cars and light trucks and established new less stringent standards, covering model years 2021 through 2026.

On September 27, 2019, the USEPA and NHTSA published the SAFE Rule (Part One).[10] The SAFE Rule (Part One) went into effect in November 2019, and revoked California's authority to set its own GHGs standards and set zero-emission vehicle mandates in California. The SAFE Rule (Part One) freezes new zero-emission vehicles (ZEV) sales at model year 2020 levels for year 2021 and beyond and will likely result in a lower number of future ZEVs and a corresponding greater number of future gasoline internal combustion engine vehicles. In response to the USEPA's adoption of the SAFE Rule (Part One), CARB has issued guidance regarding the adjustment of vehicle emissions factors to account for the rule's implications on criteria air pollutant and greenhouse gas emissions.[11,12] The SAFE Rule is subject to ongoing litigation and on February 8, 2021, the D.C. Circuit Court of Appeals granted the Biden Administration's motion to stay litigation over Part 1 of the SAFE Rule. On April 22 and April 28, 2021, respectively, NHTSA and USEPA formally announced their intent to reconsider the Safe Rule (Part One).[13] A virtual public hearing for EPA's Notice of Reconsideration of SAFE I was held on June 2, 2021. The NHTSA finalized the Corporate Average Fuel Economy Pre-emption rulemaking to withdraw its portions of the SAFE I Rule on December 21, 2021. On March 9, 2022, USEPA reinstated California's authority under the Clean Air Act to implement its own GHG emission standards and ZEV sales mandate and entirely rescinded the SAFE Rule (Part One).

In August 2021, USEPA proposed to revise existing national greenhouse gas (GHG) emissions standards for passenger cars and light trucks for Model Years 2023- 2026 to make the standards more stringent. On August 5, 2021, USEPA announced plans to reduce GHG emissions and other harmful air pollutants from heavy-duty trucks through a series of rulemakings over the next three years. The first

[9] NHTSA. 2018. Federal Register, Vol. 83, No. 72, Rules & Regulations, Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light Duty Vehicles. April 13. Available at: https://www.govinfo.gov/content/pkg/FR-2018-04-13/pdf/2018-07364.pdf. Accessed: November 2023.

[10] USEPA and NHTSA. 2019. Federal Register, Vol. 84, No. 188, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program. September 27. Available at: https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-20672.pdf. Accessed: November 2023.

[11] CARB. 2019. EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One. November 20. Available at: https://ww2.arb.ca.gov/sites/default/files/202302/emfac_off_model_adjustment_factors_final_draft.pdf. Accessed: November 2023.

[12] CARB. 2020. EMFAC Off-Model Adjustment Factors for Carbon Dioxide Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. June 26. Available at: https://ww2.arb.ca.gov/sites/default/files/2023-02/emfac_off_model_co2_adjustment_factors_06262020-final.pdf. Accessed: November 2023.

[13] USEPA. 2021. Federal Register, Vol. 86, No. 80, California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a previous Withdrawal of a Waiver of Preemption; Opportunity for Public Hearing and Public Comment. April 28. Available at: https://www.govinfo.gov/content/pkg/FR-2021-04-28/pdf/2021-08826.pdf. Accessed: November 2023.

rulemaking, signed in December 2022, focuses on reducing emissions that form smog and soot from heavy-duty vehicles in model year 2027 and beyond.[14] Since this first rulemaking, two additional rulemakings have been proposed. One focuses on smog and soot forming emissions and greenhouse gas emissions from light- and medium-duty vehicles starting with model year 2027, and later models of commercial pickup trucks and vans. The other focuses on greenhouse gas emissions from heavy-duty vehicles for model year 2027 and later.

2.3.3 Federal Hazardous Air Pollutants Program

The 1977 CAA Amendments required the USEPA to identify National Emissions Standards for Hazardous Air Pollutants (NESHAPs) to protect the public health and welfare. Hazardous air pollutants include certain VOCs, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 CAA Amendments, which expanded the control program for hazardous air pollutants, 189 substances and chemical families were identified as hazardous air pollutants.

2.3.4 Federal Environmental Justice Programs

Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The USEPA created the Office of Environmental Justice (OEJ) in 1992 to address environmental justice issues. OEJ provides financial and technical assistance and facilitates the USEPA's efforts to mandate EJ in all of the agency's work, including setting standards and permitting facilities.

Several federal environmental justice tools are available to assist agencies in evaluating potential impacts to communities facing EJ-related concerns. Two of these tools are described below.

2.3.4.1 Environmental Justice Screening and Mapping Tool (EJScreen)

In 1994, Executive Order 12898 directed federal agencies to collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin or income. The Environmental Justice Screening and Mapping Tool (EJScreen) was created with the intention to assist the USEPA's EJ responsibilities and goals that are consistent with Executive Order 12898. EJScreen is a widely used federal assessment tool for evaluating potential impacts to communities facing EJ-related concerns.[15] It provides a nationally consistent dataset and approach for combining environmental and demographic socioeconomic indicators used to assess potential exposure in vulnerable communities. This analysis uses the most updated version of EJScreen, EJScreen Version 2.2, which was released in June 2023.[16]

EJScreen reports include 13 environmental indicators, 7 socioeconomic indicators, and a series of EJ Index and Supplemental Index values that combine each of the 13 environmental indicators with socioeconomic indicators.[17] It should be noted that EJScreen does not provide a prescriptive decision of whether or not a community is considered "disadvantaged"; however, previous EJScreen guidance

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[14] USEPA. 2021. Clean Trucks Plan. https://www.epa.gov/regulations-emissions-vehicles-and-engines/clean-trucks-plan. August. Accessed: September 2022.

[15] USEPA. 2023. EJScreen: Environmental Justice Screening and Mapping Tool. Available at: https://www.epa.gov/ejscreen. November 14, 2023. Accessed on: July 17. 2023.

[16] USEPA. 2023. EJScreen Change Log. Available at: https://www.epa.gov/ejscreen/ejscreen-change-log. September 19, 2023. Accessed on: December 28. 2023.

[17] USEPA. 2023. Understanding EJScreen Results. Available at: https://www.epa.gov/ejscreen/understanding-ejscreen-results. October 4, 2023. Accessed on: December 28, 2023.

recommends using the 80th percentile as a metric for identifying which communities warrant further research and consideration.[18] To calculate an EJ Index, 1 of the 13 environmental indicators are combined with the Demographic Index which averages two different socioeconomic factors into a single value:

- The environmental indicator percentile for a given area, and
- A Demographic Index for a given area, which is the average of percent low-income population and percent people of color.

An EJ report can be created in EJScreen for a buffer of any distance of a proposed facility. The local community may have potential EJ concerns if any of the 13 EJ Indexes is above the 80th percentile on a national percentile scale.

2.3.4.2 Climate and Economic Justice Screening Tool (CEJST)

In January of 2021, Executive Order 14008 was issued to direct the Council on Environmental Quality (CEQ) to develop a new tool to help identify disadvantaged communities. The Climate and Economic Justice Screening Tool (CEJST) is an interactive map that can be used to identify disadvantaged communities that are marginalized, underserved, and overburdened by pollution to enable federal benefits to flow to these communities.[19] CEJST can highlight disadvantaged communities in the United States, provide information to determine baseline conditions, and evaluate a community's need for EJ-related benefits. CEJST evaluates eight metric categories which are the following: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. In CEJST, a community is identified as a disadvantaged community by the following criteria:

- Located in a census tract that is at or above the 90th percentile for a metric within a given category; and
- Located in a census tract at or above the threshold for an associated socioeconomic burden:
  - For the "Workforce Development" category: 10% or more of adults 25 or older have not attained a high school degree.
  - For all other categories: the census tract is at or above the 65th percentile for low income.

Additionally, a community in CEJST can be identified as a disadvantaged community if it is in a census tract entirely surrounded by disadvantaged communities and is at or above the 50th percentile for low income or located in a census tract that is within the boundaries of Federally Recognized Tribes, including Alaska Native Villages.

2.3.5 California's Air Toxics Program

The state Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and non-carcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health

[18] USEPA. 2023. EJScreen Technical Documentation for Version 2.2. Available at: https://www.epa.gov/system/files/documents/2023-06/ejscreen-tech-doc-version-2-2.pdf. July. Accessed on: July 17, 2023.

[19] Council on Environmental Quality. 2023. Climate and Economic Justice Screening Tool. Available at: https://screeningtool.geoplatform.gov/en/about and https://screeningtool.geoplatform.gov/en/methodology#5.46/38.072/-115.901. Accessed on: July 17, 2023.

and Safety Code. In accordance with Assembly Bill (AB) 2728, the state list includes the (federal) hazardous air pollutants.

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not reduce the quantity of air toxics emissions. Instead, under AB 2588, TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform an HRA, and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The plan is anticipated to result in an 85% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy-Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy-Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There also are several Airborne Toxic Control Measures that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

2.3.6 California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

2.3.7 California's Pavley Standards

AB 1493 ("the Pavley Standard" or AB 1493) required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model year 2009 through 2016.

CARB's approach to passenger vehicles (cars and light trucks), under AB 1493, combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. This new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California. These standards will apply to all passenger and light-duty trucks used by customers, employees of and deliveries to the Project. While AB 1493 focuses on the reduction of GHG emissions, it is anticipated that this regulation would also help reduce criteria air pollutants.

2.3.8 California's Advanced Clean Cars

In January 2012, CARB approved the Advanced Clean Cars I (ACC I) program,[20] a new emissions-control program for model year 2015 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles. While ACC I focuses on the reduction of GHG emissions, it is anticipated that this regulation would also help reduce criteria air pollutants. In 2022, the Advanced Clean Cars II (ACC II) regulations were adopted, imposing new low

[20] CARB. Advanced Clean Cars Program. Available at: https://ww2.arb.ca.gov/index.php/our-work/programs/advanced-clean-cars-program. Accessed: November 2023.

emission vehicles(LEV) and zero-emission vehicle (ZEV) standards for model years 2026-2035 with the goal that by 2035 all new passenger cars, trucks, and SUVs sold in California with be zero emissions.[21] ACC II integrates stricter emission standards for gasoline vehicles for gasoline vehicles, and require higher penetration rate of electric and hydrogen fuel cell vehicles. The annual carbon dioxide emission reduction benefits are estimated to be 65 million metric tons in 2040, combined with other air quality and community co-benefits.[22]

2.3.9 California's Advanced Clean Trucks

In June 2020, CARB approved the Advanced Clean Trucks regulation, which has requirements for manufacturer ZEV sales and a one-time reporting requirement for large entities and fleets.[23] The Advanced Clean Truck Regulation is part of a holistic approach to accelerate a large-scale transition of zero-emission medium- and heavy-duty vehicles from Class 2b to Class 8. Manufacturers who certify Class 2b-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% of Class 2b – 3 truck sales, 75% of Class 4 – 8 straight truck sales, and 40% of truck tractor sales. Large employers including retailers, manufacturers, brokers and others are required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, are required to report about their existing fleet operations. This information helps to identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

2.3.10 California's Diesel Emissions Control Measures

CARB has adopted several Airborne Toxic Control Measures (ATCMs) to control diesel particulate emissions and emissions from in-use on- and off-road diesel-fueled vehicles. With the assistance of the Advisory Committee and its subcommittees, CARB developed and approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*[24] and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*.[25] Various control measures adopted by CARB to reduce diesel emissions are summarized below.

2.3.10.1 ATCM: Diesel-Fueled Commercial Motor Vehicle Idling

This ATCM applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. The measure limits idling of trucks to a maximum of 5 minutes, except when the vehicle is queuing.[26] While this

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[21] CARB. Advanced Clean Cars II Program. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii. Accessed: November 2023.

[22] CARB. 2022. Advanced Clean Cars II, Proposed Amendments to the Low Emissions, Zero Emissions, and Associated Vehicle Regulations, Standardized Regulatory Impact Assessment (SRIA). Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appc1.pdf. Accessed November 2023.

[23] CARB. 2020. Advanced Clean Trucks. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks. Accessed: November 2023.

[24] CARB. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Available at: https://www.arb.ca.gov/diesel/documents/rrpfinal.pdf. Accessed: November 2023.

[25] CARB. 2008. California's Diesel Risk Reduction Plan: Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. June 10. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/rmg.htm. Accessed: November 2023.

[26] 13 CCR 2485: Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/truck-idling/13ccr2485_09022016.pdf. Accessed: November 2023.

ATCM focuses on the reduction of diesel particulate emissions as a toxic, this regulation would also help reduce criteria air pollutants.

2.3.10.2 ATCM: Stationary Compression-Ignition Engines

This ATCM establishes emission standards and fuel use requirements for new and in-use stationary engines used in prime and emergency back-up applications (non-agricultural) and for new stationary engines used in agricultural applications.[27] While this ATCM focuses on the reduction of diesel particulate emissions as a toxic, this regulation would also help reduce criteria air pollutants.

2.3.10.3 ATCM: Transport Refrigeration Unit

This ATCM applies to transportation refrigeration units (TRUs), which are commonly found on various transported containers, including truck vans, semi-truck trailers, shipping containers and railcars. TRUs are temperature control systems powered by small (typically 9 to 36 horsepower) diesel internal combustion engines. Despite their small individual size, TRUs are often active in dense congregations around distribution centers, truck stops, and other facilities, resulting in a significantly greater combined loading. This ATCM focused on the reduction of diesel particulate emissions as a toxic in order to improve air quality around these centers. Additionally, transitioning diesel TRUs to zero-emissions technologies is a priority because of Executive Order N-79-20, which set a goal of 100 percent zero-emission off-road vehicles and equipment in California by 2035.

2.3.10.4 In-Use Off-Road Diesel-Fueled Fleets

These regulations reduce diesel PM and NO_x emissions from in-use, off-road heavy-duty diesel vehicles in California. Such vehicles typically are used in construction, mining, and industrial operations. The regulations, among other requirements, impose limits on idling; require all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; restrict the adding of older vehicles into fleets; and require fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS) (i.e., exhaust retrofits).

The requirements and compliance dates of the regulations vary by fleet size. Large fleets have compliance deadlines each year from 2014 through 2023, medium fleets each year from 2017 through 2023, and small fleets each year from 2019 through 2028.[28] At the time of writing, CARB is in the process of developing a rule amendment. The target of the amendment aligns with the targets set out by the Draft 2020 Mobile Source Strategy, which sets a goal of reducing statewide NOx

emissions from the construction and earth moving sector by 7.5 tons per day by 2031.

2.3.10.5 Truck and Bus Regulation

The Truck and Bus Regulation (13 CCR 2025) requires diesel trucks and buses to be upgraded to reduce emissions; newer heavier trucks and buses must meet PM filter requirements; lighter and older

[27] 17 CCR 93115: Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engines. Available at: https://govt.westlaw.com/calregs/Document/IF3B6F5B35A2011EC8227000D3A7C4BC3?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)&bhcp=1. Accessed: November 2023.

[28] 13 CCR 2449: General Requirements for In-Use Off-Road Diesel-Fueled Fleets. Available at:https://ww2.arb.ca.gov/sites/default/files/classic/msprog/ordiesel/documents/finalregorder-dec2011.pdf. Accessed: November 2023.

heavier trucks must be replaced; and, by January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent to reduce PM and NOx emissions.

The regulation applies to nearly all privately- and federally-owned diesel-fueled trucks and buses, and to privately- and publicly-owned school buses with a gross vehicle weight rating greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks.

2.3.11 California Environmental Justice Programs

Several State environmental justice tools are available to assist agencies in evaluating potential impacts to communities facing EJ-related concerns. Three of these tools are described below.

2.3.11.1 California Air Resources Board Community Air Protection Program

This program was established in response to AB 617.[29] The program aims to reduce exposure to air pollutants in areas that are burdened disproportionately by poor air quality. The program involves a community-focused approach, engaging residents in the identification of air quality priorities, and the development and implementation of air monitoring and emissions reduction plans. There are currently 19 AB 617 communities in the State that were identified through a collaborative process involving community nominations, technical assessments, and public comments.[30]

2.3.11.2 California Communities Environmental Screening Tool (CalEnviroScreen)

The California-specific California Communities Environmental Screening Tool (CalEnviroScreen) was developed by the CalEPA Office of Environmental Health Hazard Assessment (OEHHA) to map and characterize disproportionate and vulnerable populations with respect to pollution burdens and community characteristics.[31] CalEnviroScreen 4.0, which is the most recent version of the tool, uses environmental, health, and socioeconomic data to produce "scores" and associated index percentiles for most census tracts in the state. The CalEnviroScreen score is calculated by multiplying the following:

- Pollution Burden Characteristics: the average of Exposures and Environmental Effects. where the Environmental Effects component is weighted one-half of Exposures. This is because Environmental Effects are predicted to make a smaller contribution to Pollution Burden than Exposures.
- Population Characteristics: the average of Sensitive Population and Socioeconomic Factors.

The CalEnviroScreen score encompasses several metrics identified as exposures, environmental effects, sensitive population, and socioeconomic factors related to air pollution and transportation, including $PM_{2.5}$, Ozone, diesel PM, Traffic Proximity, and Asthma to produce a single score based on a total of 21 statewide indicators.[32] The scores for each indicator are placed in order from highest to

[29] California Air Resources Board, 2023. Community Air Protection Program. Available at: https://ww2.arb.ca.gov/capp. Accessed on: December 29, 2023.

[30] California Air Resources Board, 2023. Community Air Protection Program Communities. Available at: https://ww2.arb.ca.gov/capp-communities. Last modified on: May 13, 2022. Accessed on: July 14, 2023.

[31] California Office of Environmental Health Hazard Assessment (OEHHA), 2023. CalEnviroScreen 4.0. Available at: https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/. Accessed on: July 14, 2023.

[32] OEHHA. 2021. CalEnviroScreen 4.0. October. Available at: https://oehha.ca.gov/media/downloads/calenviroscreen/report/calenviroscreen40reportf2021.pdf/ Accessed on: December 28, 2023.

lowest in order to calculate a percentile for every census tract with a score. To identify a community as a Disadvantaged Community, CalEnviroScreen uses guidance from California Senate Bill (SB) 535.[33] The methodology used to implement California SB 535 has generated information that identifies the following areas: census tracts with CalEnviroScreen scores above the 75th percentile in CalEnviroScreen Version 3.0 or 4.0, census tracts with "high amounts of pollution and low populations", and federally recognized tribal areas. The identification method used by SB 535 is the same methodology used to identify disadvantaged communities in AB 1550, discussed below.[34]

2.3.11.3 SB 535 Disadvantaged Communities

In 2012, SB 535 established initial requirements for minimum funding levels to Disadvantaged Communities. In 2016, AB 1550 directed California EPA to identify Disadvantaged Communities and Low-Income Communities and established the minimum funding levels for these communities. [35] Low-Income Communities are census tracts with median household income at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low-income by Housing and Community Development's (HCD's) State Income Limits. [36]

2.3.12 Local Regulations and Guidance

Air pollution often does not conform to city and/or county jurisdictional boundaries, and the State has been divided into air basins based on geographical and meteorological conditions. Air pollution within each air basin is regulated by the regional air pollution control districts/air quality management districts, in a manner that is consistent with and in furtherance of standards adopted by the USEPA and CARB. The Project site is located within the San Francisco Bay Area Air Basin (SFBAAB) and the jurisdictional boundaries of the Bay Area Air Quality Management District (BAAQMD).

2.3.12.1 Bay Area Air Quality Management District

District Plans

While CARB is responsible for the regulation of mobile emission sources within the state, local Air Quality Management Districts (AQMDs) and Air Pollution Control Districts (APCDs) are responsible for enforcing standards and regulating stationary sources. The Project site is located within the SFBAAB and is subject to the guidelines and regulations of the BAAQMD.

The BAAQMD is responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SFBAAB. The BAAQMD's air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control methods have worked, and to show how air pollution will be reduced. The plans also use computer modeling to estimate future levels of pollution and to demonstrate that the Bay Area will meet air quality goals. The most recent plan developments are summarized below.

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[33] OEHHA. 2022. SB 535 Disadvantaged Communities. May. Available at: https://oehha.ca.gov/calenviroscreen/sb535. Accessed on: December 28, 2023.

[34] Coalition for Clean Air. 2023. AB 1550: The Climate Investments for California Communities Act. Available at: https://www.ccair.org/wp-content/uploads/2015/12/ab_1550_visual_fact_sheet_by_the_sb_535_coalition.pdf. Accessed on: December 28, 2023.

[35] California Air Resources Board. 2023. California Climate Investments Priority Populations 2023. Available at: https://gis.carb.arb.ca.gov/portal/apps/experiencebuilder/experience/?id=6b4b15f8c6514733972cabdda3108348. Accessed on: July 14, 2023.

[36] California Air Resources Board. 2021. Identification of Low-Income Communities under AB 1550 Methodology and Documentation for Maps. Available at: https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/kml/ab1550_maps_documentation.pdf. Revised: May 2021. Accessed on: July 14, 2023.

2021 Certification of Compliance with the 2015 NAAQS Ozone Nonattainment New Source Review Standard

On September 1, 2021, the Air District's Board of Directors held a public meeting to consider the adoption of a certification that the Air District's nonattainment new source review permitting program meets the federal Clean Air Act requirements for the 2015 Ozone National Ambient Air Quality Standards.[37] On May 9, 2023, the USEPA approved the BAAQMD's portion of the California State Implementation Plan.[38] Compliance with the 2015 ozone standard would change the BAAQMD federal attainment status designation for Ozone from noncompliance to compliance.

2017 Clean Air Plan: Spare the Air, Cool the Climate

In April 2017, the Air District's Board of Directors approved the Clean Air Plan.39 This plan aims to lead the region to a post-carbon economy, to continue progress toward attaining all State and federal air quality standards, and to eliminate health risk disparities from exposure to air pollution among Bay Area communities.

District Rules and Regulations

The BAAQMD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SFBAAB. Below is a list of key BAAQMD rules relevant to the Project:

Regulation I: General Provisions and Definitions

Regulation I (Rules 1-2) covers emission standard requirements within the BAAQMD. BAAQMD regulations require any person that is subject to more than one emission standard for the same air contaminant to comply with the most stringent standard.

Regulation II: Permits

Regulation II contains a series of rules (Rules 1-10) covering permitting requirements within the BAAQMD. BAAQMD regulations require any person constructing, altering, replacing, or operating any source which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate.

Regulation III: Fees

This regulation requires the applicant to submit an environmental documentation fee in addition to the fees required for new and modified sources (Rule 3-302) and the applicable fee schedules (Rule 3-600). The purpose of this fee is to recover the BAAQMD's cost for reviewing these plans and conducting compliance inspections.

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[37] BAAQMD. 2021. BAAQMD Air Quality Plans. July 2021. https://www.baaqmd.gov/plans-and-climate/air-quality-plans. Accessed: November 2023.

[38] USEPA. 2023. Air Plan Approval: Bay Area Air Quality Management District; Nonattainment New Source Review; 2015 Ozone Standard. May 9. Available at: https://www.federalregister.gov/documents/2023/05/09/2023-09868/air-plan-approval-bay-area-air-quality-management-district-nonattainment-new-source-review-2015. Accessed: December 28, 2023.

[39] BAAQMD. 2017. 2017 Clean Air Plan: Spare the Air, Cool the Climate. April 2017. Available at: https://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans. Accessed: November 2023.

Regulation VI: Particulate Matter

Regulation VI contains a series of rules (Rules 1-6) to reduce emissions of particulate matter from commercial and industrial sources. This regulation limits the quantity of particulate matter in the atmosphere by controlling emission rates, emission concentrations, visible emissions, and opacity.

Rule 6: Visible Particles

This rule applies to any source operation that emits or may emit air contaminants. The purpose of this rule is to prohibit the emissions of visible air contaminants to the atmosphere. In the event that the Project or construction of the Project creates a public nuisance, it could be in violation and be subject to BAAQMD enforcement action.

Regulation VIII: Organic Compounds

Regulation VIII contains a series of rules (Rules 1 through 53) that limits the release of organic pollutants into the atmosphere.

Rule 3: Architectural Coatings

This rule limits VOC content in architectural coatings supplied, sold, applied, or manufactured for use within the BAAQMD. This rule also contains requirements for architectural coatings storage, clean up and labeling.

Rule 15: Emulsified and Liquid Asphalts

The purpose of this rule is to limit the emissions of volatile organic compounds caused by using emulsified and liquid asphalt in paving materials and paving and maintenance operations.

Regulation IX: Inorganic Gaseous Pollutants

Regulation IX contains a series of rules (Rules 1 through 14) that limits the release of inorganic gaseous pollutants into the atmosphere.

Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

This rule limits the emissions of nitrogen oxides and carbon monoxide from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower.

2.3.12.2 City of Suisun City 2035 General Plan

The City of Suisun City General Plan Environmental Impact Report (EIR) summarizes and plans for potential environmental impacts in its jurisdiction. The General Plan EIR also provides possible mitigation strategies, and the regulatory structures that exist in concert with the General Plan. The plan identifies conversion of important farmland to non-agricultural use, increased demand for water, local mobile source carbon monoxide emissions, loss and degradation of habitat, and increased energy demand as key issues that will shape the city’s growth. In addition, the General Plan notes strategies that can be employed to minimize these impacts, such as preserving and enhancing Suisun City’s Historic Downtown, protecting open spaces and farmland, complying with existing air, water, and environmental regulations, and undertaking strategic land-use change.

2.4 Environmental Setting

2.4.1 Local Air Quality Monitoring Data

The Project is located within the SFBAAB. The SFBAAB consists of nine counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Solano (southwestern), and Sonoma (southern). Cumulatively, these counties make up about 4% of California's geographic area.

The BAAQMD has 34 monitoring stations to measure air quality. The location of these monitoring stations can be viewed on the BAAQMD air monitoring webpage.[40]

The monitoring stations closest to the Project site are Fairfield – Chadbourne Road; Vallejo – Tuolumne Street; and Vacaville – Ulatis Drive. The closest monitoring station to the site is the Fairfield station at 1010 Chadbourne Road. The Fairfield monitoring station monitors ozone (O_3)Because this site does not measure carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM) of aerodynamic diameter less than 10 microns (PM_{10}), and PM of aerodynamic diameter less than 2.5 microns ($PM_{2.5}$), data for CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ emissions are from the second and third nearest monitoring stations in Vallejo, California at 304 Toulumne Street and Vacaville, California at 2012 Ulatis Drive. The most recent five years of published data at these monitoring stations are provided in **Table 2-3**. The frequency with which the ozone and PM standards have been exceeded at the nearest monitoring sites is also displayed in **Table 2-3**.

[40] BAAQMD. Air Monitoring Network. Available at: https://www.baaqmd.gov/about-air-quality/air-quality-measurement/ambient-air-monitoring-network. Accessed: November 2023.

3. SIGNIFICANCE THRESHOLDS

3.1 California Environmental Quality Act Guidelines

The analysis provided in this report evaluates the significance of the Project's criteria air pollutant emissions by reference to the following questions from Section III, Air Quality, of Appendix G of the California Environmental Quality Act (CEQA) Guidelines[41]:

Threshold 1. Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Threshold 2. Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard?

Threshold 3. Would the Project expose sensitive receptors to substantial pollutant concentrations?

Threshold 4. Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

An evaluation of the Project based on the significance thresholds discussed below is provided in subsequent sections.

3.2 Bay Area Air Quality Management District Thresholds

The analysis provided in this report evaluates the significance of the Project's criteria air pollutant emissions relative to the Bay Area Air Quality Management District thresholds. The BAAQMD has established significance thresholds[42] to assess the impacts of project-related construction and operational emissions on ambient air quality. The purpose of such significance thresholds is to prevent a singular project from contributing to cumulatively adverse air quality impacts from exceedances of the NAAQS and CAAQS. **Table 3-1** shows the mass daily thresholds for construction and operation as adopted by the BAAQMD for criteria air pollutant emissions and TACs. The analysis summarized in this report estimates project-related construction and operational mass emissions and compares the emissions to these mass daily significance thresholds. To evaluate the potential significance of the Project's emissions, this report evaluates whether the Project's estimated emissions would exceed the BAAQMD significance thresholds.

The BAAQMD has established significance thresholds to assess health risk impacts of TACs from project-related emissions sources on nearby sensitive receptors including residents and other human populations. These significance thresholds include a maximum incremental cancer risk of 10 in a million, incremental chronic and acute hazards indices of 1.0, and ambient $PM_{2.5}$ increase of 0.3 micrograms per cubic meter annual average.[43] The analysis summarized in this report evaluates the human health risk impacts from construction activities and from operational emissions to the significance thresholds BAAQMD has established. This report also evaluates the cumulative health risk and $PM_{2.5}$ impacts from the Project using BAAQMD's CEQA methodology.

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[41] Association of Environmental Professionals. 2023. California Environmental Quality Act Statute & Guidelines. Available at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf. Accessed: November 2023.

[42] BAAQMD. 2023. Bay Area AQMD California Environmental Quality Act Air Quality Guidelines. April 2023. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed: November 2023.

[43] Ibid.

3.3 Project Approach to Significance

This report quantifies the Project's CAP emissions during construction and operations and compares those results to the applicable BAAQMD thresholds. The HRA in this report summarizes the estimated health risk impacts of the Project's construction and operations on nearby receptors. The report also discusses other Project's impacts with respect to thresholds of significance derived from questions in Appendix G to the CEQA Guidelines. These thresholds of significance include thresholds relating to odors and consistency with the applicable air quality plans.

4. PROJECT AIR QUALITY EMISSIONS INVENTORY

Ramboll developed CAP emission inventories for the construction and operation of the proposed Project. Sources of Project-related construction emissions include off-road equipment, fugitive dust, off-gassing from paving, architectural coatings, and on-road mobile sources. The Project operational phase would generate emissions from area sources (such as architectural coatings, consumer products, and landscaping), energy sources (natural gas and electricity), mobile sources (passenger vehicles and fuel delivery trucks), and TRU sources.

4.1 Resources

4.1.1 California Emission Estimator Model

Ramboll primarily used the California Emissions Estimator Model (CalEEMod) version 2022.1[44] methodology to assist in quantifying the criteria air pollutant emissions in the inventories presented in this report for the proposed project. CalEEMod is a statewide program designed to calculate both CAP and GHG emissions from development projects in California. CalEEMod is based on CARB approved Off-Road and On-Road Mobile Source Emission Factor models (OFFROAD[45] and EMission FACtors model (EMFAC)[46], respectively), and is designed to estimate construction and operational emissions for land use development projects and allows for the input of project-specific information. OFFROAD2017 is an emissions factor model used in CalEEMod to calculate emission rates from off-road mobile sources (e.g., construction equipment, agricultural equipment). EMFAC2021 is the emissions factor model used in CalEEMod to calculate emissions rates from on-road vehicles.

4.1.2 Other Resources

Ramboll directly or indirectly relied on emissions estimation guidance from government-sponsored organizations, government-commissioned studies of energy use patterns, Project-specific studies (e.g., W-Trans's Transportation Impact Analysis[47] and Fehr and Peers' Trip Length Assessment[48]), and emission estimation software as described above. In cases noted below, third-party studies were also relied upon to support analyses and assumptions made outside of the approach described above.

4.2 Construction Emissions

This section describes the estimation of emissions from construction activities at the Project site. The construction schedule and equipment mix is based on a reasonable estimate based on the information available at this time, and incorporates conservative assumptions to represent higher than anticipated emissions.

The following Project-specific assumptions were used as inputs to the CalEEMod model runs for construction:

- Project Land Uses: Land uses modeled in CalEEMod are shown in **Table 4-1**. It was conservatively assumed that all proposed buildings would be constructed and become operational at the same

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44 CAPCOA. 2022. California Emissions Estimator Model. Available at: https://www.caleemod.com/. Accessed: November 2023.

45 CARB. 2021. OFFROAD2017 - ORION. Available at: https://www.arb.ca.gov/orion/. Accessed: March 2021.

46 CARB. 2021. EMFAC. Available: https://arb.ca.gov/emfac/. Accessed: March 2021.

47 W-Trans. 2021. Updated Transportation Assumptions for the Suisun Logistics Center Project: Trip Generation, Distribution and Assignment. March 2021.

48 Fehr and Peers. 2024. Big Data Passenger Vehicle and Light Duty Truck Trip Length and Project-Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California. January 2024.

time. In addition to construction of the proposed building, construction activities were also assumed to include roadway improvements, namely, the widening of Petersen Road.

- Construction Schedule: The Project is conservatively assumed to begin construction in 2025. (This assumption is conservative because, with the passage of time, construction equipment will generate reduced levels of air pollutants. Thus, a delayed construction schedule would result in emissions levels lower than those assumed here.) Based on CalEEMod construction assumptions, the Project anticipates construction to occur for approximately 18 months on a five-day-per-week schedule. Construction schedule of Petersen Road Widening was also included in the construction schedule and is assumed to occur at the same time as the grading phase of warehouse construction. A construction schedule is shown in **Table 4-2**.
- Demolition: Since the existing project site is undeveloped, no demolition would occur.

4.2.1 Emissions from Construction Equipment

The emission calculations associated with construction equipment are from off-road equipment engine use based on the equipment list and phase length. All off-road construction equipment was assumed to be diesel-fueled, with the exception of signal boards consistent with the CalEEMod methodology. All equipment was conservatively assumed to operate at all times, when used in a specific construction phase. The calculations include the running exhaust emissions from off-road equipment. Since the equipment is assumed to be diesel, there are no starting emissions associated with the equipment, as these are *de minimis* for diesel-fueled equipment. CalEEMod calculates the exhaust emissions based on default values for horsepower and load factor from CARB's OFFROAD2017.[49] **Table 4-3** provides the off-road equipment activities, equipment details, and tier assumptions for Project construction.

4.2.2 Emissions from On-Road Construction Trips

Construction generates on-road vehicle criteria air pollutant emissions from various sources that could include personal vehicles for worker commuting, vendor truck trips, and trucks for soil and material hauling. The haul trips for material import are expected to occur during the grading phase of warehouse construction. No material import and export are anticipated for Petersen Road Widening.

Construction emissions from on-road construction trips are calculated based on the number of trips and vehicle miles traveled (VMT), shown in **Table 4-4**, along with emission factors from EMFAC2021. All worker vehicles are assumed to be fueled by gasoline, and all vendor vehicles and haul trucks are assumed to be fueled by diesel.

4.2.3 Fugitive Dust

Fugitive dust contributes to PM_{10} and $PM_{2.5}$ emissions and is generated by the various construction activities occurring at the Project site, including entrained road dust, grading, demolition, and truck loading. The BAAQMD thresholds of significance for construction-related PM_{10} and $PM_{2.5}$ CAP emissions do not include a quantified fugitive dust emission threshold. For a project to have a less-than-significant criteria air pollutant impact related to construction-related fugitive dust emissions, the project must implement the BAAQMD's basic best management practices (BMPs), including practices such as watering exposed surfaces two times a day, covering of haul trucks, and limiting vehicle speeds on unpaved road. Project construction would implement the fugitive dust BMPs recommended by the BAAQMD.

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[49] CAPCOA. 2022. California Emissions Estimator Model User's Guide, Appendix C. Available at: https://www.caleemod.com/user-guide. September 2022.

Although the BAAQMD does not have quantitative thresholds of significance for fugitive PM_{10} and $PM_{2.5}$, the choice of whether to quantify construction-related fugitive $PM_{2.5}$ in addition to exhaust to compare with the annual average $PM_{2.5}$ concentration threshold is at the lead agency's discretion. The modeled $PM_{2.5}$ emissions used in the HRA include fugitive dust sources, to be conservative. The following construction activities would generate fugitive dust emissions: on-road construction traffic, and material movements including grading equipment passes, bulldozing, and truck loading.

4.2.3.1 Fugitive Dust from On-Road Construction Traffic

Construction vehicles driving on roadways would emit $PM_{2.5}$ in the form of re-suspended road dust. $PM_{2.5}$ emission factors based on the silt loading factor recommended by the BAAQMD are shown in **Table 4-5**. Road dust emissions in each year of the Project construction are calculated based on construction VMT in **Table 4-6**.

4.2.3.2 Fugitive Dust from On-Site Material Movements

Fugitive dust emissions from on-site material movement were estimated following CalEEMod methodology and assumptions. The emission factor for grading is calculated on a per-VMT basis, where VMT is estimated based on the dimension of the Project site and the blade width of the grading equipment. The bulldozing emission factors are based on CalEEMod default emission factors and hours of active operations for the dozers. Material loading fugitive dust emissions are calculated on a per-ton basis.

Table 4-7, **Table 4-8**, and **Table 4-9** summarize the on-site fugitive $PM_{2.5}$ emissions from grading, bulldozing, and truck loading, respectively. For all on-site fugitive dust sources, a 61% reduction in fugitive $PM_{2.5}$ emissions is incorporated to reflect the effect of the BAAQMD's construction fugitive dust BMPs, as detailed in **Section 10.2**. Consistent with CalEEMod, this emissions reduction is incorporated by indicated that watering at least two times daily in alignment with BAAQMD's basic Construction mitigation measure recommendation.

4.2.4 Architectural Coating and Paving

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings. The Project only expects to paint the exteriors of the proposed buildings. Reactive organic gases (ROG) emissions from painting of stripes, handicap symbols and other signages were also calculated using CalEEMod default assumptions. Construction ROG emissions from architectural coating are summarized in **Table 4-10**.

VOC off-gassing emissions would also result from asphalt surfaces. CalEEMod default methodology was used to estimate the VOC off-gassing emissions associated with asphalt paving. It was conservatively assumed that the impervious surfaces on the Project Site and the additional lane added by Petersen Road Widening would also be paved with asphalt. The emissions associated with paving are presented in **Table 4-11**.

4.2.5 Total Construction Emissions

The unmitigated average daily criteria air pollutant emissions associated with Project construction are shown in **Table 4-12**. Criteria pollutant emissions from construction of the Project are below the BAAQMD's thresholds of significance, with the exception of NOx emissions in the first year of construction and ROG emissions in the second yar of construction.

To reduce NOx emissions that are above the significance threshold, **Mitigation Measure AIR-1** requires that all off-road diesel engines used during Project construction that are greater than 50 horsepower to be equipped with EPA-approved Tier 4 engines. To reduce ROG emissions that are above the significance threshold, **Mitigation Measure AIR-2** requires that the Project construction to use low-VOC paint (with VOC content not exceeding 50 grams of ROG per liter of paint) for the architectural coating operations on the buildings. These mitigation measures are presented in detail in **Section 10.2**):

The mitigated average daily criteria air pollutant emissions associated with Project construction are shown in **Table 4-13.** The mitigated average daily criteria air pollutant emissions from Project construction are below the BAAQMD mass daily significance thresholds with the implementation of the **Mitigation Measure AIR-1** and **Mitigation Measure AIR-2**. In addition, the Project will implement all the basic BMPs recommended by the BAAQMD. The BAAQMD's fugitive dust BMPs, such as watering exposed surfaces two times a day and covering haul trucks, is implemented through **Mitigation Measure AIR-3**, described in detail in **Section 10.2**.

4.3 Operational Emissions

This section describes the estimation of operational CAP emissions. Operational CAP emissions include area sources such as consumer product use and landscaping, on-site stationary sources, on-road vehicles, and on-site mobile equipment. Because the project applicant has voluntarily chosen to forego the use of natural gas in the Project, the Project would not emit any CAP from energy sources such as natural gas combustion. The analysis has evaluated two scenarios: a 100% dry storage warehouse and a 100% cold storage warehouse. Unless specified otherwise, emission sources described below are applicable to both scenarios. The Project's operation would begin as early as 2026. Details of emission estimation for the operational CAP emission sources are provided below.

4.3.1 Area Sources

Area sources are those emissions that are generally too small to be uniquely identified as individual sources and are thus generally aggregated as a group. Area sources that would generate CAP emissions from Project operations include landscaping equipment, consumer products, and architectural coating. Criteria air pollutant emissions from the area sources were estimated in CalEEMod® with the county-specific consumer product emission factor, presented in **Table 4-14**. Similar to construction architectural coating, it was assumed that only building exteriors would be painted throughout Project operations. CalEEMod outputs for operational sources of the Project are presented in **Appendix A**.

4.3.2 On-Site Stationary Sources

The Project would operate one emergency diesel generator and one fire pump for each proposed building. A total of six diesel generators and six diesel fire pumps were conservatively assumed for the Project's operations.

BAAQMD's 2022 CEQA Guidelines recommend using the maximum potential to emit when quantifying emissions and health risk impacts from new stationary sources in project analysis. Activities that would contribute to maximum potential to emit for emergencies generators include both emergency operations and non-emergency testing and maintenance. 100 hours per emergency generator is recommended to represent a reasonable worst-case assumption of emergency operations for a given year. In addition to the emergency operations, each emergency generator is assumed to operate up to 50 hours per year for routine testing and maintenance purposes, consistent with the maximum allowed testing time from the ARB's Airborne Toxic Control Measure for Stationary Compression Ignition Engines.

CAP emissions from the proposed emergency generators and the fire pumps are shown in **Table 4-15**.

4.3.3 On-Road Vehicles

The criteria air pollutant emissions associated with on-road mobile sources are generated from worker (employee) vehicles and delivery trucks travelling to and from the Project site. The emissions associated with on-road mobile sources include running, idling, and starting exhaust emissions, evaporative emissions, tire wear, brake wear, and entrained road dust. In addition, under the cold storage scenario, it was conservatively assumed that 100% of the warehouse delivery trucks will be equipped with transportation refrigeration units (TRUs), which result in additional emissions.

Ramboll calculated mobile source emissions using the trip rates and trip length information based on analyses conducted by W-Trans and Fehr and Peers, summarized in **Table 4-16**. Fleet mix assumptions are provided in **Table 4-17** for truck trips and worker trips. EMFAC2021 emission factors were used for Solano County, which accounted for the following adopted regulatory programs:

- AB 1493 ("the Pavley Standard") required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model year 2009 and thereafter. CalEEMod and EMFAC2021 include emission reductions for non-commercial passenger vehicles and light-duty trucks of model year 2017 – 2025.
- The ACC I program, introduced in 2012, combines the control of smog, soot causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2015 through 2025. CalEEMod and EMFAC2021 include reductions associated with this regulation that are represented in this analysis. While ACC I focuses on the reduction of GHG emissions, it is anticipated that this regulation would also help reduce criteria air pollutants.
- The USEPA/NHTSA advanced fuel economy and GHG standards (Phase 1) were adopted in 2011 for medium- and heavy-duty trucks for model years 2014-2018.[50] This Heavy-Duty National Program is intended to reduce fuel use and GHG emissions from medium- and heavy-duty vehicles, semi-trucks, pickup trucks and vans, and all types and sizes of work trucks and buses in between. CalEEMod and EMFAC2021 include reductions associated with this regulation that are represented in this analysis.
- The USEPA/NHTSA advanced fuel economy and GHG standards (Phase 2) were adopted in 2016 for medium- and heavy-duty trucks for model years 2018 and beyond.[51] The Phase 2 program includes technology-advancing standards that substantially reduce GHG and criteria pollutant emissions and fuel consumption resulting in an ambitious, yet achievable, program that will allow manufacturers to meet the applicable standards over time, at reasonable cost, through a mix of different technologies. The Phase 2 program's standards will be phased in, beginning with model year 2021 and culminating with model year 2027. [52]

Vehicles driving on roadways would also emit PM_{10} and $PM_{2.5}$ in the form of re-suspended road dust. The weighted average silt loading factor specific to Solano County was calculated based on travel fraction by roadway category and silt loading parameters obtained from ARB's Entrained Road Travel Emission Inventory Source Methodology document, as shown in

[50] USEPA, Office of Transportation and Air Quality. September 2011. Available at: https://www.govinfo.gov/content/pkg/FR-2011-09-15/pdf/2011-20740.pdf. Accessed: September 2022.

[51] USEPA, Office of Transportation and Air Quality. October 2016. Available at: https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed: September 2022.

[52] The emission reductions attributable to Phase 2 of the regulations for medium- and heavy-duty trucks were not included in the Project's emissions inventory due to the difficulty in quantifying the reductions. Excluding these reductions results in a more conservative (i.e., higher) estimate of emissions for the Project.

Table 4-18. The emission factors for operational vehicles are summarized in **Table 4-19**. In accordance with the BAAQMD's CEQA Guidelines, Road dust $PM_{2.5}$ and PM_{10} emissions were included in operational PM emissions for comparison against BAAQMD's total operational mass emissions significance thresholds.

4.3.3.1 Transport Refrigeration Unit

The cold storage scenario will include trucks with TRUs and the analysis conservatively assumes that 100% of the operational truck trips would be equipped with TRUs for this scenario. TRUs are refrigeration systems powered by diesel internal combustion engines designed to refrigerate or heat perishable products that are transported in various containers, including truck vans, semi-truck trailers, shipping containers, and railcars.

The TRU operational assumptions are presented in **Table 4-20**. This analysis assumes that TRUs would be operating 100% of the time during truck travels. Emission factors for TRUs were obtained from OFFROAD2021 and also summarized in **Table 4-20**.

4.3.4 On-Site Mobile Equipment

Cargo handling equipment is expected to operate at the Project site. For purposes of this analysis, each proposed building is assumed to operate one diesel yard truck and one diesel forklift. Yard trucks, also known as yard goats or yard hostlers, are assumed to redistribute goods between warehouses; This analysis assumes that every delivery truck trip would require a yard truck trip for on-site hauling, as a conservative assumption as it is likely that the operations will not include such equipment. The yard trucks are assumed to be medium heavy-duty diesel trucks, subject to CARB's Drayage Truck Regulation.[53] Emission factors for yard trucks were obtained from EMFAC2021, similar to other on-road vehicles described in **Section 4.3.3** and presented in **Table 4-21**. Emission factors for diesel forklifts were obtained from OFFROAD2021. Operating and emission assumptions for diesel forklifts are also summarized in **Table 4-21**.

4.3.5 Total Operational Emissions

Daily average and annual criteria air pollutant emissions from the Project operations are summarized in **Table 4-22** for the dry storage scenario and in **Table 4-23** for the cold storage scenario. To reduce ROG and NOx emissions that are above the significance thresholds, the following mitigation measures are applied (additional details on the mitigation measures are included in **Section 10.2**):

- **Mitigation Measure AIR-4**: The Project is required to use electric landscaping equipment throughout Project operations. No CAP emissions are expected from landscaping activities with the implementation of this mitigation measure.
- **Mitigation Measure AIR-5**: All trucks accessing the Project site and have a gross vehicle weight rating (GVWR) above 33,000 pounds are required to be equipped with 2014 or newer engine models. Emission factors for operational truck trips equipped with 2014 or newer engines are summarized in **Table 4-24**.
- **Mitigation Measure AIR-6.** All forklifts operating on the Project site are required to be electric. No CAP emissions are expected from on-site forklifts operation with the implementation of this mitigation measure.

[53] CARB. 2012. Frequently Asked Questions, Regulation for In-Use Off-Road Diesel-Fueled Fleets (Off-Road Regulation). Available at: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/ordiesel/faq/faqyardtrucks.pdf. March 2012.

- **Mitigation Measure AIR-7**. All loading docks of the Project are required to be equipped with external power sources and connectors. All trucks with TRUs are required to be plugged in and shut off the TRU engines while stationary at the loading docks. Mitigated TRU operation parameters are summarized in **Table 4-25**.

The mitigated average daily criteria air pollutant emissions associated with Project operations are summarized in **Table 4-26** for the dry storage scenario and in **Table 4-27** for the cold storage scenario. As shown in **Table 4-26 and Table 4-27**, the mitigated average daily criteria air pollutant emissions from Project operations are below the BAAQMD mass daily significance thresholds for ROG, PM_{10} and $PM_{2.5}$, and above the BAAQMD mass daily significance thresholds for NOx with the implementation of the mitigation measures.

5. HEALTH RISK ASSESSMENT

5.1 Estimated Air Concentrations

The methodologies used to evaluate emissions for the Project and cumulative HRA impacts are based on the most recent BAAQMD CEQA Guidelines[54] and the most recent Air Toxics Hot Spots Program Risk Assessment Guidelines from Office of Environmental Health Hazard Assessment (OEHHA).[55] To evaluate the health risks and concentration of air toxics upon the surrounding area, BAAQMD recommends estimating concentrations using air pollution dispersion modeling.

5.2 Chemical Selection and Sources of Emissions

The Project would emit TACs from the combustion of gasoline and diesel fuels. The cancer risk and chronic non-cancer analyses in the HRA for the Project were based on DPM concentrations from diesel combustion and total organic gases (TOG) concentrations from gasoline combustion.

Diesel exhaust, a complex mixture that includes hundreds of individual constituents, is identified by the State of California as a known carcinogen.[56,57] Under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. There is currently no acute nor chronic non-cancer toxicity value available for DPM.

Health effects from exhaust and evaporation from gasoline combustion were based on specific TAC emissions. Emissions of TOG from gasoline-fueled vehicles were speciated using organic chemical profiles from BAAQMD as shown in **Table 5-1**.[58] The Cal/EPA-approved toxicity values for each TAC were used to evaluate health impacts from construction DPM and operational gasoline-fueled sources. BAAQMD does not estimate acute HI from roadways in its Mobile Source Screening Map, and acute impacts from Project-generated traffic emissions are expected to be minimal. Therefore, acute HI impacts from the Project-generated gasoline vehicle trips were not estimated.

5.2.1 Construction Phase

The cancer risk and chronic non-cancer hazards in the HRA for the Project construction were based on TAC emissions from off-road diesel construction equipment, on-road vendor vehicles, on-road worker vehicles and on-road diesel hauling trucks. Accordingly, the chemicals evaluated in the HRA for the construction phase were DPM emissions in diesel exhaust, TAC emissions from gasoline exhaust, and $PM_{2.5}$ emissions from exhaust, tire wear and brake wear, and fugitive dust. DPM emissions are assumed to be equal to exhaust PM_{10} from on- and off-road diesel construction equipment.

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[54] BAAQMD. 2023. Bay Area AQMD California Environmental Quality Act Air Quality Guidelines. April 2023. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed: November 2023.

[55] Cal/EPA, OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. February 2015. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed: September 2022.

[56] Cal/EPA, OEHHA. 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/toxics/dieseltac/de-fnds.htm. Accessed: September 2022.

[57] Cal/EPA, OEHHA. 2022. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. September 8. Available at: https://www.arb.ca.gov/toxics/healthval/contable.pdf. Accessed: December 2023.

[58] Speciation profile is from BAAQMD's Recommended Methods for Screening and Modeling Local Risks and Hazards (BAAQMD 2021a), Table 14, Toxic Speciation of TOG due to Tailpipe Emissions, and Table 15, Toxic Speciation of TOG due to Evaporative Losses. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling. Accessed: December 2023.

5.2.2 Operational Phase

The cold storage scenario was analyzed to represent the worst-case scenario for health risk impacts, because this scenario would include more TAC emission sources than the dry storage scenario. The cancer risk and chronic non-cancer hazard analysis for the Project operation are based on TAC emissions from on-road diesel and gasoline vehicle trips, on-site circulation from the same groups of vehicles, on-site idling of TRUs, and on-site stationary and mobile equipment. The chemicals evaluated in the HRA include $PM_{2.5}$ emissions (assumed to be engine exhaust from vehicles, and brake wear, tire wear, and entrained dust from vehicles), speciated evaporative and exhaust TOGs from on-road emissions from gasoline vehicles, and DPM emissions from diesel-powered delivery trucks, TRUs, emergency generators, fire pumps, forklifts and yard trucks.

5.3 Air Dispersion Modeling Methodology

The analysis relied upon American Meteorological Society/Environmental Protection Agency regulatory air dispersion model (AERMOD) Version 23132 to estimate ambient air concentrations and evaluate the health risks of TACs at off-site receptors. [59,60] For each receptor location, the model generates air concentrations (or air dispersion factors if unit emissions [i.e., 1 g/s] were modeled) that result from emissions from multiple sources.

Air dispersion models such as AERMOD require a variety of inputs such as source parameters, meteorological data, topography information, and receptor parameters. When site-specific information was unknown, default parameter sets that are designed to produce conservative (i.e., overestimates of) air concentrations were used.

5.3.1 AERMOD

AERMOD has been approved for use by USEPA, CARB, and BAAQMD, and incorporates multiple variables in its algorithms including:

- Meteorological data representative of surface and upper air conditions;
- Local terrain data to account for elevation changes; and
- Physical specification of emission sources including information such as:
  - Location;
  - Release height; and
  - Source and building dimensions.

Dispersion model averaging times are specified based on the averaging times of ambient air quality standards and the air quality significance thresholds established by the appropriate regulatory agencies. For the Project construction HRA, the PERIOD averaging time (average concentration for the 5-year meteorological data set) was used to calculate chronic (long-term) health effects.

For the Project operational HRA, the PERIOD averaging time (average concentration for the 5-year meteorological data set) was used to calculate chronic (long-term) health effects.

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[59] USEPA. 2022. User's Guide for the AMS/EPA Regulatory Model (AERMOD). June 2022. Available at: https://gaftp.epa.gov/Air/aqmg/SCRAM/models/preferred/aermod/aermod_userguide.pdf. Accessed: September 2022.

[60] USEPA. 2017. Guideline on Air Quality Models (Revised). 40 Code of Federal Regulations, Part 51, Appendix W. Office of Air Quality Planning and Standards. January 17. Available at: https://www.epa.gov/scram/clean-air-act-permit-modeling-guidance. Accessed: September 2022.

Turbulent eddies can form on the downwind side of buildings and may cause a plume from a stack or point source located near the building to be drawn towards the ground to a greater degree than if the building were not present. This is referred to as the "building downwash" effect. The effect can increase the resulting ground-level pollutant concentrations downwind of a building. AERMOD takes this effect into account by incorporating algorithms that evaluate the downwash effect on the dispersion for point sources. The Project building dimensions and building height were obtained from the plans of the proposed Project. The direction-specific building downwash dimensions were determined by the latest version (04274) of the Building Profile Input Program, PRIME (BPIP PRIME). Building downwash was only included in the modeling of the Project's operational point sources.

The following other options in AERMOD were selected for use in this analysis. The regulatory default option was selected based on the BAAQMD modeling recommendations,[61] which established the settings for variables such as rural modeling dispersion option, receptor heights, off-site receptor grid spacing, and emissions source parameters. The air dispersion model was run using a unit emission factor approach. The model output based on a unit emission factor approach was incorporated into a post-processing step with the calculated emission rates to estimate the air concentrations at each receptor.

5.3.2 Source Characterization

For the Project construction HRA, DPM emissions from haul trucks and vendor vehicles and TAC emissions from worker vehicles traveling on nearby roadway links were modeled using line-volume sources. Area sources covering the Project site and the segment of Petersen Road to undergo roadway improvements were used to represent DPM exhaust emissions from the off-road equipment for the construction modeling. Additionally, area sources covering the planned construction areas were used to represent fugitive dust emissions as $PM_{2.5}$ emissions from construction activities. Source parameters for off-road construction equipment and fugitive dust were based on the BAAQMD's CEQA Guidelines, Appendix E, Recommended Methods for Screening and Modeling Local Risks and Hazards, if available. Modeled construction emission source locations are shown in **Figure 1**.

For the Project operational HRA, DPM emissions from delivery trucks and TRUs as well as TAC emissions from passenger vehicles traveling on nearby roadway links and on-site circulation routes were modeled as line-volume sources. Line-volume sources were also selected to model the areas surrounding the individual buildings where on-site mobile equipment (forklifts and yard trucks) are expected to operate. Point sources were selected to represent TRU idling emissions at the loading docks as well as the stationary sources (emergency generators and fire pumps). Modeled operational emission source locations are shown in **Figure 2**.

Source parameters for the Project's construction and operational sources are summarized in **Table 5-2**.

5.3.3 Meteorology

Ramboll used five years (2013-2017) of meteorological data from the Travis Air Force Baseline surface air measurements with upper air data collected at the Oakland Airport (OAK) for the same period.[62]

[61] BAAQMD. 2023. Bay Area AQMD California Environmental Quality Act Air Quality Guidelines. April 2023. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed: November 2023.

[62] BAAQMD. 2023. Bay Area AQMD California Environmental Quality Act Air Quality Guidelines. April 2023. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed: November 2023.

The Travis Air Force Base surface air measurements is located approximate 3.5 miles northeast of the Project and has similar terrain and surrounding land use as the Project site.[63] A wind rose plot summarizing the frequency of wind speed and direction is shown in **Figure 3**. Terrain data was sourced from the United States Geographical Survey (USGS) National Elevation Dataset (NED).

5.3.4 Land Use

The land uses surrounding the Project alignment are primarily a mix of developed residential and commercial areas. AERMOD offers the option of using either rural or urban dispersion characteristics. Selection of rural or urban dispersion characteristics depends on the predominant land use within a three-kilometer radius of the site. BAAQMD recommends that if 50% or more of the land use types within the three-kilometer radius is classified as heavy industrial, light/moderate industrial, and/or commercial, then urban dispersion characteristics must be chosen for all Project emissions sources. Otherwise, the rural dispersion characteristics must be chosen.[64] More than 50% of the land use within the three-kilometer radius is classified as the rural land use types, therefore, rural dispersion characteristics were conservatively selected for the Project.

Data specifying terrain elevations of sources and receptors are imported into the model. Elevations are based on National Elevation Datasets (NEDs) and consist of an array of regularly spaced points on a horizontal plane for which an elevation is specified. NED 1-arc second data used in this analysis were obtained from the USGS.[65]

5.3.5 Emission Rates

Emissions were modeled using the χ/Q ("chi over q") method, such that each source group has a unit emission rate (i.e., 1 gram per second [g/s]), and the model estimates dispersion factors (with units of $[\mu g/m^3]/[g/s]$). Actual emissions were multiplied by the dispersion factors to obtain concentrations.

For the Project construction analysis, emissions from all modeled construction sources - including off-road construction equipment, off-site worker vehicle travel, off-site vendor vehicle travel, off-site hauling vehicle travel, and generated fugitive dust – were assumed to occur between the hours of 7:00 AM and 8:00 PM and 5 days per week throughout the Project construction duration, in accordance with the City's noise ordinance.[66]

For the Project operational analysis, it was conservatively assumed that all operational sources would operate 24 hours a day, 7 days per week, and that emergency operations of the proposed emergency generators and fire pumps could occur any time.

5.3.6 Receptors

In order to evaluate health impacts to off-site receptors, nearby sensitive receptor populations were identified. The BAAQMD recommends considering the following as off-site receptors, as applicable: residents, workers, users of parks and playgrounds, schools, daycare facilities, hospitals, and

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[63] BAAQMD. AERMOD-ready meteorological data was obtained from the BAAQMD. Available at:https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/ceqa-modeling-data. Accessed: December 2023.

[64] BAAQMD. 2023. Bay Area AQMD California Environmental Quality Act Air Quality Guidelines. April 2023. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed: November 2023.

[65] USGS National Elevation Dataset. Available at: https://www.mrlc.gov/tools. Accessed: September 2022.

[66] Suisun noise ordinance NO. 771.

adult/elderly care facilities.[67] The receptors for the Project were identified using the City's zoning maps and publicly available resources, such as Google Maps and the Childcare Licensing Program of the California Department of Social Services. Discrete receptors were modeled on a grid with 20 m (65.6 feet) spacing within 1,000 m of the Project site and the nearby roadway segments. The locations of all receptors are illustrated on **Figure 4**. Receptor heights were assumed to be 1.5 meters above ground based on BAAQMD guidance.[68]

5.4 Exposure Assessment

The Project construction and operational HRAs were conducted in accordance with OEHHA's 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines and BAAQMD's CEQA Guidelines.[69,70] Lifetime cancer risks, chronic HI, and annual average $PM_{2.5}$ concentrations were calculated at each receptor. Specific steps taken to complete the HRA, such as exposure assessment and risk characterization are described in more detail below.

Exposure Assumptions: Emissions and exposure to sensitive populations would vary across the construction period. Therefore, multiple exposure scenarios were evaluated to capture the period of maximum impact on each sensitive population and location. The maximum impact from each of these scenarios was reported. Health impacts were evaluated in two exposure scenarios:

- Exposure Scenario 1 (S1): Off-site receptors' exposure beginning at the start of construction.
- Exposure Scenario 2 (S2): Off-site receptors' exposure to the Project's operational activities.

Exposure Assumptions: The exposure parameters used to estimate excess lifetime cancer risks for all potentially exposed populations for the construction evaluation for this analysis were obtained using risk assessment guidelines from OEHHA and BAAQMD. **Table 5-3** shows the proposed exposure parameters that were used for the HRA.

Calculation of Intake: The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh}, can be calculated as follows:

67 BAAQMD. 2023. Bay Area AQMD California Environmental Quality Act Air Quality Guidelines. April 2023. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed: November 2023.

68 BAAQMD. 2023. Bay Area AQMD California Environmental Quality Act Air Quality Guidelines. April 2023. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed: November 2023.

69 Cal/EPA, OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed: September 2022.

70 BAAQMD. 2023. California Environmental Quality Act Statute & Guidelines. Available at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf. Accessed: November 2023.

$$IF_{inh} = \frac{DBR * FAH * EF * ED * CF}{AT}$$

Where:

IF_{inh}	=	Intake Factor for Inhalation (m^3/kg-day)
DBR	=	Daily Breathing Rate (L/kg-day)
FAH	=	Frequency of time at Home (unitless)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
CF	=	Conversion Factor, 0.001 (m^3/L)
AT	=	Averaging Time (days)

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh}, by the chemical concentration in air, C_i. When coupled with the chemical concentration, this calculation is mathematically equivalent to the dose algorithm given in the current OEHHA Hot Spots guidance.[71]

5.4.1 Age Sensitivity Factors

As a conservative and health-protective measure, the estimated excess lifetime cancer risks for a resident will be adjusted using age sensitivity factors (ASFs) that account for an "anticipated special sensitivity to carcinogens" of infants and children as recommended in the OEHHA 2009 Technical Support Document and OEHHA 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines.[72,73] Cancer risk estimates were weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) is applied to ages 16 and older.

5.4.2 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values that are used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment. Toxicity values for all TACs are summarized in **Table 5-4**, which are the most up-to-date values for inhalation and oral cancer potency factors (CPFs), chronic inhalation and oral RELs, and acute RELs approved by California Environmental Protection Agency (Cal/EPA) for use in health risk assessments.

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[71] Cal/EPA, OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Appendix D: Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Engines. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015gmappendicesaf.pdf. Accessed: September 2022.

[72] Cal/EPA, OEHHA. 2009. Technical Support Document for Cancer Potency Factors: Methodologies for Derivation, Listing of Available Values, and Adjustment to Allow for Early Life Stage Exposures. May. Available online at: https://oehha.ca.gov/air/crnr/technical-support-document-cancer-potency-factors-2009. Accessed: September 2022.

[73] Cal/EPA, OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Appendix D: February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015gmappendices.pdf. Accessed: September 2022.

5.4.3 Modeling Adjustment Factor

OEHHA recommends applying an adjustment factor to the annual average concentration modeled assuming continuous emissions (i.e., 24 hours per day, seven days per week), when the actual emissions are less than 24 hours per day and exposures are concurrent with activities occurring as part of the Project. For the Project's construction activities, emissions only impact receptors during certain hours of the day when activities are occurring. However, the TAC concentrations modeled during those hours are annualized conservatively assuming 24 hour per day in the modeling outputs. Thus, a model adjustment factor (MAF) was applied to the annual average concentration to account for a non-continuous emissions schedule, on which a source's emissions would overlap with the hours during which a school or recreational receptor is present.

Resident children were assumed to be exposed to annual construction and operational emissions (averaged from actual operating hours) 24 hours per day, seven days per week, 350 days per year. This assumption is consistent with the modeled annual average air concentration for construction (24 hours per day, seven days per week). Thus, the annual average concentration for construction was not adjusted for the residential population.

The MAF for non-residential receptors (schools, recreational, worker) assumes receptors are present only during the hours of the day emissions are occurring. Therefore, a modeling adjustment factor of 4.2 was applied to the annual average concentration for construction. An MAF was not applied to exposure to operational emission sources, since this analysis conservatively assumes that the Project's operations are continuous (i.e. could occur 24 hours a day, 365 days a year).

5.5 Risk Characterization

5.5.1 Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). For carcinogenic chemicals, both inhalation and non-inhalation pathways must be considered using the CPFs. Total risk is the sum of risks attributable to each chemical considered by each pathway. The BAAQMD's recommended exposure parameters were used.

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Riskinh\ = Ci\ x\ CF\ x\ IFinh\ x\ CPFi\ x\ ASF$$

Where:

$Risk_{inh}$ = Cancer risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)

Ci = Annual average air concentration for chemical (µg/m^3)

CF = Conversion factor (mg/µg)

IFinh = Intake factor for inhalation (m^3/kg-day)

CPFi = Cancer potency factor for chemical (mg chemical/kg body weight-day)$^{-1}$

ASF = Age sensitivity factor (unitless)

5.5.1.1 Estimation of Chronic Non-Cancer Hazard Indices

The potential for exposure to result in adverse chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the non-cancer chronic reference exposure level (cREL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ). To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding a HI:

$$HQi = Ci \,/\, cREL$$

$$HI = \sum HQ$$

Where:

HI = Hazard index

HQi = Chronic hazard quotient for chemical i

Ci = Annual average concentration of chemical i (µg/m^3)

cRELi = Chronic non-cancer reference exposure level for chemical i (µg/m^3)

5.6 Health Risk Results

The estimated unmitigated health risk impacts of the construction and operation of the Project are summarized in **Table 5-5** for the maximally impacted residential, worker, and sensitive receptors. To address the health risk results that are above the significance thresholds, Mitigation Measures are incorporated to reduce the Project risk. These mitigation measures include **Mitigation Measure AIR-5**, **Mitigation Measure AIR-6**, and **Mitigation Measure AIR-7**, described in **Section 4.3.5** and **Section 10.2**. The mitigated health risk impacts of the construction and operation of the Project are summarized in **Table 5-6**, and the mitigated Project risks are less than the significance thresholds. Locations of maximally exposed individual receptors for exposure scenarios S1 and S2 are shown in **Figure 5** and **Figure 6**, respectively.

6. CO HOTSPOTS

Mobile source impacts occur on two basic scales of motion. Regionally, Project-related travel will add to regional trip generation and increase the VMT within the local airshed and the SFBAAB. Locally, Project traffic will be added to the City's roadway system. There is a potential for the formation of microscale CO "hotspots" in the area immediately around points of congested traffic. Because of continued improvement in mobile emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the basin is steadily decreasing.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. To verify that the Project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted.

6.1 Regulatory Background

The BAAQMD CEQA Guidelines provide preliminary screening methodology to determine if implementation of the proposed project would result in CO emissions that exceed BAAQMD significance thresholds for CO. According to the guidelines, the proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

1. Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

6.2 Traffic Study Findings

The Project's Transportation Impact Analysis indicates that no intersections impacted by the Project would experience traffic volume of 44,000 vehicles per hour.[74] This hourly trip estimate considers existing vehicle volumes as well as vehicle volumes generated by the Project. The Project does not impact any roadways or intersections with limited vertical or horizontal mixing. Furthermore, the Project would not conflict with the Solano County Congestion Management Program (CMP), because all studied roadway segments and intersections would operate at acceptable levels with traffic generated by the proposed project in combination with existing traffic levels. Therefore, based on the BAAQMD's screening criteria, the Project would not have the potential to create any CO hotspots.

[74] W-Trans. 2023. Transportation Study Summary for the Suisun Logistics Center Project, Supporting Information B. CMP Calculations. April 25.

7. CUMULATIVE ANALYSIS

Consistent with the BAAQMD CEQA guidelines, the combined impacts from off-site and on-site sources were evaluated within the "zone of influence" of the Project. Off-site sources include BAAQMD permitted stationary sources, roadways with over 10,000 vehicles per day, and railways.

The cumulative impact was evaluated at the maximally exposed individual (MEI) off-site receptor for Project construction and operations. The MEI is the off-site receptor with the highest incremental cancer risk, chronic HI, and $PM_{2.5}$ concentration from the Project across all populations and exposure scenarios.

Health impacts from all identified sources within 1,000 feet of the Project were evaluated at this single location and added to the results from the Project's impacts.[75] The sources that were considered in this analysis are described below.

Results at the MEIs were compared to the significance thresholds for cumulative impacts:

- An excess lifetime cancer risk level of more than 100 in one million;
- A chronic non-cancer HI greater than 10; and
- An incremental increase in the annual average $PM_{2.5}$ concentration of greater than 0.8 μg/m^3.

7.1 Stationary Sources

BAAQMD provides a stationary source GIS map tool to use to evaluate the impacts of off-site stationary sources.[76] Stationary sources within 1,000 feet of the MEIs were included in **Table 7-1**. One existing stationary source is present within the 1,000-foot radius of the Project site.

The BAAQMD's CEQA Guidelines recommends that a project's radius for the cumulative impacts may be expanded beyond 1,000 feet if there are major contributors to overall cumulative risks and hazards, and the radius can be determined on a case-by-case basis. Travis Air Force Base is located approximately 0.5 mile east of the Project site. Potential TAC sources associated with Travis Air Force Base operations emergency generators, fuel dispensing facilities, ground support equipment such as aircraft tugs and tow tractors, and jet engines. Therefore, even though Travis Air Force Base is beyond 1,000 feet of the Project site, this analysis conservatively analyses TAC emission sources from Travis Air Force Base's operations. Stationary sources of TACs at Travis Air Force Base are available through the BAAQMD's stationary source GIS map. Because BAAQMD does not provide distance-based risk attenuation factors beyond 1,000 feet, attenuation factors at 1,000 feet were conservatively selected to evaluate the health risk impacts from the stationary sources in Travis Air Force Base at the MEI locations, presented in **Table 7-1**. Other non-stationary sources at the Travis Air Force Base is analyzed qualitatively in **Section 7.4**, below.

7.2 Roadway Sources

BAAQMD recommends evaluating impacts from all roadways with traffic of over 10,000 vehicles per day within the "zone of influence." To evaluate potential health risk impacts from existing traffic on major roadways above 30,000 AADT and highways, BAAQMD provides raster files of health impacts.

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[75] BAAQMD. 2023. California Environmental Quality Act Statute & Guidelines. Available at: https://www.califaep.org/docs/CEQA_Handbook_2023_final.pdf. Accessed: November 2023.

[76] BAAQMD. 2023. Permitted Sources Risk and Hazards Map. June. Available at: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3. Accessed: December 2023.

The roadway raster file includes impacts based on 2019 data for the entire Bay Area from three vehicle classes: (1) nontrucks (passenger cars, light-duty trucks, buses, motorcycles, and motor homes), (2) Truck 1 (light heavy-duty trucks weighing 8,501 to 14,000lbs), and (3) Truck 2 (medium heavy-duty weighing 14,001 to 33,000 lbs and heavy heavy-duty trucks weighing 33,000 lbs and above). The corresponding values for the off-site MEIs were pulled from the raster file and summarized in **Table 7-2**.

7.3 Railway Sources

BAAMQD provides raster files with health impacts from railways. The health impacts from the raster file were used to estimate the potential impact from railways at the MEI. The railway raster file includes impacts across the Bay Area from diesel locomotives used to transport freight along Class I rail lines, to transport people along commuter/passenger rail lines, and for goods movements at railyards in West Oakland and Richmond/North Richmond/San Pablo. Impacts are estimated based on arrival/departure schedules for commuter/passenger trains from the Fall of 2021 and 2020 fuel consumption rates for the freight lines operated by the Burlington Northern Santa Fe Corporation. The Project site and the MEI locations are not impacted by railway and railyard emissions based on the BAAQMD's raster file.

7.4 Summary and Discussion of Cumulative Impacts

As described above, nearby cumulative sources include highways, major streets, and railways. Impacts from these cumulative sources are combined with Project construction, and operational impacts at the off-site Project MEIs. A summary of cumulative impacts at the Project MEIs is shown in **Table 7-2**.

As discussed above, the analysis follows the comprehensive procedure for the evaluation of cumulative health risk impacts, recommended in the BAAQMD's CEQA Guidelines. The scope of this analysis has also extended beyond the recommended procedures by taking into account potential TAC emission sources from Travis Air Force Base, situated 0.5 mile the east.

Travis Air Force Base has other existing operations that may contribute to local TAC emissions beyond the permitted stationary sources discussed in **Section 7.1** and the on-road mobile sources discussed in **Section 7.2**. Potential TAC sources associated with airports, such as fuel combustion in aircraft emissions and ground equipment, are not subject to BAAQMD permitting, and are therefore not included in the BAAQMD's stationary source GIS map tool. No health risk assessment associated with the operations of Travis Air Force Base has been identified based on a review of the publicly available documents. Modeling all TAC sources to evaluate the health risks impacts of Travis Air Force Base operations exceeds the scope of the cumulative analysis procedures recommended by the BAAQMD. Furthermore, modeling the health risk impacts of Travis Air Force Base operations would be speculative due to limited data availability.

BAAQMD's CEQA Guidelines recommends lead agency to use discretion to maximum the agency's information disclosure and mitigation opportunities for projects that may impact pollution in an EJ community. The BAAQMD identified AB 617 communities in its jurisdiction: West Oakland, Richmond/North Richmond/San Pablo, and East Oakland. Neither the Project site nor its zone of influence is not located in any of the AB 617 communities.

For completeness of assessing the Project's impacts on overburdened communities, a screening analysis was conducted using publicly available EJ databases from the USEPA and CARB. The Project and the modeled receptors in **Figure 5** and **Figure 6** are at least 0.7 miles from neighborhoods categorized as low-income communities[77] according to AB 1550,[78] and at least 2.5 miles from neighborhoods categorized as disadvantaged communities according to OEHHA's CalEnviroScreen.[79] In addition, CEJST shows that the nearest disadvantaged community to be about 1.5 mile from the Project site. Based on the nature of air dispersion, particle deposition and other physical transport and chemical transformation of TACs released into the atmosphere, these disadvantaged communities identified through the State and federal tools are far beyond the zone of influence from the Project's TAC sources.

In addition, these neighborhoods that may be categorized as disadvantaged community do not have EJ indices that represent elevated air pollution impacts. Based on EJScreen, the USEPA's EJ tool, the nearest neighborhoods that have at least one EJ index above 80 percentile, indicating elevated adverse conditions, are more than 1 mile away. Furthermore, these neighborhoods have elevated EJ indices because of their sociodemographic status and/or proximity to waste sites and wastewater discharges. Diesel PM and other air pollutants are not contributing factors to environmental exposures in these communities based on EJSCreen.[80]

This analysis also evaluates the potential cumulative impact onto the Project site, which would include worker receptors. While the BAAQMD's CEQA Guidelines do not specify that an HRA is required for on-site receptors, a cumulative HRA was performed to evaluate whether the incremental emissions from the Project, combined with the existing conditions, would cause potentially significant impacts on the Project receptors.

The sources that would contribute to health risk impacts on the Project receptors include those presented in **Table 7-2**. Because the distances to these sources are similar for the off-site receptors and the Project receptors, the health risk impacts on the Project receptors are not expected to be substantially higher than those presented in **Table 7-2**. Therefore the health risk impacts on the Project receptors are expected to be less than the cumulative significance thresholds as well.

Furthermore, CARB's Air Quality and Land Use Handbook recommends avoiding siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.[81] The Project is not considered a sensitive land use by CARB's Handbook, and thus the guidance is overly conservative for this Project. Nevertheless, the existing AADT on the segment of Highway 12 near the Project site ranges from 12,500 to 18,000 based on Caltrans' most recent five-year records.[82] The Project would generate about 3,253 passenger car trips and 473 truck trips. Conservatively assuming that all Project-generated trips would travel through Highway 12, the combined traffic from existing Highway 12 AADT and the Project-generated traffic would not exceed

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[77] Although labelled as "low-income communities", these areas are not considered disadvantaged communities by AB 535.

[78] CARB. 2023. California Climate Investments Priority Populations 2023. Available at: https://gis.carb.arb.ca.gov/portal/apps/experiencebuilder/experience/?data_id=widget_64_output_config_10%3A0&id=6b4b15f8c6514733972cabdda3108348&page=Home%3A-Map. Accessed on: December 8, 2023.

[79] OEHHA. 2023. CalEnviroScreen 4.0. Available at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40. Accessed on July 19, 2023.

[80] USPEA. 2023. EJScreen: Environmental Justice Screening and Mapping Tool. Available at: https://www.epa.gov/ejscreen. Accessed on July 19, 2023.

[81] CARB. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April. Accessed: December 2023.

[82] Caltrans. 2023. Traffic Census Program, Traffic Volumes, Annual Average Daily Traffic (AADT). Available at: https://dot.ca.gov/programs/traffic-operations/census. Accessed: December 2023.

the CARB-recommended screening value of 50,000 vehicles per day for rural roads. Thus, the Project is consistent with the siting recommendations in the CARB Land Use Handbook, which are overly conservative criteria for this Project.

8. CONSISTENCY WITH AIR QUALITY PLANS

Appendix G of the CEQA Guidelines requires a Project to analyze whether it would conflict with or obstruct implementation of the applicable air quality plan. The most recently adopted regional air quality plan is the Bay Area Air Quality Management District (BAAQMD) 2017 Clean Air Plan,[83] which includes all feasible measures to reduce emissions of NOx and ROG, which are ozone precursors, reduce transport of ozone and its precursors, and reduce emissions of fine particulate matter and toxic air contaminants. The Clean Air Plan focuses on protecting public health and the climate, and includes measures designed to reduce GHG emissions in addition to air quality-related measures. The Clean Air Plan is established pursuant to air quality planning requirements defined in the California Health and Safety Code.

In determining consistency with the Clean Air Plan, this analysis considers whether the Project would (1) support the primary goals of the Clean Air Plan, (2) include applicable control measures from the Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the Clean Air Plan.

The 2017 Clean Air Plan defines a control strategy based on reducing emissions from all key sources, reducing "super-GHGs" [84], decreasing demand for fossil fuels, and decarbonizing the energy system. The control strategy contains 85 control measures that are specific actions to reduce air pollutants and GHGs in the San Francisco Bay Area Air Basin. These control strategies are grouped into the following economic sectors. Measures that are not anticipated to be applicable to the Project, or are beyond the scope and control of the Project, are also summarized below.

- Stationary source (SS): The majority of the stationary source measures are not applicable to the Project, because the Project does not include any emission sources requiring BAAQMD permitting actions, except for the proposed emergency engines. The Project would not include the stationary sources subject to SS1-SS20, SS22-24, SS26-SS31, SS33-35, and SS37-SS40.
- Transportation (TR): The majority of the transportation measures are not applicable to the Project, because the measures are directed at the BAAQMD, local transportation agencies, and local governments. However, implementation of the Project would reflect the intent behind some of the transportation measures and would support these measures. The transportation measures whose intents are reflected in the Project's Transportation Demand Management Plan are TR2, TR8, TR10, TR19, and TR22.
- Energy (EN): The energy measures are not applicable to the Project, because the measures are directed at utility providers and local governments. However, the Project would include renewable energy generation and comply with the current building energy efficiency standards.
- Building (BL): As discussed above, the project would be consistent with the green building measures. BL3 is not applicable to the Project because it calls for reducing GHG emissions in existing buildings. BL4 is also not applicable to the Project because it is directed at local governments to establish new ordinances.

[83] Bay Area Air Quality Management District, 2017. Spare the Air Cool the Climate: Final 2017 Clean Air Plan. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf.

[84] Super-GHGs are defined in the Clean Air Plan as methane, black carbon, and fluorinated gases.

- Agriculture (AG): The Project would not include any agricultural land uses. Therefore, none of the agriculture measures are applicable to the Project.
- Natural and working lands (NW): The Project is not subject to any natural and working lands measures because these measures are directed at the BAAQMD.
- Waste management (WA): WA1 through WA3 are not applicable to the Project, because they are directed at the BAAQMD and local governments to establish rules and policies related to waste management. The Project is consistent with WA4.
- Water (WR): WR1 is not applicable to the Project because it is directed at the operations of publicly-owned treatment works. The Project is consistent with WR2.
- Super-GHGs (SL): The super-GHG measures are directed at landfills, farming activities, and the BAAQMD, and are not applicable to the Project.

As discussed above, not all the control measures are suited for implementation through approval actions for individual private projects. The Clean Air Plan measures potentially applicable to the Project and the measures whose intents are supported by the implementation of the Project are in **Table 8-1.** Based on **Table 8-1**, the Project would support the primary goals of the 2017 Clean Air Plan, include applicable control measures in the Clean Air Plan, and would not disrupt or hinder the implementation of any of the measures in the Clean Air Plan.

9. ODOR IMPACTS

BAAQMD recommends that potential odor impacts be evaluated if a potential source of objectionable odors is proposed at a location near existing sensitive receptors or if sensitive receptors are proposed to be located near an existing source of objectionable odors. The first step in assessing potential odor impacts is to gather and disclose applicable information regarding the characteristics of the buffer zone between the sensitive receptor(s) and the odor source(s), local meteorological conditions, and the nature of the odor source.

During Project construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and depend on specific construction activities occurring at certain times and are not likely to be noticeable for extended periods of time beyond the boundaries of the project site. Therefore, the Project's construction odor impacts on existing sensitive receptors is considered less than significant.

The Project is a warehouse development and does not propose any odor-generating facilities identified by the BAAQMD, such as wastewater treatment plants, municipal solid waste storage, odoriferous manufacturing processes, and animal handling facilities. Although there may be some potential for small-scale, localized odor issues to emerge around Project sources such as solid waste collection, wastewater or stormwater collection/conveyance, food preparation, etc., the Project would not include facilities that may generate objectionable odors affecting a substantial number of people. In addition, if the Project operations would include warehouse storage of any odorous products, the operations would be subject to BAAQMD Regulation 7, which contains requirements on the discharge of odorous substances after the Air Pollution Control Officer (APCO) receives odor complaints from ten or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel or residence [BAAQMD 7-102]. The operations within the Project will be subject to this regulation and will comply with the requirements if the regulation becomes applicable via BAAQMD 7-102, which is not expected. Therefore, substantial odor sources and consequent effects on on-site and off-site sensitive receptors would be unlikely based on the land uses of the proposed Project and its compliance with BAAQMD Regulation 7 regarding limitations on odorous substances.

10. SUMMARY

10.1 Results

Table 4-12 and **Table 4-13** present the average daily CAP emission estimates from Project construction under the unmitigated and mitigated emission scenarios, respectively. As shown in **Table 4-13**, the construction emissions for the proposed Project with the implementation of the mitigated measures are less than the BAAQMD mass daily significance thresholds for all CAPs.

Unmitigated average daily and annual CAP emissions are summarized in **Table 4-22** for the dry storage scenario and **Table 4-23** for the cold storage scenario. **Table 4-26** and **Table 4-27** present the mitigated average daily and annual CAP emission estimates from Project operation for the two usage scenarios. As shown in the tables, for both the dry storage and cold storage scenarios, the mitigated operational emissions for the Project are less than the BAAQMD mass daily and annual significance thresholds for all pollutants except for NOx. The primary contributor to NOx emission exceedance is operational diesel truck trips.

A summary of maximum health risk impacts and annual $PM_{2.5}$ concentration increases for the Project is shown in **Table 5-5** and **Table 5-6** for the unmitigated and mitigated emission scenarios, respectively. As shown in **Table 5-6**, with the implementation of the mitigation measures relevant to health risk impacts described in **Section 10.2**, the maximum estimated cancer risk is less than the BAAQMD significance threshold and the chronic hazard index (HIC) and annual $PM_{2.5}$ concentration increases are less than the BAAQMD significance thresholds.[85]

A summary of the cumulative health risk impacts to the maximally impacted receptor is presented in **Table 7-2** As shown in the table, the cumulative health risk impacts are less than the cumulative thresholds recommended by the BAAQMD for cancer, the non-cancer chronic hazard index, and the annual average $PM_{2.5}$.

10.2 Mitigation Measures

As discussed throughout this technical report, a list of mitigation measures is quantified and applied to the controlled CAP emissions and health risk assessment. Details of each mitigation measure is provided below:

Mitigation Measure AIR-1: Tier 4 Engine Requirement for Off-Road Construction Equipment. The Project Sponsor shall require their contractors, as a condition of contract, to reduce construction-related exhaust emissions by ensuring that all off-road equipment greater than 50 horsepower shall operate on an EPA-approved Tier 4 or newer engine.

Mitigation Measure AIR-2: Low-VOC Coatings. Prior to issuance of grading or building permits, the Project Sponsor shall provide the City with documentation demonstrating the use of "Low-VOC" architectural coatings during Project construction. "Low-VOC" architectural coatings used during Project construction shall not exceed 50 grams of reactive organic gases (ROG) or volatile organic compounds (VOC) per liter of product.

Mitigation Measure AIR-3: BAAQMD's Construction Fugitive Dust Best Management Practices. The Project Sponsor shall require their contractors, as a condition of contract, to reduce construction-related fugitive dust by implementing BAAQMD's basic control measures at all construction and staging areas. The following measures are based on BAAAQMD's current CEQA Guidelines:

[85] Ibid.

a) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

b) All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c) All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d) All vehicle speeds on unpaved roads shall be limited to 15 mph.

e) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

f) All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

g) All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

h) Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

i) Publicly visible signs shall be posted with the telephone number and name of the person to contact

j) at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AIR-4: <u>Electric Landscaping Equipment.</u> The Project shall use electric landscaping equipment during Project operations.

Mitigation Measure AIR-5: <u>Engine Model Requirement for Heavy-Duty Diesel Trucks.</u> At the beginning of Project tenancy, the Project Sponsor shall submit proof of evidence to the City that any tenant-owned vehicles above 33,000 pounds gross vehicle weight rating (GVWR) accessing the Project site are solely powered by 2014 or newer engine models.

Mitigation Measure AIR-6: <u>Electric Forklifts.</u> Prior to Project occupancy, the Project Sponsor shall stipulate in tenant lease agreements that all forklifts operating on the Project site are solely powered by electricity.

The following mitigation measure is only applicable if the Project will include cold storage warehouse(s):

Mitigation Measure AIR-7: <u>TRU plug-in infrastructure.</u> For the cold storage scenario, the Project shall include electrical infrastructure such that all loading docks are equipped with plug-ins to support TRUs while stationary at the docks.

TABLES

Table 2-1
Summary of NAAQS and CAAQS
Suisun Logistics Center
Suisun, California

Pollutant	Averaging Period	California Standard	Federal Standard
Ozone (O_3)	1 hour	0.09 ppm (180 μg/m^3)	---
	8 hour	0.070 ppm (137 μg/m^3)	0.070 ppm (137 μg/m^3)
Respirable Particulate Matter (PM_{10})	24 hour	50 μg/m^3	150 μg/m^3
	Annual	20 μg/m^3	---
Fine Particulate Matter ($PM_{2.5}$)	24 hour	---	35 μg/m^3
	Annual	12 μg/m^3	12 μg/m^3
Carbon Monoxide (CO)	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
	8 hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm (339 μg/m^3)	0.100 ppm (188 μg/m^3)
	Annual	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)
Lead (Pb)	30 day average	1.5 μg/m^3	---
	Calendar Quarter	---	1.5 μg/m^3
	Rolling 3-month average	---	0.15 μg/m^3
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm (655 μg/m^3)	0.075 ppm (196 μg/m^3)
	24 hour	0.04 ppm (105 μg/m^3)	0.14 ppm (367 μg/m^3)
	Annual	---	0.030 ppm (367 μg/m^3)
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm (42 μg/m^3)	---
Vinyl Chloride	24 hour	0.01 ppm (26 μg/m^3)	---
Sulfates	24 hour	25 μg/m^3	---

Sources:

CARB. 2016. Ambient Air Quality Standards. https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf. Accessed: November 2023.

Abbreviations:

CAAQS - California Ambient Air Quality Standards
CARB - California Air Resources Board
H_2S - hydrogen sulfide
μg - micrograms
mg - milligrams
m^3 - cubic meter
NAAQS - National Ambient Air Quality Standards
NO_2 - nitrogen dioxide
O_3 - ozone
Pb - lead
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
ppm - parts per million
SO_2 - sulfur dioxide

Table 2-2
BAAQMD NAAQS and CAAQS Attainment Status
Suisun Logistics Center
Suisun, California

Pollutant	Averaging Period	Bay Area Air Quality Management District Attainment Status	
		California Standard	Federal Standard
Ozone (O_3)	1 hour	Nonattainment	---
	8 hour	Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	24 hour	Nonattainment	Unclassified
	Annual	Nonattainment	---
Fine Particulate Matter ($PM_{2.5}$)	24 hour	---	Nonattainment
	Annual	Nonattainment	Unclassified/Attainment
Carbon Monoxide (CO)	1 hour	Attainment	Attainment
	8 hour	Attainment	Attainment
Nitrogen Dioxide (NO_2)	1 hour	Attainment	Unclassified
	Annual	---	Attainment
Lead (Pb)	30 day average	---	Attainment
	Calendar Quarter	---	Attainment
	Rolling 3 Month Average	---	Unclassified
Sulfur Dioxide (SO_2)	1 hour	Attainment	Unclassified
	24 hour	Attainment	Unclassified
	Annual	---	Unclassified
Hydrogen Sulfide (H_2S)	1 hour	Unclassified	---
Vinyl Chloride	24 hour	No Information Available	---
Sulfates	24 hour	Attainment	---

Notes:

1. Attainment status for BAAQMD obtained from: https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status. Accessed: November 2023.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CAAQS - California Ambient Air Quality Standards
CO - carbon monoxide
H_2S - hydrogen sulfide
NAAQS - National Ambient Air Quality Standards
NO_2 - nitrogen dioxide
O_3 - ozone
Pb - lead
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
SO_2 - sulfur dioxide

Table 2-3
Air Quality Data for Nearest BAAQMD Monitoring Stations
Suisun Logistics Center
Suisun, California

Pollutant	2018	2019	2020	2021	2022
Ozone (O_3)[1]					
Maximum Concentration 1-hr period, ppm	0.078	0.075	0.098	0.093	0.081
Maximum Concentration 8-hr period, ppm	0.066	0.068	0.081	0.078	0.063
Days of Exceedances, California 1-hr Standard	0	0	1	0	0
Days of Exceedances, California 8-hr Standard	0	0	3	2	0
Days of Exceedances, Federal 8-hr Standard	0	0	3	2	0
Carbon Monoxide (CO)[2]					
Maximum Concentration 1-hr period, ppm	2.8	2.0	2.5	2.0	1.9
Maximum Concentration 8-hr period, ppm	2.4	1.5	1.7	1.8	1.6
Number of Exceedances, California 1-hr Standard	0	0	0	0	0
Number of Exceedances, California 8-hr Standard	0	0	0	0	0
Number of Exceedances, Federal 1-hr Standard	0	0	0	0	0
Number of Exceedances, Federal 8-hr Standard	0	0	0	0	0
Nitrogen Dioxide (NO_2)[2]					
Maximum Concentration 1-hr period, ppm	0.057	0.053	0.048	0.041	0.042
Annual Arithmetic Mean (AAM), ppm	0.0079	0.0073	0.0074	0.0059	0.0059
Number of Exceedances, California 1-hr Standard	0	0	0	0	0
Exceed California Annual Standard?	No	No	No	No	No
Number of Exceedances, Federal 1-hr Standard	0	0	0	0	0
Exceed Federal Annual Standard?	No	No	No	No	No
Sulfur Dioxide (SO_2)[2]					
Maximum Concentration 1-hr period, ppm	0.0067	0.0109	0.0072	0.0051	0.0051
Maximum Concentration 24-hr period, ppm	0.0018	0.0019	0.0016	0.0023	0.0029
Number of Exceedances, California 1-hr Standard	0	0	0	0	0
Number of Exceedances, Federal 1-hr Standard	0	0	0	0	0
Respirable Particulate Matter (PM_{10})[3]					
Maximum Concentration 24-hr period, μg/m^3	123.0	70.0	326.0	50.0	28.0
Annual Arithmetic Mean (AAM), μg/m^3	16.5	12.1	51.3	14.2	10.4
Estimated Number of Exceedances, California 24-hr Standard	13.1	--	--	--	0
Exceed California Annual Standard?	No	No	Yes	No	No
Estimated Number of Exceedances, Federal 24-hr Standard	0	0	2	0	0
Fine Particulate Matter ($PM_{2.5}$)[2]					
Maximum Concentration 24-hr period, μg/m^3	197.2	30.5	152.7	32.0	27.0
Annual Arithmetic Mean (AAM), μg/m^3	13.3	8.6	12.1	8.49	7.2
Exceed California Annual Standard?	Yes	No	Yes	No	No
Estimated Number of Exceedances, Federal 24-hr Standard	13.0	0	12.0	0	0
Exceed Federal Annual Standard?	Yes	No	Yes	No	No

Notes:

1. Data presented is for the Solano County, Fairfield monitoring station.
2. Data presented is for the Solano County, Vallejo monitoring station.
3. Data presented is for the Solano County, Vacaville monitoring station.
4. With the exception of data specific to CAAQS, all values were extracted from EPA Annual Summary Data from 2018-2022. For data pertaining to California Standards, the CARB Air Quality Data Statistics tool iADAM was used. In the instances where both sources gave data for a particular parameter, the EPA data took precedence.

Sources:

EPA Annual Summary Data. 2018-2022. Available at: https://aqs.epa.gov/aqsweb/airdata/download_files.html#Annual. Accessed: November 2023.

CARB iADAM: Air Quality Data Statistics. 2018-2022. Available at: https://www.arb.ca.gov/adam/select8/sc8start.php. Accessed: November 2023.

Abbreviations:

AAM - annual arithmetic mean
BAAQMD - Bay Area Air Quality Management District
CAAQS - California Ambient Air Quality Standards
CARB - California Air Resources Board
CO - carbon monoxide
EPA - US Environmental Protection Agency
hr - hour
µg - micrograms
m^3 - cubic meter
NO_2 - nitrogen dioxide
O_3 - ozone
ppb - parts per billion
ppm - parts per million
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
SO_2 - sulfur dioxide

Table 3-1
BAAQMD CEQA Air Quality Thresholds of Significance
Suisun Logistics Center
Suisun, California

Emissions Thresholds			
Pollutant	**Construction Average Daily (lb/day)**	**Operational Average Daily (lb/day)**	**Operational Maximum Annual (tons/yr)**
VOC	54	54	10
NOx	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
PM_{10}/$PM_{2.5}$ (fugitive dust)	Best management practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Toxic Air Contaminants (TACs) and Odor Thresholds			
TACs - Risk and Hazards for new sources and receptors (Individual Project)	Compliance with Qualified Community Risk Reduction Plan OR Increased Cancer Risk > 10 in 1 million Increased non-cancer risk > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase > 0.3 µg/m^3 annual average		
TACs - Risk and Hazards for new sources and receptors (Cumulative Threshold)	Compliance with Qualified Community Risk Reduction Plan OR Cancer Risk > 100 in 1 million (from all local sources) Non-cancer risk > 10.0 Hazard Index (from all local sources) (Chronic) $PM_{2.5}$ > 0.8 µg/m^3 annual average (from all local sources)		
Odor	None	5 confirmed complaints per year averaged over three years	

Sources:

BAAQMD. 2023. Bay Area Air Quality Management District California Environmental Quality Act Air Quality Guidelines. May. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-3-thresholds_final_v2-pdf.pdf?la=en. Accessed: November 2023.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
lb - pound
µg - micrograms
m^3 - cubic meter
NOx - nitrogen oxides
PM_{10} - particulate matter less than 10 microns in diameter
ppm - parts per million
TACs - toxic air contaminants
VOC - volatile organic compounds
yr - year

Table 4-1
Project Land Uses
Suisun Logistics Center
Suisun, California

Land Use	Land Use Type	CalEEMod Land Use Subtype	Land Use Quantity		Site Footprint
			Value	Units	Acre
High-Cube Warehouse[1]	Dry/Cold Storage[1]	Unrefrigerated/Refrigerated Warehouse-No Rail	2,059	1000 sqft	120
Parking	Parking	Parking Lot	2,207	spaces	
			2,169	1000 sqft	
Open Space	Recreational	City Park	15	acres	

Notes:

1. Two usage scenarios are evaluated for the purpose of estimating emissions: dry storage scenario and cold storage scenario.

Abbreviations:

sqft - square feet

Table 4-2
Construction Phasing Schedule
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Start Date	End Date	Number of Days
Warehouse Construction	Site Preparation	1/1/2025	1/16/2025	12
Petersen Road Widening	Linear, Grubbing & Land Clearing	1/17/2025	1/21/2025	3
	Linear, Grading & Excavation	1/22/2025	2/10/2025	14
	Linear, Drainage, Utilities, & Sub-Grade	2/11/2025	2/21/2025	9
	Linear, Paving	2/22/2025	2/28/2025	5
Warehouse Construction	Grading	1/17/2025	2/28/2025	31
	Building Construction	3/1/2025	5/1/2026	305
	Paving	5/2/2026	6/3/2026	23
	Architectural Coating	6/4/2026	7/6/2026	23

Notes:

[1] Construction schedule and phasing were based on Project-specific information.

Table 4-3
Construction Equipment List
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Equipment Type[1]	Fuel[2]	Quantity[1]	Horsepower[1]	Hours/Day[1]	Utilization Percent[1]	Unmitigated Tier[1]	Mitigated Tier[3]
Warehouse Construction	Site Preparation	Rubber Tired Dozers	Diesel	8	367	8	100%	CalEEMod Default	Tier 4 Final
		Tractors/Loaders/Backhoes	Diesel	10	84	8	100%	CalEEMod Default	Tier 4 Final
Petersen Road Widening	Linear, Grubbing & Land Clearing	Signal Boards	Electricity	1	6	8	100%	CalEEMod Default	No Specific Tier
		Crawler Tractors	Diesel	1	87	8	100%	CalEEMod Default	Tier 4 Final
		Excavators	Diesel	2	36	8	100%	CalEEMod Default	No Specific Tier
	Linear, Grading & Excavation	Excavators	Diesel	3	36	8	100%	CalEEMod Default	No Specific Tier
		Crawler Tractors	Diesel	1	87	8	100%	CalEEMod Default	Tier 4 Final
		Graders	Diesel	2	148	8	100%	CalEEMod Default	Tier 4 Final
		Rollers	Diesel	2	36	8	100%	CalEEMod Default	No Specific Tier
		Scrapers	Diesel	2	423	8	100%	CalEEMod Default	Tier 4 Final
		Rubber Tired Loaders	Diesel	1	150	8	100%	CalEEMod Default	Tier 4 Final
		Signal Boards	Electricity	1	6	8	100%	CalEEMod Default	No Specific Tier
		Tractors/Loaders/Backhoes	Diesel	4	84	8	100%	CalEEMod Default	Tier 4 Final
	Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	3	84	8	100%	CalEEMod Default	Tier 4 Final
		Signal Boards	Electricity	1	6	8	100%	CalEEMod Default	No Specific Tier
		Scrapers	Diesel	1	423	8	100%	CalEEMod Default	Tier 4 Final
		Rough Terrain Forklifts	Diesel	1	96	8	100%	CalEEMod Default	Tier 4 Final
		Graders	Diesel	1	148	8	100%	CalEEMod Default	Tier 4 Final
		Plate Compactors	Diesel	1	8	8	100%	CalEEMod Default	No Specific Tier
		Pumps	Diesel	1	11	8	100%	CalEEMod Default	No Specific Tier
		Air Compressors	Diesel	3	37	8	100%	CalEEMod Default	No Specific Tier
		Generator Sets	Diesel	1	14	8	100%	CalEEMod Default	No Specific Tier
	Linear, Paving	Rollers	Diesel	2	36	8	100%	CalEEMod Default	No Specific Tier
		Paving Equipment	Diesel	1	89	8	100%	CalEEMod Default	Tier 4 Final
		Pavers	Diesel	1	81	8	100%	CalEEMod Default	Tier 4 Final
		Tractors/Loaders/Backhoes	Diesel	3	85	8	100%	CalEEMod Default	Tier 4 Final
		Signal Boards	Electricity	1	6	8	100%	CalEEMod Default	No Specific Tier

Warehouse Construction	Grading	Excavators	Diesel	5	36	8	100%	CalEEMod Default	No Specific Tier
		Graders	Diesel	3	148	8	100%	CalEEMod Default	Tier 4 Final
		Rubber Tired Dozers	Diesel	3	367	8	100%	CalEEMod Default	Tier 4 Final
		Scrapers	Diesel	5	423	8	100%	CalEEMod Default	Tier 4 Final
		Tractors/Loaders/Backhoes	Diesel	5	84	8	100%	CalEEMod Default	Tier 4 Final
	Building Construction	Cranes	Diesel	3	367	7	100%	CalEEMod Default	Tier 4 Final
		Forklifts	Diesel	8	82	8	100%	CalEEMod Default	Tier 4 Final
		Generator Sets	Diesel	3	14	8	100%	CalEEMod Default	No Specific Tier
		Tractors/Loaders/Backhoes	Diesel	8	84	7	100%	CalEEMod Default	Tier 4 Final
		Welders	Diesel	3	46	8	100%	CalEEMod Default	No Specific Tier
	Paving	Pavers	Diesel	5	81	8	100%	CalEEMod Default	Tier 4 Final
		Paving Equipment	Diesel	5	89	8	100%	CalEEMod Default	Tier 4 Final
		Rollers	Diesel	5	36	8	100%	CalEEMod Default	No Specific Tier
	Architectural Coating	Air Compressors	Diesel	3	37	8	100%	CalEEMod Default	No Specific Tier

Notes:

[1] Equipment lists were based on Project-specific estimates.

[2] All equipment is conservatively assumed to be diesel-fueled except for signal boards.

[3] Mitigated enginer tier is assumed to be Tier 4 Final except for electric equipment and equipment under 50 horsepower.

Abbreviations:

CalEEMod - CALifornia Emissions Estimator MODel

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4-4
Construction Trips
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Year	Construction Days	Worker Trip Rates[1] (one-way trips/day)	Vendor Trip Rates[1] (one-way trips/day)	Hauling Trip Number[2] (one-way trips/phase)	Trip Lengths[3] (miles/one way trip)			Worker VMT (miles)	Vendor VMT (miles)	Hauling VMT (miles)
							Worker	Vendor	Hauling			
Warehouse Construction	Site Preparation	2025	12	45	0	0	11.7	8.4	20	6,318	0	0
	Grading	2025	31	83	1.3	6,625	11.7	8.4	20	30,245	336	132,500
	Building Construction	2025	218	865	338	0	11.7	8.4	20	2,206,269	618,946	0
		2026	87	865	338	0	11.7	8.4	20	880,484	247,010	0
	Paving	2026	23	38	0	0	11.7	8.4	20	10,226	0	0
	Architectural Coating	2026	23	173	0	0	11.7	8.4	20	46,554	0	0

EMFAC Data[4]

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	Solano County Calendar Years 2025-2026 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	25% LDA, 50% LDT1, 25% LDT2	Gasoline
Vendor		50% MHDT, 50% HHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

[1] Worker and vendor trip rates are based on CalEEMod defaults and include trips from the Petersen Road widening.

[2] Hauling Trips are estimated using CalEEMod methodology assuming 106,000 cubic yards of soil imported and 16 cubic yards of material per truck trip.

[3] Trip lengths obtained from CalEEMod Appendix D defaults for Solano County.

[4] Emissions were calculated using emission factors from EMFAC2021 Emissions Inventory with the specified settings and fleet and fuel assumptions.

Abbreviations:

CalEEMod - California Emissions Estimator Model
EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light-duty automobiles
LDT - light-duty trucks
HHDT - heavy-heavy duty trucks
MHDT - medium-heavy duty trucks
VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 4-5
Emissions Factors for Entrained Roadway Dust during Construction
Suisun Logistics Center
Suisun, California

Road Dust Equation[1,2]

E [lb/VMT] = k*(sL)^0.91 * (W)^1.02 * (1-P/4N)

Parameters	Value
E = annual average emission factor in the same units as k	[calculated]
k = particle size multiplier for particle size range	
$PM_{2.5}$ (lb/VMT)	5.5E-04
sL = roadway silt loading [grams per square meter - g/m^2][3] based on BAAQMD recommendations	0.5
W = average weight of vehicles traveling the road [tons]	2.4
P = number of “wet” days in county with at least 0.01 in of precipitation during the annual averaging period	64
N = number of days in the averaging period	365

Entrained Road Dust Emission Factors	
$PM_{2.5}$ Emission Factor (non-highways) [lb/VMT]	6.8E-04

Notes:

1 Road dust equation and parameters are based on CalEEMod Road Dust methodology for paved roads (CalEEMod Appendix C, Section 5.1.4), with the exception of roadway silt loading.

2 The assumption of paved road travel is selected based on the the BAAQMD's CEQA Guidelines, Appendix D which specifes that all roads in the air district are assumed to be paved.

3 According to the BAAQMD's CEQA Guidelines, Appendix D, a silt loading factor of 0.5 g/m^2 is reccommended for construction analysis to represent worst-case conditions and be protective of local residents nearest the project site.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
CEQA - California Environmental Quality Act
g - gram
lb - pound
m - meter
$PM_{2.5}$ - particulate matter less than 2.5 microns
VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

BAAQMD. 2023. California Air Quality Act Air Quality Guidelines Appendix D: Using CalEEMod for Bay Area Projects. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-d-using-caleemod-for-bay-area-projects_finaljm-pdf.pdf

Table 4-6
Estimated Emissions from Entrained Roadway Dust
Suisun Logistics Center
Suisun, California

Entrained Road Dust Emission Factors[1]

$PM_{2.5}$ Emission Factor [lb/VMT]	6.8E-04

Construction Phase	Construction Subphase	Year	Total VMT[2] (miles)	Total Emissions (lb)
				$PM_{2.5}$
Warehouse Construction and Petersen Road Widening	Site Preparation	2025	6,318	4.3
	Grading	2025	163,081	112
	Building Construction	2025	2,825,215	1935
		2026	1,127,494	772
	Paving	2026	10,226	7.0
	Architectural Coating	2026	46,554	32

Notes:

[1] Emission factors for entrained roadway dust are calculated following the methodlogy in the California Air Resources Board's (ARB) 2021 Miscellaneous Process Methodology 7.9 for Entrained Road Travel, Paved Road Dust for Solano County as shown in Table 4-5.

[2] Total VMT is the sum of Worker, Vendor, and Hauling VMT calculated using CalEEMod default methodology as shown in Table 4-4.

Abbreviations:

lb - pound

$PM_{2.5}$ - particulate matter less than 2.5 microns

VMT - vehicle miles travelled

References:

California Air Resources Board. 2021. Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust. March. Available online at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4-7
Estimated Emissions from Off-Road Grading Activity
Suisun Logistics Center
Suisun, California

<table>
<tr><th rowspan="2">Construction Phase</th><th rowspan="2">Construction Subphase</th><th rowspan="2">Equipment[1]</th><th rowspan="2">Quantity[2]</th><th>Maximum Area Disturbed per Equipment Type[2]</th><th>Total Maximum Area Disturbed[2]</th><th>VMT[3]</th><th>$PM_{2.5}$ Emission Factor[4]</th><th>Control Efficiency[5]</th><th>Unmitigated Emissions
$PM_{2.5}$</th><th>Mitigated Emissions[5]
$PM_{2.5}$</th></tr>
<tr><th>(acre/yr)</th><th>(acre/yr)</th><th>(miles/yr)</th><th>(lb/VMT)</th><th>%</th><th>g/s</th><th>g/s</th></tr>
<tr><td rowspan="3">Warehouse Construction</td><td rowspan="3">Grading</td><td>Graders</td><td>3</td><td>47</td><td rowspan="3">248</td><td rowspan="3">171</td><td rowspan="9">0.17</td><td rowspan="9">61%</td><td rowspan="3">7.5E-04</td><td rowspan="3">2.9E-04</td></tr>
<tr><td>Scrapers</td><td>5</td><td>155</td></tr>
<tr><td>Rubber Tired Dozers</td><td>3</td><td>47</td></tr>
<tr><td rowspan="6">Petersen Road Widening</td><td>Linear, Grubbing & Land Clearing</td><td>Crawler Tractors</td><td>1</td><td>2</td><td>2</td><td>1.0</td><td>4.6E-06</td><td>1.8E-06</td></tr>
<tr><td rowspan="3">Linear, Grading & Excavation</td><td>Crawler Tractors</td><td>1</td><td>7</td><td rowspan="3">49</td><td rowspan="3">34</td><td rowspan="3">1.5E-04</td><td rowspan="3">5.8E-05</td></tr>
<tr><td>Graders</td><td>2</td><td>14</td></tr>
<tr><td>Scrapers</td><td>2</td><td>28</td></tr>
<tr><td rowspan="2">Linear, Drainage, Utilities, & Sub-Grade</td><td>Scrapers</td><td>1</td><td>9</td><td rowspan="2">14</td><td rowspan="2">9.3</td><td rowspan="2">4.1E-05</td><td rowspan="2">1.6E-05</td></tr>
<tr><td>Graders</td><td>1</td><td>5</td></tr>
</table>

Notes:

[1] Consistent with CalEEMod methodology, grading fugitive dust emissions are calculated for all grading equipment (i.e., graders, scrapers, etc.). Bulldozers are analyzed separately in Table 4-8 for fugitive dust

[2] The total maximum area disturbed is calculated following CalEEMod User's Guide Appendix C which predicts the maximum acreage each equipment type can grade during an 8-hour workday.

[3] VMT calculated following guidance in the CalEEMod User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equation is:

$VMT = A_S/W_b \times (43{,}560 \text{ sqft/acre})/(5{,}280 \text{ ft/mile})$, where:

A_S = A_S, acreage of the grading site (acre)

12 = W_b, blade width of grading equipment (CalEEMod default)

[4] Emission factor calculated following guidance in the CalEEMod User's Guide, Appendix C, which is based on AP-42, Section 11.9 for grading equipment. The equation is:

$EF_{PM2.5} = 0.04 \times (S)^{2.5} \times F_{PM2.5}$, where:

7.1 = S, mean vehicle speed (mph) (AP-42 default)

0.031 = $F_{PM2.5}$, $PM_{2.5}$ scaling factor (AP-42 default)

[5] Fugitive $PM_{2.5}$ emissions are mitigated by watering the construction site two times per day, which is estimated to reduce emissions by 61% per CalEEMod defaults, consistent with best management practices

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
EF - emission factor
ft - feet
g - grams
lb - pounds
mph - miles per hour
$PM_{2.5}$ - particulate matter less than 2.5 microns in aerodynamic diameter
s - second
sqft - square feet
VMT - vehicle miles traveled
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4-8
Estimated Emissions from Off-Road Bulldozing Activity
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Equipment[1]	Year	Total Work Days[2]	Hours of Operation[2]	$PM_{2.5}$ Emission Factor[3]	Control Efficiency[4]	Unmitigated Emissions	Mitigated Emissions[4]
								$PM_{2.5}$	$PM_{2.5}$
				(days/yr)	(hour/day)	(lb/hour)	%	g/s	g/s
Warehouse Construction	Site Preparation	Rubber Tired Dozers	2025	12	8	0.41	61%	1.1E-03	4.1E-04
	Grading	Rubber Tired Dozers	2025	31	8			2.7E-03	1.1E-03

Notes:

1. Consistent with CalEEMod methodology, bulldozing fugitive dust emissions are calculated for all bulldozers in the reported construction equipment.
2. Hours per day for each piece of equipment is reported in Table 4-3. Annual emissions are calculated using the number of work days for each phase and calendar year as shown in Table 4-2.
3. Emission factor calculated following guidance in the CalEEMod User's Guide, Appendix C, which is based on AP-42, Section 11.9 for bulldozing equipment. The equation is:
   $EF_{PM2.5} = C_{tsp} \times s^{1.2} \times F_{PM2.5} / M^{1.3}$, where:
   5.7 = C_{tsp}, arbitrary coefficient used by AP-42
   6.9 = s, material silt content (%)
   7.9 = M, material moisture content (%)
   0.105 = F, scaling factor
4. Fugitive $PM_{2.5}$ emissions are mitigated by watering the construction site two times per day, which is estimated to reduce emissions by 61% per CalEEMod defaults, consistent with best management practices from BAAQMD.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
EF - emission factor
g - grams
lb - pounds
$PM_{2.5}$ - particulate matter less than 2.5 microns in aerodynamic diameter
s - second
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4-9
Estimated Emissions from Truck Loading and Unloading
Suisun Logistics Center
Suisun, California

Construction Subphase	Year	Number of Work Days	Soil Imported[1]	Unmitigated Emission Factor[2]	Control Efficiency[3]	Unmitigated Emissions		Mitigated Emissions[3]	
				$PM_{2.5}$		$PM_{2.5}$		$PM_{2.5}$	
		(days/yr)	(ton)	(lb/ton)	%	(lb/yr)	g/s	(lb/yr)	g/s
Grading	2025	31	134,002	4.66E-05	61%	6.2	1.7E-04	2.4	6.5E-05

Notes:

[1] The volume of soil imported was provided by the Project Applicant and was converted to tons assuming the CalEEMod default density of 1.26 tons per cubic yard.

[2] Emission factor calculated following guidance in the CalEEMod User's Guide, Appendix C, which is based on AP-42, Section 13.2.4 for aggregate handling. The equation is:
$EF = k \times (0.0032) \times (U/5)^{1.3} / (M/2)^{1.4}$, where the following default values are used:

0.053 = $k_{PM2.5}$, $PM_{2.5}$ particle size multiplier
5.7 = mean wind speed (U), meters per second
13 = mean wind speed (U), miles per hour
12 = material moisture content (M), %

[3] Fugitive $PM_{2.5}$ emissions are mitigated by watering the construction site two times per day, which is estimated to reduce emissions by 61% per CalEEMod defaults, consistent with best management practices from BAAQMD.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
g - grams
lb - pounds
$PM_{2.5}$ - particulate matter less than 2.5 microns in aerodynamic diameter
s - second
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4-10
Estimated Emissions from Construction Architectural Coating Off-Gassing
Suisun Logistics Center
Suisun, California

Inputs

Parameter		Input	Units
Non-Residential Surface Area to Floor Area Ratio		2	
Painted Area in Parking Lot		6%	
Application Rate		100%	
Fraction of Surface Area	Interior Surfaces	75%	
	Exterior Shell	25%	
Outdoor Paint VOC Content		150	g/L
Low-VOC VOC Content		50	g/L
Parking Paint VOC Content		100	g/L

Emissions

Construction Phase	Construction Subphase	Year	Land Use	Square Footage (square feet)	Painted Surface Area[1] (square feet)	Unmitigated Architectural Coating ROG Emissions[2] (lb)	Mitigated Architectural Coating ROG Emissions[3] (lb)
Warehouse Construction	Architectural Coating	2026	Warehouses	2,058,667	1,029,334	7,159	2386
			Parking	2,169,483	130,169	604	604
					Totals	**7,762**	**2,990**

Notes:

[1] Consistent with CalEEMod Appendix C, non-residential building surface area was assumed to be 2 times the floor area and building surface area is assumed to be 75% indoors and 25% outdoors. Consistent with CalEEMod Appendix C, the parking painted area was assumed to be 6% of the total surface area for surface lots. Parking lots are assumed to have no indoor surfaces. In addition, only the exterior shells of the warehouses were assumed to be painted.

[2] Calculated based on CalEEMod assumption that 1 gallon of paint covers 180 square feet. Also consistent with CalEEMod Appendix G, which is based on BAAQMD Regulation 8 Rule 3 paint VOC regulations, assumes a VOC content of 150 g/L for outdoor paint and 100 g/L for parking paint. VOC is assumed to be equivalent to ROG for these purposes.

[3] Calculated in the same manner as unmitigated emissions except that the VOC content of outdoor paint is assumed to have 50 g/L or less VOC content.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
g - grams
L - liter
lb - pound
ROG - Reactive Organic Gas
VOC - Volatile Organic Compound

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

South Coast Air Quality Management District (AQMD). "Super-Compliant Architectural Coatings." Accessed Sep 2023. Available online at https://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings

Table 4-11
Estimated Emissions from Construction Paving Off-Gassing
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Year	Asphalt-Paved Area[1,2]	Asphalt Paving ROG Off-Gassing Emission Factor[3]	ROG Off-Gassing Emissions
			(acre)	(lb/acre)	(lb)
Warehouse Construction	Paving	2026	50	2.62	130
Petersen Road Widening	Linear, Paving	2025	2.6	2.62	6.9

Notes:

[1] The asphalt paved area for warehouse construction was assumed to be the same area as the Project's parking lot.

[2] The asphalt paved area for Petersen Road Widening is the area of the new lanes (5,200 linear feet long and 22 feet wide) according to the information provided by RAK.

[3] The VOC off-gassing emission factor is from CalEEMod User's Guide, Appendix C. VOC is assumed to be equivalent to ROG for these purposes.

Abbreviations:

CalEEMod - California Emissions Estimator Model
lb - pound
VOC - volatile organic compound
ROG - reactive organic gas

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

RAK Civicl Engineers. 2023. Travis Air Force Base / Petersen Road Truck Only Lane Addition. November 2, 2023.

Table 4-12
Estimated Unmitigated Criteria Air Pollutants Emissions from Proposed Project Construction
Suisun Logistics Center
Suisun, California

Summary of Construction Emissions by Source

Construction Phase	Construction Subphase	Year	Source	CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				(lb/yr)			
Warehouse Construction	Site Preparation	2025	On-Site Exhaust	105	1,004	43	40
			Mobile Exhaust	2	2	0.02	0.02
			Roadway Dust	--	--	17	4
	Petersen Road Widening	2025	On-Site Exhaust	89	795	34	32
	Grading	2025	On-Site Exhaust	268	2,488	105	96
			Mobile Exhaust	21	600	9	8
			Roadway Dust	--	--	480	122
	Building Construction	2025	On-Site Exhaust	700	6,460	266	245
			Mobile Exhaust	867	3,343	37	35
			Roadway Dust	--	--	7,910	1993
		2026	On-Site Exhaust	266	2,434	93	86
			Mobile Exhaust	328	1,269	14	13
			Roadway Dust	--	--	3,157	795
	Paving	2026	On-Site Exhaust	44	409	18	17
			Mobile Exhaust	4	2	0.04	0.03
			Roadway Dust	--	--	28	7
			Paving	130	--	--	--
	Architectural Coating	2026	On-Site Exhaust	11	79	2	2
			Mobile Exhaust	16	11	0.2	0.2
			Roadway Dust	--	--	129	32
			Architectural Coating	7,762	--	--	--

Average Construction Emissions by day

Year	ROG	NOx	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
	(lb/day)			
2025	8	**56**	2	2
2026	**64**	32	1	0.9
BAAQMD Thresholds[2]	54	54	82	54

Notes:

[1] Construction emissions were estimated with methodology equivalent to CalEEMod. On-site exhaust represents emissions from offroad equipment, while mobile exhaust includes emissions from worker, vendor, and hauling trucks. For particulate matter, the construction emissions of fugitive dust include entrained roadway dust and tire/brake wear emissions

[2] Thresholds are from BAAQMD's CEQA Air Quality Guidelines. For particulate matter, this includes construction exhaust and excludes fugitive emissions. Emissions exceeding the BAAQMD's thresholds are shown in **bold**.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutants
CEQA - California Environmental Quality Act
lb - pounds
NOx - nitrogen oxides
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
ROG - reactive organic gases

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4-13
Estimated Mitigated Criteria Air Pollutants Emissions from Proposed Project Construction
Suisun Logistics Center
Suisun, California

Summary of Construction Emissions by Source

Construction Phase	Construction Subphase	Year	Source	CAP Emissions[1]			
				ROG	NOx	PM_{10}	$PM_{2.5}$
				(lb/yr)			
Warehouse Construction	Site Preparation	2025	On-Site Exhaust	16	82	3	3
			Mobile Exhaust	2	2	0.02	0.02
			Roadway Dust	--	--	17	4
	Petersen Road Widening	2025	On-Site Exhaust	33	210	8	7
	Grading	2025	On-Site Exhaust	64	384	14	13
			Mobile Exhaust	21	600	9	8
			Roadway Dust	--	--	480	122
	Building Construction	2025	On-Site Exhaust	304	2,025	72	68
			Mobile Exhaust	867	3,343	37	35
			Roadway Dust	--	--	7,910	1,993
		2026	On-Site Exhaust	118	797	27	26
			Mobile Exhaust	328	1,269	14	13
			Roadway Dust	--	--	3,157	795
	Paving	2026	On-Site Exhaust	22	135	6	5
			Mobile Exhaust	3.5	2.4	0.04	0.03
			Roadway Dust	--	--	28	7
			Paving	130	--	--	--
	Architectural Coating	2026	On-Site Exhaust	11	79	2	2
			Mobile Exhaust	16	11	0.2	0.2
			Roadway Dust	--	--	129	32
			Architectural Coating	2,990	--	--	--

Average Construction Emissions by day

Year	ROG	NOx	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
	(lb/day)			
2025	5	25	0.5	0.5
2026	27	17	0.4	0.3
BAAQMD Thresholds[2]	54	54	82	54

Notes:

[1] Construction emissions were estimated with methodology equivalent to CalEEMod. On-site exhaust represents emissions from offroad equipment, while mobile exhaust includes emissions from worker, vendor, and hauling trucks. For particulate matter, the construction emissions of fugitive dust include the entrained roadway dust. Controlled construction emissions are calculated using Tier 4 Final emission factors for all offroad equipment.

[2] Thresholds are from BAAQMD's CEQA Air Quality Guidelines. For particulate matter, this includes construction exhaust and excludes fugitive emissions.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutants
CEQA - California Environmental Quality Act
lb - pounds
NOx - nitrogen oxides
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
ROG - reactive organic gases

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4-14
Consumer Products Emission Factor
Suisun Logistics Center
Suisun, CA

Year	County	Countywide Consumer Products ROG inventory (tons/day)[1]	County Population[2]	Total County Building Area (sqft)[3]	Consumer Products VOC EF (lb/sqft/day)
2020	Solano	2.98	440,198	394,395,001	1.511E-05
2026	Solano	3.13	464,514	416,180,899	1.505E-05

Notes:

1. ROG consumer products inventory obtained from California Emissions Projection Analysis Model for Solano County.
2. Population estimates obtained from Department of Finance Population Projections for Solano County.
3. Total building square footage in Solano County for 2020 was obtained from FEMA HAZUS-MH software (version 6.0). Building square footage in 2026 was estimated by assuming the ratio of building square footage per population stays constant.

Abbreviations:

EF - emission factor
FEMA - Federal Emergency Management Agency
lb - pound
ROG - Reactive Organic Compounds
sqft - square foot

References:

California Air Resources Board. California Emissions Projection Analysis Model, CEPAM2019v1.03. Available online at https://ww2.arb.ca.gov/applications/cepam2019v103-standard-emission-tool.

State of California Department of Finance. P-3: Complete State and County Projections Dataset. Available online at https://dof.ca.gov/forecasting/demographics/projections/.

US Federal Emergency Management Agency's Hazus software (HAZUS-MH), Version 6.0. Available online at https://msc.fema.gov/portal/resources/hazus.

Table 4-15
Emergency Engine and Fire Pump Emissions during Project Operations
Suisun Logistics Center
Suisun, California

Emergency Engine Emission Factors for Diesel Engines

Fuel	Engine Tier	Engine Size Range (hp)		Engine Emission Factors[1] (g/bhp-hr)				
		Minimum	Maximum	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
Diesel	Tier 2	25	50	0.30	5.3	0.45	0.45	523

Emergency Engine Information[2]

Scenario	Engine Type	Engine Tierl	Number of Engines	Size	Size	Fuel Type	Annual Operation[3]
				kW	hp		hr/yr
Project Operation	Generator	Tier 2	6	37	50	Diesel	150
	Fire Pump	Tier 2	6	37	50	Diesel	150

Emergency Engine Emissions

Scenario	Engine Type	Size (hp)	Quantity	Annual Emissions (ton/yr)				Annual Emissions (MT/yr)
				ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
Project Operation	Generator	50	6	0.015	0.26	0.022	0.022	24
	Fire Pump	50	6	0.015	0.26	0.022	0.022	24
			Total Emissions	**0.030**	**0.53**	**0.045**	**0.045**	**47**

Notes:

1 Engine emission factors for PM_{10} and $PM_{2.5}$ (assumed all engines are diesel fueled and that all PM_{10} is diesel particulate matter) based on ARB standards for diesel generator engines. Emission factors for ROG were converted from NMHC values provided in the Tier standards using EPA hydrocarbon conversion factors. When an emission factor was specified as a combined NMHC+NO_X factor, the NMHC/NO_X ratio of 5%/95% were taken from BAAQMD guidance. The emission factors for CO_2e are based on CalEEMod User's Guide Appendix G.

2 Engine numbers, size, and fuel type of emergency engines are Project-specific estimates.

3 Operation for routine maintenance and testing was conservatively assumed to be 50 hours per year, the maximum allowable by the Airborne Toxics Control Measure (ATCM) for Stationary Compression Ignition Engines (17 CCR 93115). Operation for nontesting and nonmaintenance purposes was conservatively assumed to be 100 hours per year, per 2022 BAAQMD CEQA Guidelines, Appendix E.

Abbreviations:

ARB - [California] Air Resources Board
BAAQMD - Bay Area Air Quality Management District
CalEEMod - CALifornia Emissions Estimator MODel
CO_2e - carbon dioxide equivalent
EPA - US Environmental Protection Agency
g/bhp-hr - grams per brake horsepower hour
GWP - global warming potential
hp - horsepower
kW - kilowatt
MT - metric ton
NMHC - non-methanic hydrocarbons
NO_X - oxides of nitrogen
PM_{10} - PM less than 10 microns in aerodynamic diameter
$PM_{2.5}$ - PM less than 2.5 microns in aerodynamic diameter
ROG - reactive organic gases
yr - year
hr - hour

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

California Air Resources Board. Non-road Diesel Engine Certification Tier Chart. Available online at: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart

USEPA. 2010. Conversion Factors for Hydrocarbon Emission Components, NR-002d. EPA-420-R-10-015. July. Available online at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P10081RP.PDF?Dockey=P10081RP.PDF

BAAQMD. 2004. CARB Emission Factors for CI Diesel Engines - Percent HC in Relation to NMHC + NOx. Available at: https://www.baaqmd.gov/~/media/files/engineering/policy_and_procedures/engines/emissionfactorsfordieselengines.pdf

BAAQMD. 2023. California Air Quality Act Air Quality Guidelines Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

Table 4-16
Trips and VMT for Project Operations
Suisun Logistics Center
Suisun, California

Fleet Type	Average Trip Length	Daily Trip Rates[1]	Annual Trips[3]	Daily VMT[2]	Annual VMT[3]
	Miles/Trip	Trips/day	Trips/yr	Miles/day	Miles/yr
Trucks[4]	39.5	473	172,645	18,684	6,819,478
Passenger Cars	13.2	3,253	1,187,345	42,940	15,672,954

Notes:

1. Daily Project trip rates and average trip length were provided by the Project's Traffic Impact Study.
2. Daily VMT is calculated by multiplying the number of trips by the average trip length.
3. Annual trips and VMT are calculated assuming 365 days per year of operation for all fleets.
4. Truck trip length in this calculation is conservatively chosen to be the higher among the two: 39.5 miles per trip for medium and heavy trucks, and 35.9 miles per trip for heavy trucks.

Abbreviations:

VMT - Vehicle miles traveled

yr - year

References:

Fehr and Peers. 2024. Big Data Passenger Vehicle and Light Duty Truck Trip Lengths and Project-Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California. January 17, 2024.

Table 4-17
Summary of Project Fleet Mix
Suisun Logistics Center
Suisun, California

Fleet Type	Description	EMFAC2007 Category[1]	Fuel[1,2]
Trucks	Semi-trucks	HHDT	Diesel
Passenger Cars[3]	Passenger Vehicles	LDA, LDT1, LDT2, MDV	EMFAC Default Mix

Notes:

1. EMFAC2007 categories and fuel types were chosen to match the Project's vehicle type descriptions.
2. The EMFAC default fuel mix for the Passenger fleet consists of Gasoline, Diesel, Plug-in Hybrid, and Electric vehicles.
3. The proportion of LDA, LDT1, LDT2, and MDV within the passenger vehicles fleet is estimated using EMFAC2021 default population estimates for the passenger vehicle categories. Using EMFAC2021 population estimates, the passenger vehicle fleet is comprised of approximately 57.9% LDA, 4.6% LDT1, 22.1% LDT2, and 15.4% MDV.

Abbreviations:

HHDT - heavy-heavy duty trucks
LDA - light duty auto (passenger cars)
LDT- light duty trucks
MDV - medium duty trucks
EMFAC - EMission FACtor estimator model

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 4-18
Paved Road Fugitive Dust Emission Factors
Suisun Logistics Center
Suisun, California

Road Dust Equation[1]

E [lb/VMT] = k*(sL)^0.91 * (W)^1.02 * (1-P/4N)

Parameter	Value
k = particle size multiplier for PM_{10} [g/VMT]	1.00
k = particle size multiplier for $PM_{2.5}$ [g/VMT]	0.25
sL = roadway silt loading [grams per square meter - g/m^2]	0.032
W = average weight of vehicles traveling the road [tons]	2.4
P = number of “wet” days in county with at least 0.01 in of precipitation during the annual averaging period	64
N = number of days in the averaging period	365
E = Fugitive PM_{10} Emission Factor [g/VMT]	0.10
E = Fugitive $PM_{2.5}$ Emission Factor [g/VMT]	0.025

Notes:

1. Road dust equation and parameters are based on the U.S. EPA AP-42 Chapter 13.2.1: Paved Roads. Annual Solano county "wet" days and statewide average vehicle fleet weight are based on CalEEMod 2022 defaults.
2. Roadway silt loading factor based on values for major and collector streets from CARB's Methodology 7.9, Entrained Road Travel, Paved Road Dust.
3. Number of "wet" days in Solano County based on U.S. EPA AP-42 Figure 13.2.1-2 (Mean number of days with 0.01 inch or more of precipitation in the United States).

Abbreviations:

ARB - Air Resource Board
lb - pounds
g - grams
m^2 - square meters
PM - particulate matter
$PM_{2.5}$ - particulate matter less than 2.5 microns in diameter
PM_{10} - particulate matter less than 10 microns in diameter
U.S. EPA - United States Environmental Protection Agency
VMT - vehicle miles traveled

References:

USEPA. 2011. AP 42. Compilation of Air Pollutant Emission Factors, Volume 1. Fifth Edition. Chapter 13.2.1, Paved Roads. Available online at: https://www3.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf

California ARB. 2021. Miscellaneous Processes Methodologies - Paved Entrained Road Dust. Available online at: https://ww3.arb.ca.gov/ei/areasrc/fullpdf/2021_paved_roads_7_9.pdf

Table 4-19
Unmitigated Project Fleet Emission Factors
Suisun Logistics Center
Suisun, California

Fleet Type	Calendar Year	CAP Emission Factors																			
		ROG						NO_x			PM_{10}					$PM_{2.5}$				
		RUNEX	RUNLOSS	STREX	IDLEX	DIURN	HOTSOAK	RUNEX	STREX	IDLEX	RUNEX	PMTW	PMBW	STREX	IDLEX	RUNEX	PMTW	PMBW	STREX	IDLEX
		g/mile		g/trip				g/mile	g/trip		g/mile			g/trip		g/mile			g/trip	
Passenger Cars	2026	0.0093	0.20	0.36	0	0.37	0.10	0.053	0.30	0	0.0012	0.0080	0.0058	0.0020	0	0.0011	0.0020	0.0020	0.0019	0
Trucks	2026	0.015	0	0	0.35	0	0	1.7	2.9	4.3	0.027	0.035	0.078	0	0.0026	0.026	0.0089	0.027	0	0.0025

Notes:

1. Emission factors for each passenger cars were developed by creating weighted emission factors based on the EMFAC 2021 default mixture of LDA/LDT1/LDT2/MDV within the passenger vehicle fleet. Trucks are equivalent to diesel HHDT emission factors. EMFAC2021 v1.0.2 for Solano (SF) sub-area and operational year 2026 were used.

Abbreviations:

ROG - Reactive organic gases
NO_x - Nitrogen oxides
PM_{10} - Particulate matter less than 10 microns in diameter
$PM_{2.5}$ - Particulate matter less than 2.5 microns in diameter
RUNEX - Running exhaust emissions
RUNLOSS - Evaporative losses
STREX - Start exhaust tailpipe emissions
IDLEX - Idle exhaust emissions
DIURN - Diurnal Evaporative Hydrocarbon Emissions
HOTSOAK - Hot soak evaporative hydrocarbon emissions
VMT - Vehicle miles traveled
CAP - Criteria Air Pollutants
HHDT - heavy-heavy duty trucks
LDA - light duty auto (passenger cars)
LDT- light duty trucks
MDV - medium duty trucks

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 4-20
Unmitigated TRU Operations and Emission Factors
Suisun Logistics Center
Suisun, California

TRU Usage

TRU Usage Estimates		Value
Percent of time TRU engine is running during TRU operation [--][1]		62.5%
Operational Days [days/year]		365
Average Truck Round Trip Length [miles/trip]		79.0
Average Truck Travel Speed [miles/hour]		50
TRU Equipped Truck Population[2] [# trucks]		237
On-Site Loading and Unloading	Daily loading and unloading time[3] [hrs/day/truck]	4
	Annual loading and unloading time[3] [hrs/year]	346,020
	Daily On-Site TRU Usage[1,3] [hrs/day]	2.5
	Annual On-Site TRU Usage[1,3] [hrs/year]	216,263
Off-Site Travel	Daily Travel Time[3] [hrs/day/truck]	1.6
	Annual Travel Time[3] [hrs/year]	136,678
	Daily Off-Site TRU Usage[1,3] [hrs/day]	1.0
	Annual Off-Site TRU Usage[1,3] [hrs/year]	85,424

TRU Emission Factors

Source	Operational Year[4]	Model Year[5]	Fuel	Emission Factor (g/hr)[6]			
				ROG	NO_X	PM_{10}	$PM_{2.5}$
TRU Aggregate	2026	ALL	Diesel	5.0	40.6	0.95	0.88

Notes:

1. According to Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units, TRU engines are generally running about 62.5% of time that a TRU unit is turned on.
2. The TRU truck population was assumed to equal to the number of round trips per day rounded up, or 237 trucks, assuming 100% of trucks in the cold storage scenario will be equipped with TRUs.
3. Approximate on-site TRU usage represents 4 hours of TRU idling when truck is loading and unloading at the dock under the unmitigated scenario.
4. Emissions from TRUs decrease over time, but the earliest possible year was chosen to calculate criteria air pollutant emissions from TRUs.
5. Emission factors based on default model year composition for TRUs.
6. Emission factors aggregated based on OFFROAD2021 for Transportation Refrigeration Unit vehicle classes for Solano (SF) sub-area in 2026. TRU vehicle classes include Instate Gensets, Instate Trailers, Instate Trucks, Out-Of-State Gensets, and Out-Of-State Trailers. Emission factors were calculated by dividing the total TRU emissions by total TRU operation.

Abbreviations:

ARB - [California] Air Resources Board
g - gram
PM - particulate matter
hr - hour
mi - mile
NO_X - oxides of nitrogen
ROG - reactive organic gases
TRU - transportation refrigeration unit
yr - year

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inventory/.

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Table 4-21
Unmitigated Yard Equipment Operations and Emission Factors
Suisun Logistics Center
Suisun, California

Yard Equipment Usage

Yard Equipment Usage Estimates		Value
Operational Days [days/year]		365
Number of Buildings [# buildings]		6
Yard Trucks (Terminal Tractors)	Yard Trucks at Site[1] [yard trucks/building]	1
	Yard Truck Trips per Day[1] [trips/day/truck]	473
	Yard Truck Trip Length[1] [miles/trip]	0.55
	Daily Yard Truck Travel[1] [miles/day]	1,547
	Annual Yard Truck Travel[1] [miles/year]	564,551
Forklifts	Forklifts at Site[2] [forklift/building]	1
	Forklift Usage Rate[2] [hrs/forklift/day]	24
	Daily Forklift Usage[2] [hrs/day]	144
	Annual Forklift Usage[2] [hrs/year]	52,560

Yard Equipment Emission Factors

Source	Year[3]	Fuel Type	EF Unit	Emission Factor [4,5]				
				ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
Yard Trucks	2026	Diesel	g/mile	0.03	1.1	0.17	0.06	1,190
Forklifts	2026	Diesel	g/hr	4.4	37	1.4	1.3	10,724

Notes:

1. The Project Developer expects to operate one yard truck in each of the six buildings. Each yard truck is assumed to be used 365 days per year for emissions estimation purposes. It is assumed that each truck trip will generate one yard truck trip within the site. An average yard truck trip length of 0.55 miles was estimated by estimating the average trip length to each of the six warehouse buildings, weighted by the approximate size of each building.

2. The Project Developer expects to operate one forklift in each of the six buildings. Each forklift is conservatively assumed to run 24 hours per day, 365 days per year for emissions estimation purposes.

3. Emissions from heavy equipment decrease over time, but the earliest possible year was chosen to calculate criteria air pollutant emissions.

4. Emission factors for yard trucks assume default gram per mile EMFAC2021 emission factors for diesel MHDT vehicles.

5. Emission factors for forklifts were aggregated based on OFFROAD2021 for industrial forklifts for Bay Area Air Quality Management District in 2026. Emission factors were calculated by dividing the total forklift emissions by total forklift operation from OFFROAD2021.

Abbreviations:

ARB - [California] Air Resources Board
g - gram
PM - particulate matter
hr - hour
mi - mile
NO_X - oxides of nitrogen
ROG - reactive organic gases
TRU - transportation refrigeration unit
yr - year

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inventory/.

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Table 4-22
Unmitigated Criteria Air Pollutants Emissions for the Dry Storage Scenario
Suisun Logistics Center
Suisun, California

Source Category	Source Sub-Category	Project CAP Emissions							
		(tons/yr)				(lb/day)[1]			
		ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area	Architectural Coating[2]	0.4	--	--	--	2	--	--	--
	Consumer Products[2]	6	--	--	--	31	--	--	--
	Landscaping[2]	1	0.1	0.01	0.01	7	0.4	0.05	0.05
Mobile[3]	Trucks	0.2	14.2	1.8	0.7	1.0	78	10	4
	Passenger Vehicles	1.5	1.3	2.0	0.5	8	7	11	3
On-site Equipment	Emergency Engines[4]	0.03	0.5	0.04	0.04	0.2	3	0.2	0.2
	Yard Trucks[5]	0.02	0.67	0.1	0.03	0.09	4	0.6	0.2
	Forklifts[5]	0.3	2	0.08	0.08	1	12	0.5	0.4
Total Emissions[6]		9	**19**	4	1	52	**107**	23	8
Threshold of Significance		10	10	15	10	54	54	82	54

Notes:

[1] Emissions in tons per year were converted to average pounds per day assuming 365 days of activity per year.

[2] Architectural coating, consumer product, and landscapingemissions for dry operations were calculated using CalEEMod 2022.1. CalEEMod default usage rates were used for all categories with the exception of architectural coating which assumes no interior painting based on information from the Project Applicant.

[3] Emissions from trucks and passenger vehicles were calculated using CalEEMod methodology, EMFAC2021 emission factors, and trip data provided in the Project's transportation analysis.

[4] Emergency engine emissions were calculated using ARB emission factors for diesel emergency engines, as shown in Table 4-15.

[5] On-site equipment includes yard trucks and forklifts. These emissions were calculated using ARB and EMFAC emission factors.

[6] Unmitigated dry storage scenario emissions in exceedance the applicable threshold of significance are shown in **bold**.

Abbreviations:

ARB - California Air Resources Board
CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pound
NOx - nitrogen oxides
PM_{10} - PM less than 10 microns in aerodynamic diameter
$PM_{2.5}$ - PM matter less than 2.5 microns in aerodynamic diameter
ROG - reactive organic gases
yr - year

References:

California Emissions Estimator Model (CalEEMod). 2022.1. CAPCOA. 2022. Available online at: http://www.caleemod.com

Table 4-23
Unmitigated Criteria Air Pollutants Emissions for the Cold Storage Scenario
Suisun Logistics Center
Suisun, California

Source Category	Source Sub-Category	Project CAP Emissions							
		(tons/yr)				(lb/day)[1]			
		ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area	Architectural Coating[2]	0.4	--	--	--	2	--	--	--
	Consumer Products[2]	6	--	--	--	31	--	--	--
	Landscaping[2]	1	0.1	0.01	0.01	7	0.4	0.1	0.1
Mobile[3]	Trucks	0.2	14	2	0.7	1.0	78	10	4
	Passenger Vehicles	2	1.3	2	0.5	8	7	11	3
	TRUs On-site	1	10	0.2	0.2	6	53	1	1
	TRUs Off-site	0.5	4	0.1	0.1	3	21	0.5	0.5
On-site Equipment	Emergency Engines[4]	0.03	0.5	0.04	0.04	0.2	3	0.2	0.2
	Yard Trucks[5]	0.02	1	0.1	0.03	0.1	4	0.6	0.2
	Forklifts[5]	0.3	2	0.1	0.1	1	12	0.5	0.4
Total Emissions[6]		**11**	**33**	4	2	**61**	**180**	24	9
Threshold of Significance		10	10	15	10	54	54	82	54

Notes:

[1] Emissions in tons per year were converted to average pounds per day assuming 365 days of activity per year.

[2] Architectural coating, consumer product, and landscaping emissions for cold operations were calculated using CalEEMod 2022.1. CalEEMod default usage rates were used for all categories with the exception of architectural coating which assumes no interior painting based on information from the Project Applicant.

[3] Emissions from trucks and passenger vehicles were calculated using CalEEMod methodology, EMFAC2021 emission factors, and trip data provided in the Project's transportation analysis.

[4] Emergency engine emissions calculations are shown in Table 4-15.

[5] On-site equipment includes yard trucks and forklifts. These emissions were calculated using ARB and EMFAC emission factors.

[6] Unmitigated cold storage scenario emissions in exceedance the applicable threshold of significance are shown in **bold**.

Abbreviations:

ARB - California Air Resources Board
CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pound
NOx - nitrogen oxides
PM_{10} - PM less than 10 microns in aerodynamic diameter
$PM_{2.5}$ - PM matter less than 2.5 microns in aerodynamic diameter
ROG - reactive organic gases
TRU - transportation refrigeration unit
yr - year

References:

California Emissions Estimator Model (CalEEMod). 2022.1. CAPCOA. 2022. Available online at: http://www.caleemod.com

Table 4-24
Mitigated Emission Factors for Operational Trucks Equipped with 2014 or Newer Engines
Suisun Logistics Center
Suisun, California

Fleet Type	Calendar Year	CAP Emission Factors																		
		ROG						NO_x			PM_{10}					$PM_{2.5}$				
		RUNEX	RUNLOSS	STREX	IDLEX	DIURN	HOTSOAK	RUNEX	STREX	IDLEX	RUNEX	PMTW	PMBW	STREX	IDLEX	RUNEX	PMTW	PMBW	STREX	IDLEX
		g/mile		g/trip				g/mile	g/trip		g/mile			g/trip		g/mile			g/trip	
MY 2014+ Trucks	2026	0.011	--	--	0.37	--	--	1.3	3.0	4.2	0.026	0.036	0.077	--	0.0016	0.025	0.0089	0.027	--	0.0015

Notes:
[1.] Mitigated trucks will be equipped with 2014 or newer engines. Mitigated trucks are equivalent to diesel HHDT emission factors from model years 2014 to 2026 using EMFAC2021 v1.0.2 for Solano (SF) sub-area and calendar year 2026.

Abbreviations:
MY - model year
ROG - Reactive organic gases
NO_x - Nitrogen oxides
PM_{10} - Particulate matter less than 10 microns in diameter
$PM_{2.5}$ - Particulate matter less than 2.5 microns in diameter
RUNEX - Running exhaust emissions
RUNLOSS - Evaporative losses
STREX - Start exhaust tailpipe emissions
IDLEX - Idle exhaust emissions
HHDT - heavy-heavy duty trucks
DIURN - Diurnal Evaporative Hydrocarbon Emissions
HOTSOAK - Hot soak evaporative hydrocarbon emissions
VMT - Vehicle miles traveled
CAP - Criteria Air Pollutants

References:
California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 4-25
Mitigated TRU Operations and Emissions Factors
Suisun Logistics Center
Suisun, California

TRU Usage

TRU Usage Estimates		Value
Percent of time TRU engine is running during TRU operation [--][1]		62.5%
Operational Days [days/year]		365
Average Truck Round Trip Length [miles/trip]		79.0
Average Truck Travel Speed [miles/hour]		50
TRU Equipped Truck Population[2] [# trucks]		237
On-Site Loading and Unloading	Daily loading and unloading time[3] [hrs/day/truck]	0.167
	Annual loading and unloading time[3] [hrs/year]	14,418
	Daily On-Site TRU Usage[1,3] [hrs/day]	0.10
	Annual On-Site TRU Usage[1,3] [hrs/year]	9,011
Travel	Daily Travel Time[3] [hrs/day/truck]	1.6
	Annual Travel Time[3] [hrs/year]	136,678
	Daily Off-Site TRU Usage[1,3] [hrs/day]	1.0
	Annual Off-Site TRU Usage[1,3] [hrs/year]	85,424

TRU Emission Factors

Source	Year[4]	Model Year[5]	Fuel	Emission Factor (g/hr)[6]			
				ROG	NO_X	PM_{10}	$PM_{2.5}$
TRU Aggregate	2026	ALL	Diesel	5.0	40.6	0.95	0.88

Notes:

1. According to Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units, TRU engines are generally running about 62.5% of time that a TRU unit is turned on.
2. The TRU truck population was assumed to equal to the number of round trips per day rounded up, or 237 trucks, assuming 100% of trucks in the cold storage scenario will be equipped with TRUs.
3. Approximate TRU idling usage under the mitigated scenario represents 5 minutes of operations during plugging in and plugging out. The TRU is assumed to be plugged in to electric outlets for the rest of the docking time of trucks. Truck travel was approximated assuming an average travel speed of 50 miles per hour and an average round-trip distance of 71.8 miles, assuming each Truck equipped with a TRU completes one round trip per day.
4. Emissions from TRUs decrease over time, but the earliest possible year was chosen to calculate criteria air pollutant emissions from TRUs.
5. Emission factors based on default model year composition for TRUs.
6. Emission factors aggregated based on OFFROAD2021 for Transportation Refrigeration Unit vehicle classes for Solano (SF) sub-area in 2026. TRU vehicle classes include Instate Gensets, Instate Trailers, Instate Trucks, Out-Of-State Gensets, and Out-Of-State Trailers. Emission factors were calculated by dividing the total TRU emissions by total TRU operation.

Abbreviations:

ARB - [California] Air Resources Board
g - gram
CO_2 - Carbon dioxide
hr - hour
mi - mile
NO_X - oxides of nitrogen
ROG - reactive organic gases
TRU - transportation refrigeration unit
yr - year

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inventory/.

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Table 4-26
Mitigated Criteria Air Pollutants Emissions for the Dry Storage Scenario
Suisun Logistics Center
Suisun, California

Source Category	Source Sub-Category	Project CAP Emissions							
		(tons/yr)				(lb/day)[1]			
		ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area	Architectural Coating[2]	0.05	--	--	--	0.3	--	--	--
	Consumer Products[2]	6	--	--	--	31	--	--	--
	Landscaping[2]	--	--	--	--	--	--	--	--
Mobile[3]	Trucks	0.2	11	2	0.6	0.8	61	10	4
	Passenger Vehicles	2	1.3	2	0.5	8	7	11	3
On-site Equipment	Emergency Engines[4]	0.03	0.5	0.04	0.04	0.2	3	0.2	0.2
	Yard Trucks[5]	0.02	0.7	0.1	0.03	0.09	4	0.6	0.2
	Forklifts[5]	--	--	--	--	--	--	--	--
Total Emissions[6]		7	**14**	4	1	41	**75**	22	7
Threshold of Significance		10	10	15	10	54	54	82	54

Notes:

[1] Emissions in tons per year were converted to average pounds per day assuming 365 days of activity per year.

[2] Architectural coating, consumer product, and landscaping emissions for dry operations were calculated using CalEEMod 2022.1. Architectural coating emissions assume no interior painting based on information from the Project Applicant and "Super-Compliant" outdoor paint with a VOC content of 10 g/l, as defined by South Coast AQMD. Consumer product emissions were calculated using a refined emissions factor as shown in Table 4-14. Landscaping emissions are zero because the Project will use electric landscaping equipment. Natural gas infrastructure will not be installed meaning that CAP emissions from this source are not considered in this scenario.

[3] Emissions from trucks and passenger vehicles were calculated using CalEEMod methodology, EMFAC2021 emission factors, and trip data provided in the Project's transportation analysis.

[4] Emergency engine emissions were calculated using ARB emission factors for diesel emergency engines, as shown in Table 4-15.

[5] On-site equipment include yard goats and idling trucks. These emissions were calculated using ARB and EMFAC emission factors.

[6] Mitigated dry storage scenario emissions in exceedance the applicable threshold of significance are shown in **bold**.

Abbreviations:

ARB - California Air Resources Board
CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pound
NOx - nitrogen oxides
PM_{10} - PM less than 10 microns in aerodynamic diameter
$PM_{2.5}$ - PM matter less than 2.5 microns in aerodynamic diameter
ROG - reactive organic gases
yr - year
AQMD - Air Quality Management District

References:

California Emissions Estimator Model (CalEEMod). 2022.1. CAPCOA. 2022. Available online at: http://www.caleemod.com

South Coast Air Quality Management District (AQMD). "Super-Compliant Architectural Coatings." Accessed Sep 2023. Available online at https://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings

Table 4-27
Mitigated Criteria Air Pollutants Emissions for the Cold Storage Scenario
Suisun Logistics Center
Suisun, California

Source Category	Source Sub-Category	Project CAP Emissions (tons/yr)				Project CAP Emissions (lb/day)[1]			
		ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area	Architectural Coating[2]	0.05	--	--	--	0.3	--	--	--
	Consumer Products[2]	6	--	--	--	31	--	--	--
	Landscaping[2]	--	--	--	--	--	--	--	--
Mobile[3]	Trucks	0.2	11	2	0.6	0.8	61	10	4
	Passenger Vehicles	2	1.3	2	0.5	8	7	11	3
	TRUs On-site	0.05	0.4	0.009	0.009	0.3	2	0.05	0.05
	TRUs Off-site	0.5	4	0.09	0.08	2.6	21	0.5	0.5
On-site Equipment	Emergency Engines[4]	0.03	0.5	0.04	0.04	0.2	3	0.2	0.2
	Yard Trucks[5]	0.02	0.7	0.1	0.03	0.09	4	0.6	0.2
	Forklifts[5]	--	--	--	--	--	--	--	--
Total Emissions[6]		8	**18**	4	1	44	**98**	22	7
Threshold of Significance		10	10	15	10	54	54	82	54

Notes:

[1] Emissions in tons per year were converted to pounds per day assuming 365 days of activity per year.

[2] Architectural coating, consumer product, and landscaping emissions for cold operations were calculated using CalEEMod 2022.1. Architectural coating emissions assume no interior painting based on information from the Project Applicant and "Super-Compliant" outdoor paint with a VOC content of 10 g/l, as defined by South Coast AQMD. Consumer product emissions were calculated using a refined emissions factor as shown in Table 4-14. Landscaping emissions are zero because the Project will use electric landscaping equipment. Natural gas infrastructure will not be installed meaning that CAP emissions from this source are not considered in this scenario.

[3] Emissions from trucks and passenger vehicles were calculated using CalEEMod methodology, EMFAC2021 emission factors, and trip data provided in the Project's transportation analysis.

[4] Emergency engine emissions were calculated using ARB emission factors for diesel emergency engines, as shown in Table 4-15.

[5] On-site equipment includes TRUs, yard goats, and idling trucks. These emissions were calculated using ARB and EMFAC emission factors.

[6] Mitigated cold storage scenario emissions in exceedance the applicable threshold of significance are shown in **bold**.

Abbreviations:

ARB - California Air Resources Board
CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutant
lb - pound
NOx - nitrogen oxides
PM_{10} - PM less than 10 microns in aerodynamic diameter
$PM_{2.5}$ - PM matter less than 2.5 microns in aerodynamic diameter
ROG - reactive organic gases
TRU - transportation refrigeration unit
yr - year
AQMD - Air Quality Management District
VOC - volatile organic compound

References:

California Emissions Estimator Model (CalEEMod). 2022.1. CAPCOA. 2022. Available online at: http://www.caleemod.com

South Coast Air Quality Management District (AQMD). "Super-Compliant Architectural Coatings." Accessed Sep 2023. Available online at https://www.aqmd.gov/home/rules-compliance/compliance/vocs/architectural-coatings/super-compliant-coatings

Table 5-1
TOG Speciation of Gasoline Vehicle Exhaust
Suisun Logistics Center
Suisun, California

TAC	CAS	Weighted Fraction of Emissions by Pollutant[1]	
		TOG	
		Evaporative	Exhaust
Ethylbenzene	100414	0.0012	0.011
Toluene	108883	0.017	0.058
Hexane	110543	0.015	0.016
Xylenes	1330207	0.0058	0.048
Benzene	71432	0.0036	0.025
Styrene	100425	--	0.0012
1,3-Butadiene	106990	--	0.0055
Acrolein	107028	--	0.0013
Propylene	115071	--	0.031
Formaldehyde	50000	--	0.016
Methanol	67561	--	0.0012
Acetaldehyde	75070	--	0.0028
Methyl Ethyl Ketone	78933	--	0.0002
Naphthalene	91203	--	0.0005

Notes:

1. Speciation profiles are taken from the BAAQMD's guidance on Recommended Methods for Screening and Modeling Local Risks and Hazards. Speciation profiles for Gasoline Exhaust are located in Table 14 and Gasoline Evaporative are located in Table 15 of the BAAQMD's guidance.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CAS - chemical abstract services
TAC - toxic air contaminant
TOG - total organic gases

Reference:

BAAQMD. 2011. Recommended Methods for Screening and Modeling Local Risks and Hazards. Table 14 and Table 15. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/baaqmd-modeling-approach.pdf

Table 5-2
AERMOD Source Parameters
Suisun Logistics Center
Suisun, CA

Construction Sources

Source	Number of Sources[1,2]	Source Type	Source Dimension[2]	Release Height[3]	Initial Vertical Dimension[4]	Initial Lateral Dimension[5]	Hours of Operation[6]
			m	m	m	m	
Construction Equipment Exhaust	1	Area	Parcel Area	5.00	1.16	--	7am-8pm
Construction Fugitive Dust	1	Area	Parcel Area	0.00	1.00	--	7am-8pm
On-Road Construction Vehicles	Variable	Volume	Variable	3.40	3.16	Variable	7am-8pm

Operational Sources

Source[7]	Number of Sources	Source Type	Stack Height	Stack Diameter	Exit Temperature	Exit Velocity	Hours of Operation
			m	m	K	m/s	
Generators	6	Point	uilding Height + 3.6	0.183	740	45.3	24 hour
Fire Pumps	6	Point	uilding Height + 3.6	0.183	740	45.3	24 hour
Transportation Refrigeration Units	51	Point	3.962	0.044	501	49.0	24 hour

Source	Number of Sources	Source Type	Source Dimension	Release Height[3]	Initial Vertical Dimension[4]	Initial Lateral Dimension[5]	Hours of Operation
			m	m	m	m	
On-Road Worker Vehicles	Variable	Volume	Variable	1.30	1.21	Variable	24 hour
On-Road Haul Trucks	Variable	Volume	Variable	3.40	3.16	Variable	24 hour
Yard Trucks	51	Volume	5.89	3.40	3.16	2.74	24 hour
Forklifts	51	Volume	5.89	0.00	1.00	2.74	24 hour

Notes

1. Construction off-road equipment and on-site fugitive dust is modeled as an area source covering the parcel under construction. The number of sources is based on the number of construction phases.
2. The number of on-road sources is based on the geometry of the truck or traffic routes. Source dimension of on-road vehicles vary and based on the width of the road/lane+ 6 meters, according to Appendix E of BAAQMD 2022 CEQA Guidance.
3. Release height of construction equipment exhaust is 5 meters, consistent with guidance from SCAQMD for construction sources. Release of construction fugitive dust is assumed to be at ground level. Release height for on-road trucks and vehicles is based on Appendix E of BAAQMD 2022 CEQA Guidance.
4. Based on Appendix E of BAAQMD 2022 CEQA Guidance, initial vertical dimensions for elevated release area sources (e.g., construction equipment exhaust) are determined by dividing the release height by 4.3. Initial vertical dimension for on-site fugitive dust is based on the guidance from SCAQMD for construction sources. For on-road trucks and vehicles, initial vertical dimension is based on Appendix E of BAAQMD 2022 CEQA Guidelines.
5. According to BAAQMD 2022 CEQA Guidelines, for a line source modeled as adjacent volume sources, the initial lateral dimension is the width of plume divided by 2.15. Width of plume is road/lane width + 6 meters.
6. No construction equipment shall be operated nor any outdoor construction, non-residential projects or repair work shall be permitted within 600 feet from any occupied residence except during the hours of 7:00 a.m. to 8:00 p.m., Monday through Friday, and 8:00 a.m. to 8:00 p.m., on Saturday and Sunday.
7. Source parameters for generators and fire pumps were obtained from Table 10 of Appendix E of the BAAQMD 2022 CEQA Guidelines. Source parameters for transportation refrigeration units were obtained from Section 2.6 of the SJVAPCD Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document. There is one generator point source for every generator and fire pump included in the Project.

Abbreviations:

m - meter
m/s - meters per second
K - Kelvin
BAAQMD - Bay Area Air Quality Management District
OEHHA - Office of Environmental Health Hazard Assessment
SJVAPCD - San Joaquin Valley Air Pollution Control District

References:

BAAQMD. 2023. 2022 CEQA Guidelines. April. Available at https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022

SCAQMD. 2008. Final Localized Significance Threshold Methodology. July. Available at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

SJVUAPCD. 2015. Update to District's Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document. May. Available at: https://www.valleyair.org/busind/pto/staff-report-5-28-15.pdf

Table 5-3
Exposure Parameters by Receptor Type and Age Group
Suisun Logistics Center
Suisun, CA

Receptor Type	Receptor Age Group	Exposure Factors						
		Daily Breathing Rate (DBR)[1,2]	Annual Exposure Duration (ED)[3]	Fraction of Time at Home (FAH)[4]	Exposure Frequency (EF)[5]	Averaging Time (AT)	Intake Factor, Inhalation (IF_{inh})[6]	Age Sensitivity Factor (ASF)[7]
		(L/kg-day)	(years)	(unitless)	(days/year)	(days)	(m^3/kg-day)	(unitless)
Resident	3rd trimester	361	1.0	1	350	25,550	4.9E-03	10
	0-2 years	1,090	1.0	1			0.01	10
	2-16 years	572	1.0	1			7.8E-03	3
	>16 years	261	1.0	0.73			2.6E-03	1
Recreational	0-2 years	300	1.0	--	350		4.1E-03	10
	2-16 years	130	1.0	--			1.8E-03	3
	>16 years	60	1.0	--			8.2E-04	1
Daycare Child	0-2 years	1,090	1.0	--	350		0.01	10
	2-16 years	520	1.0	--	350		7.1E-03	3
Preschool Child	2-16 years	520	1.0	--	250		5.1E-03	3
Elementary School Child	2-16 years	520	1.0	--	180		3.7E-03	3
Worker	16-70 years	230	1.0	--	250		2.3E-03	1

Notes:

1 Daily breathing rates for residential, daycare children, preschool children, elementary school children and worker receptor types reflect default breathing rates from Appendix E of BAAQMD 2022 CEQA Guidelines.

2 Daily breathing rates for recreational receptors assume 95th percentile 8-hour daily breathing rates for Moderate Intensity Activities from OEHHA 2015 Guidance, scaled to 2 hours per day.

3 Annual exposure duration represents one full year. The exposure duration for all years is 1, as the health risk assessment is based on annual emissions. Actual exposure duration for each age group is described below:

30 years for residential and recreational receptors
7 years for a daycare child
3 years for a preschool child
7 years for an elementary school child
25 years for worker receptors

4 Fraction of time spent at home is conservatively assumed to be 1 (i.e., 24 hours/day) for age groups from the third trimester to less than 16 years old based on the recommendation from BAAQMD. The fraction of time at home for adults age 16-30 is 0.73 and reflects the default value from BAAQMD guidance.

5 Exposure frequency was determined as follows:
Resident: reflects default residential exposure frequency from Appendix E of BAAQMD 2022 CEQA Guidelines.
Recreational: Recereational receptors are anticipated to be exposed for 180 days per year which equates to approximately 2 hours of exposure every day.
Daycare, Preschool, and Elementary School: BAAQMD guidance indicates the exposure frequency should be based on the maximum number of days children will be present at the school or daycare, including classroom instruction, summer schools/camps, afterschool programs, and athletic programs. For daycare children, this analysis assumes the child will go to daycare as often as residents are at their residences. For preschool children, this analysis follows default worker exposure frequency, which is based on the assumption that a child is at pre-school when the parents are at work (250 days/year). Elementary school children exposure duration reflects the default number of school days per year.

6 The Intake Factor for Inhalation was calculated according to the equation:

$$IF_{inh} = (DBR \times FAH \times EF \times ED \times 0.001\ m^3/L) / AT$$

7 The age sensitive factors refelct default values from Appendix E of BAAQMD 2022 CEQA Guidelines and 2015 OEHHA Guidance.

Abbreviations:

ASF - age sensitivity factors
AT - averaging time
BAAQMD - Bay Area Air Quality Management District
DBR - daily breathing rate
ED - exposure duration
EF - exposure frequency
FAH - fraction of time at home
IF_{inh} - intake factor
kg - kilogram
L - liter
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment

References:

BAAQMD. 2023. CEQA Air Quality Guidelines. Appendix E: Recommended Methods For Screening and Modeling Local Risks and Hazards. August 28. Available online at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

Cal/EPA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 5-4
Toxicity Values
Suisun Logistics Center
Suisun, California

TAC[1]	CAS Number	Inhalation Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Chronic Inhalation $(\mu g/m^3)$	Source(s)
1,3-Butadiene	106-99-0	0.60	2.0	Gasoline Vehicles
Acetaldehyde	75-07-0	0.010	140	Gasoline Vehicles
Acrolein	107-02-8	--	0.35	Gasoline Vehicles
Benzene	71-43-2	0.10	3.0	Gasoline Vehicles
Ethylbenzene	100-41-4	0.0087	2,000	Gasoline Vehicles
Formaldehyde	50-00-0	0.021	9.0	Gasoline Vehicles
Hexane	110-54-3	--	7,000	Gasoline Vehicles
Methanol	67-56-1	--	4,000	Gasoline Vehicles
Methyl Ethyl Ketone	78-93-3	--	--	Gasoline Vehicles
Naphthalene	91-20-3	0.12	9.0	Gasoline Vehicles
Propylene	115-07-1	--	3,000	Gasoline Vehicles
Styrene	100-42-5	--	900	Gasoline Vehicles
Toluene	108-88-3	--	420	Gasoline Vehicles
Xylenes	1330-20-7	700	--	Gasoline Vehicles
DPM	9901	1.1	5.0	Diesel Vehicles and Engines

Notes:
1. Toxicity values for TACs are based on the OEHHA Toxicity Criteria of Chemicals Database.

Abbreviations:

TAC - toxic air contaminant
CAS - Chemical Abstracts Service
m - meter
d - day
mg - milligram
kg - kilogram
µg - microgram
DPM - diesel particulate matter

References:

Cal/EPA. 2022. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. December. http://www.arb.ca.gov/toxics/healthval/contable.pdf

Table 5-5
Unmitigated Maximum Project Excess Lifetime Cancer Risk, Chronic HI and PM2.5
Suisun Logistics Center
Suisun, CA

Source Category	Source	Exposure Starting at Project Construction Followed by Operation			Exposure Starting at Project Operation		
		Excess Lifetime Cancer Risk[1]	Chronic HI[2,3]	$PM_{2.5}$ Concentration[3]	Excess Lifetime Cancer Risk[1]	Chronic HI[2,3]	$PM_{2.5}$ Concentration[3]
		in a million	unitless ratio	$\mu g/m^3$	in a million	unitless ratio	$\mu g/m^3$
Construction	On-Site Construction Equipment	3.0	--	--	--	--	--
	On-Road Diesel Vehicles	0.08	--	--	--	--	--
	On-Road Gasoline Construction Worker Vehicles	0.0025	--	--	--	--	--
Operation	On-Site Stationary Sources	1.6	0.0004	0.0022	2.2	0.0004	0.0022
	On-site Mobile Equipment	8	0.0051	0.031	11	0.0051	0.031
	Mobile - Trucks	0.9	0.0010	0.026	1.2	0.0010	0.026
	Mobile - TRUs	18	0.009	0.041	26	0.009	0.041
	Mobile - Gasoline Worker Vehicles	0.042	4.7E-04	0.14	0.06	4.7E-04	0.14
Unmitigated Total[4]		**31**	0.016	0.24	**40**	0.016	0.24
Significance Threshold		10	1.0	0.30	10	1.0	0.30
Exceeds thresholds?		Yes	No	No	Yes	No	No
Receptor Type		Residential	Worker	Worker	Residential	Worker	Worker
Year[5]		--	2027+	2027+	--	All	All
UTMx		589280	588740	588740	589280	588740	588740
UTMy		4233528	4233348	4233348	4233528	4233348	4233348

Note:

1. Excess lifetime cancer risks were estimated using the following equation:

$Risk_{inh} = \Sigma C_i \times CF \times IF_{inh} \times CPF_i \times ASF$

Where:

$Risk_{inh}$ = Cancer Risk for the Inhalation Pathway (unitless)
C_i = Annual Average Air Concentration for Chemical "i" ug/m^3
CF = Conversion Factor (mg/ug)
IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)
CPF_i = Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$
ASF = Age Sensitivity Factor (unitless)

2. Chronic HI for each receptor was estimated using the following equation:

$HI_{inh} = \Sigma C_i / cREL$

Where:

HI_{inh} = Chronic HI for the Inhalation Pathway (unitless)
C_i = Annual Average Air Concentration for Chemical "i" (ug/m^3)
cREL = Chronic Reference Exposure Level (ug/m^3)

3. PM2.5 concentration and Non-Cancer Hazard Index values represent annual values.
4. Project's health risk impacts exceeding the applicable threshold of significance are shown in **bold**.
5. For the Project Construction + Operations results, "2027+" represents the annual risk or concentration value for all years after construction, which occurs in 2025 and 2026. Similarly, the Project Operations health risk results begin in 2027; therefore "All" also represents all years after construction.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
HI - Hazard Index
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment
PM - particulate matter
µg - microgram
TRU - transportation refrigeration unit
UTMx, UTMy - Universal Transverse Mercator coordinates

Reference:

BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines
OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 5-6
Mitigated Maximum Project Excess Lifetime Cancer Risk, Chronic HI and PM2.5
Suisun Logistics Center
Suisun, CA

Source Category	Source	Exposure Starting at Project Construction Followed by Operation			Exposure Starting at Project Operation		
		Excess Lifetime Cancer Risk[1]	Chronic HI[2,3]	$PM_{2.5}$ Concentration[3]	Excess Lifetime Cancer Risk[1]	Chronic HI[2,3]	$PM_{2.5}$ Concentration[3]
		in a million	unitless ratio	$\mu g/m^3$	in a million	unitless ratio	$\mu g/m^3$
Construction	On-Site Construction Equipment	0.7	--	0.012	--	--	--
	On-Road Diesel Vehicles	0.08	--	0.15	--	--	--
	On-Road Gasoline Construction Worker Vehicles	0.0025	--	0.042	--	--	--
Operation	On-Site Stationary Sources	0.07	2.0E-05	--	2.29	4.4E-04	1.8E-03
	On-site Mobile Equipment	0.60	3.8E-04	--	0.84	3.8E-04	0.003
	Mobile - Trucks	0.8	0.0010	--	1.2	0.0010	0.018
	Mobile - TRUs	1.5	0.0012	--	2.1	0.0012	0.0046
	Mobile - Gasoline Worker Vehicles	0.042	4.7E-04	--	0.060	4.7E-04	0.064
Unmitigated Total[4]		3.8	0.0030	0.20	6.5	0.0034	0.091
Significance Threshold		10	1.0	0.30	10	1.0	0.30
Exceeds thresholds?		No	No	No	No	No	No
Receptor Type		Residential	Worker	Worker	Residential	Worker	Recreational
Year[5]		--	2027+	2025	--	All	All
UTMx		589300	588740	588660	589320	588740	589760
UTMy		4233528	4233348	4233348	4233528	4233348	4233328

Note:

1. Excess lifetime cancer risks were estimated using the following equation:

$Risk_{inh} = \Sigma C_i \times CF \times IF_{inh} \times CPF_i \times ASF$

Where:

$Risk_{inh}$ = Cancer Risk for the Inhalation Pathway (unitless)
C_i = Annual Average Air Concentration for Chemical "i" ug/m^3
CF = Conversion Factor (mg/ug)
IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)
CPF_i = Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$
ASF = Age Sensitivity Factor (unitless)

2. Chronic HI for each receptor was estimated using the following equation:

$HI_{inh} = \Sigma C_i / cREL$

Where:

HI_{inh} = Chronic HI for the Inhalation Pathway (unitless)
C_i = Annual Average Air Concentration for Chemical "i" (ug/m^3)
cREL = Chronic Reference Exposure Level (ug/m^3)

3. PM2.5 concentration and Non-Cancer Hazard Index values represent annual values.
4. Project's health risk impacts exceeding the applicable threshold of significance are shown in **bold**.
5. For the Project Construction + Operations results, "2027+" represents the annual risk or concentration value for all years after construction, which occurs in 2025 and 2026. Similarly, the Project Operations health risk results begin in 2027; therefore "All" also represents all years after construction.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
HI - Hazard Index
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment
PM - particulate matter
µg - microgram
TRU - transportation refrigeration unit
UTMx, UTMy - Universal Transverse Mercator coordinates

Reference:

BAAQMD. 2023. California Environmental Quality Act Air Quality Guidelines. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 7-1
Health Risk Impacts from Stationary Sources for Cumulative Analysis
Suisun Logistics Center
Suisun, CA

BAAQMD Facility Number[1]	Facility Name[1]	Facility Address	Source type (used for distance multiplier)[1]	Location[1,2]		Health Risk Screening Values Adjusted by BAAQMD Screening Tool[3,4]		
						Offsite Resident	Offsite Resident	Offsite Resident
				Latitude	Longitude	Lifetime Excess Cancer Risk	Noncancer Chronic HI	$PM_{2.5}$ Concentration
				(degrees)		(in a million)		(μg/m³)
110717	Bonfare Market #37	1500 Peterson Road	Gas Dispensing Facility	38.243	-121.987	0.46	0.0020	0
12848	David Grant Medical Center	Travis Air Force Base	No Data	38.270	-121.964	27	0.049	0.14
105493	BX Service Station (BLDG 171 Travis AFB)		Gas Dispensing Facility	38.272	-121.942	1.3	0.0055	0
0	Travis AFB		No Data	38.267	-121.942	7.6	0.018	0.010
104667	Travis AFB (BLDG 170 S Gas Station)		Gas Dispensing Facility	38.272	-121.942	0.59	0.0026	0
0	Travis AFB		Generators	38.265	-121.933	0.72	0.0012	8.8E-04
0	Travis AFB		Generators	38.266	-121.932	0.67	0.0012	8.0E-04
0	Travis AFB		Generators	38.257	-121.955	0.63	8.0E-04	8.0E-04
0	Travis AFB		Generators	38.274	-121.929	0.54	0.0011	6.8E-04
0	Travis AFB		Generators	38.265	-121.935	0.50	8.0E-04	6.0E-04
112522	Chevron		Gas Dispensing Facility	38.273	-121.959	0.18	7.8E-04	0
0	Travis AFB		Generators	38.269	-121.931	0.40	6.4E-04	4.8E-04
0	Travis AFB		Generators	38.276	-121.931	0.40	0.0011	4.8E-04
0	Travis AFB		Generators	38.270	-121.946	0.39	8.8E-04	4.8E-04
0	Travis AFB		Generators	38.266	-121.933	0.32	4.8E-04	4.0E-04
0	Travis AFB		Generators	38.265	-121.965	0.31	4.8E-04	3.6E-04
0	Travis AFB		Generators	38.265	-121.965	0.31	4.8E-04	3.6E-04
0	Travis AFB		Gas Dispensing Facility	38.267	-121.942	0.10	4.3E-04	0
0	Travis AFB		Generators	38.251	-121.925	0.27	9.2E-04	3.2E-04
0	Travis AFB		Generators	38.258	-121.925	0.23	3.2E-04	2.8E-04
0	Travis AFB		Generators	38.267	-121.947	0.23	8.8E-04	2.8E-04
0	Travis AFB		Generators	38.267	-121.930	0.23	4.0E-04	2.8E-04
0	Travis AFB		Generators	38.256	-121.957	0.23	4.0E-04	2.8E-04
0	Travis AFB		Generators	38.266	-121.934	0.19	6.0E-04	2.4E-04
0	Travis AFB		Generators	38.257	-121.927	0.18	2.8E-04	2.0E-04
0	Travis AFB		Generators	38.259	-121.924	0.16	2.4E-04	2.0E-04
0	Travis AFB		Generators	38.258	-121.923	0.15	2.8E-04	2.0E-04
0	Travis AFB		Generators	38.265	-121.952	0.14	1.6E-04	1.6E-04
0	Travis AFB		Generators	38.259	-121.953	0.13	1.6E-04	1.6E-04
0	Travis AFB		Generators	38.265	-121.952	0.12	1.6E-04	1.6E-04
0	Travis AFB		Generators	38.270	-121.946	0.12	2.0E-04	1.6E-04
0	Travis AFB		Generators	38.274	-121.923	0.11	1.6E-04	1.2E-04
0	Travis AFB		Generators	38.269	-121.936	0.11	2.4E-04	1.2E-04
0	Travis AFB		Generators	38.272	-121.940	0.10	1.6E-04	1.2E-04
13548	Pacific Bell		Generators	38.273	-121.955	0.090	1.2E-04	1.2E-04
0	Travis AFB		Generators	38.258	-121.951	0.070	8.0E-05	8.0E-05
0	Travis AFB		Generators	38.258	-121.951	0.069	8.0E-05	8.0E-05
0	Travis AFB		Generators	38.259	-121.943	0.068	2.0E-04	8.0E-05
0	Travis AFB		Generators	38.258	-121.951	0.058	8.0E-05	8.0E-05
0	Travis AFB		Generators	38.250	-121.936	0.054	1.2E-04	8.0E-05
0	Travis AFB		Generators	38.253	-121.934	0.051	1.2E-04	8.0E-05
0	Travis AFB		Generators	38.266	-121.948	0.027	4.0E-05	4.0E-05
0	Travis AFB		Generators	38.254	-121.959	0.017	0	4.0E-05
0	Travis AFB		Generators	38.281	-121.904	0.017	4.0E-05	4.0E-05
0	Travis AFB		Generators	38.282	-121.941	0.014	4.0E-05	0
0	Travis AFB		Generators	38.263	-121.949	0.012	0	0
22208	City of Vallejo Water Division		No Data	38.277	-121.952	0.027	0	0
24406	California Water Service Company		Generators	38.266	-121.943	0.0026	0	0
4658	E B Stone & Son Inc		No Data	38.280	-121.938	0	0	0.36

Notes:

1. Facility information provided by the BAAQMD.
2. Locations are approximate for preliminary assessment of risk.
3. Health impacts estimated using BAAQMD Stationary Source Screening Analysis Tool. Risk values listed are maximum values, not expected values. Results have been adjusted by the BAAQMD-recommended distance multiplier, where relevant.
4. The risks from Travis Air Force Base have been included in this anlysis, despite being located further than 1,000 from the Project boundary. Attenuation factors at 1,000-foot distance provided by BAAQMD were selected to represent risk attenuation, whereas in reality, attenuation factors would be lower due to greater distances than 1,000 feet.

Abbreviations:

μg - microgram
BAAQMD - Bay Area Air Quality Management District
ft - feet
HI - hazard index
m - meter
m^3 - cubic meter
MEI - maximum exposed individual
$PM_{2.5}$ - fine particulate matter

References:

Bay Area Air Quality Management District (BAAQMD). 2020. Permitted Sources Risk and Hazards Map. June. Available at:
https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

Bay Area Air Quality Management District (BAAQMD). 2023. Health Risk Calculator Beta 5.0. March. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/tools/public-baaqmd-health-risk-calculator-beta-5-0-xlsx-xlsx.xlsx?rev=78c153babffa426ba9ca15a31776e035

Table 7-2
Cumulative Risks and Hazards
Suisun Logistics Center
Suisun, CA

Source	Lifetime Excess Cancer Risk (in a million)	Noncancer Chronic HI	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Stationary Sources within 1,000-foot of Project[1]	0.5	0.002	0.00
Stationary Sources at TAFB	45	0.092	0.52
Roadways[2]	1.1	0.014	0.13
Railways[2]	--	--	--
Mitigated Project Construction and Operation	6.5	0.0034	0.09
Total	**54**	**0.13**	**0.6**
Exceeds Threshold?	**NO**	**NO**	**NO**
Year	--	2027+	2025
UTMx	589300	588740	588660
UTMy	4233528	4233348	4233348
Receptor Type	Residential	Worker	Worker
Threshold	**100**	**10**	**0.8**

Notes:

1. Health impacts from Stationary Sources estimated using BAAQMD Stationary Source Screening Analysis Tool. Risk values listed are maximum values, not expected values. Results have been adjusted by the BAAQMD-recommended distance multiplier, where relevant.

2. Health risks from roadways and railways were determined using BAAQMD screening tools and are based on the maximum impact of a raster cell located on the identified sensitive receptors. No railway risk values are available at the MEI locations.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
HI - hazard index
$PM_{2.5}$ - particulate matter less than 2.5 microns
$\mu g/m^3$ - microgram per cubic meter
UTMx UTMy - Universal Transverse Mercator coordinates

References:

Bay Area Air Quality Management District (BAAQMD). 2023. Permitted Sources Risk and Hazards Map. June. Available at: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

Bay Area Air Quality Management District (BAAQMD). 2023. Mobile Source Screening Map. Available at: https://mtc.maps.arcgis.com/apps/instant/sidebar/index.html?appid=c5f9b1a40326409a89076bdc0d95e429

Table 8-1
Consistency with 2017 Clean Air Plan Control Measures
Suisun Logistics Center
Suisun, California

Sector	Applicable Measure Number	Applicable Measure Description	Project Consistency
Stationary Sources	SS21 and SS32	New Source Review for Toxics; Emergency Backup Generators	**Supporting.** In the event that stationary equipment is installed on-site, it is anticipated that the equipment would be small-quantity emitters and would reuiqre review by BAAQMD for permitting sources of air polultants, which would ensure consistency with this measure.
	SS25	Coatings, Solvents, Lubricants, Sealants and Adhesives	**Supporting.** The Project would limit architectural coating to building exteriors, and would apply super compliant low-VOC paint during Project construction.
	SS36	PM from Trackout	**Supporting.** The Project would comply with the BAAQMD's best management practices for fugitive dust emissions to prevent mud/dirt and other solid trackout from construction.
Transportation	TR2	Trip Reduction Programs	**Supporting.** As discussed in the Transportation Analysis, the Project will prepare a Transportation Demand Management (TDM) plan that include, but may not be limited to, bike facilities, vanpool programs, preferential parking, etc. The control measures of the Project presented in this report also requires heavy duty trucks accessing the Project site to use 2014 and newer model year engines, and use Tier 4 engines on construction equipment of 50 horsepower or greater ratings.
	TR8	Ridesharing, Last-Mile Connection	
	TR10	Bicycle and Pedestrian Access and Facilites	
	TR19	Medium and Heavy Duty Trucks	
	TR22	Construction, Freight and Farming Equipment	
Energy	EN1 and EN2	Decarbonize Electricity Production; Decrease Electricity Demand.	**Not applicable.** The Project is a private development and will use electricity from the existing grid. However, the Project will comply with the solar power generation requirements in the applicable Building Energy Efficiency Stanrds, at a minimum.
Green Buildings	BL1	Green Buildings	**Supporting.** The proposed buildings will be constructed with energy efficiency requirements consistent with the applicable CALGreen and Title 24 codes.
	BL2	Decarbonize Buildings	**Supporting.** The Project will be all-electric and will not include any natural gas infrastructure.
Agriculture	AG1 through AG 4	Agricultural Guidance and Leadership; Dairy Digesters; Enteric Fermentation; Livestock Waste.	**Not applicable.** The Project would not include any agricultural land uses.
Natural and Working Lands	NW1 through NW3	Carbon Sequestration in Rangelands; Urban Tree Planting; Carbon Sequestration in Wetlands	**Not applicable**. The Project is not located in an urban area. The Project does not include any changes to existing rangelands or wetlands.
Waste Management	WA4	Recycling and Waste Reduction	**Supporting.** SB 1383 requires individual cities and other jurisdictions to achieve 75% organic waste reduction goal by 2025. The Project's operations are subject to the local jurisdiction's requirements on waste diversion.
Water	WR2	Support Water Conservation	**Supporting.** The Project will install water-efficient interior plumbing fixtures, appliances, and equipment the proposed buildings to comply with the applicable CALGreen and Title 24 codes.

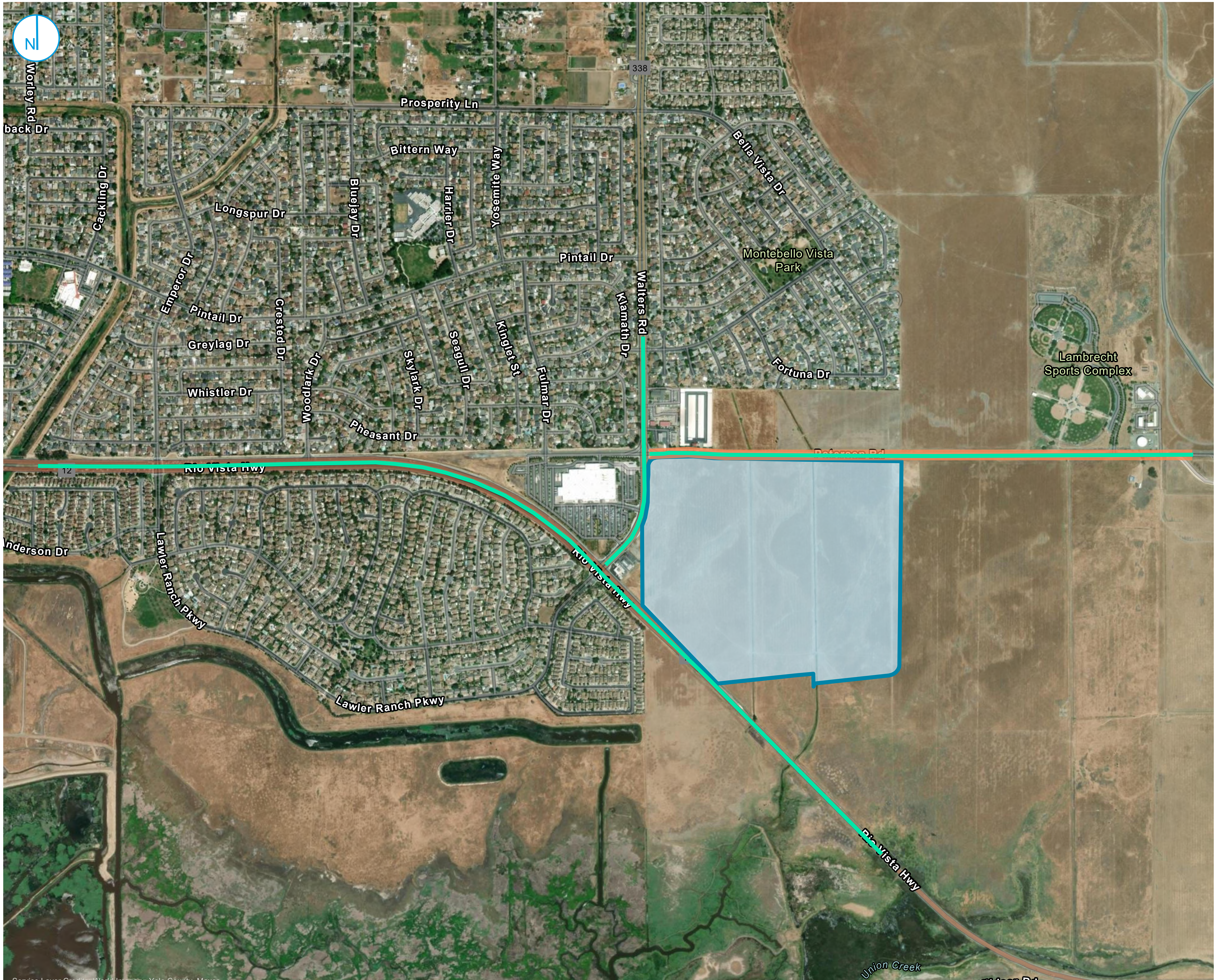
Table 8-1
Consistency with 2017 Clean Air Plan Control Measures
Suisun Logistics Center
Suisun, California

Super-GHG	SL1 through SL3	Short-Lived Climate Pollutants; Guidance for Local Planners; GHG Monitoring and Emissions Measurement Network.	**Supporting.** Althrough super-GHG control measures are directed towards landfills and farming activities and would be implemented by BAAQMD and/or local jurisdiction, the Project is subject to SB 1206, which prohibits the sale of hydrofluorocarbons, which has been in commercial refrigeration.

Sources:

BAAQMD. 2017. Spare the Air, Cool the Climate: Final 2017 Clean Air Plan. https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf. May, 2017.

FIGURES



Off-Road Construction Equipment Exhaust and Fugitive Dust

On-Road Construction Vehicles Exhaust and Fugitive Dust (Haul, Vendor, and Worker Trips)

Petersen Road Widening

0 1,250 2,500 Feet

MODELED CONSTRUCTION SOURCES

Suisun Logistics Center
Suisun, CA

FIGURE 01

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

PROJECT: 1690029367 | DATED: 12/11/2023 | DESIGNER: JBEAL

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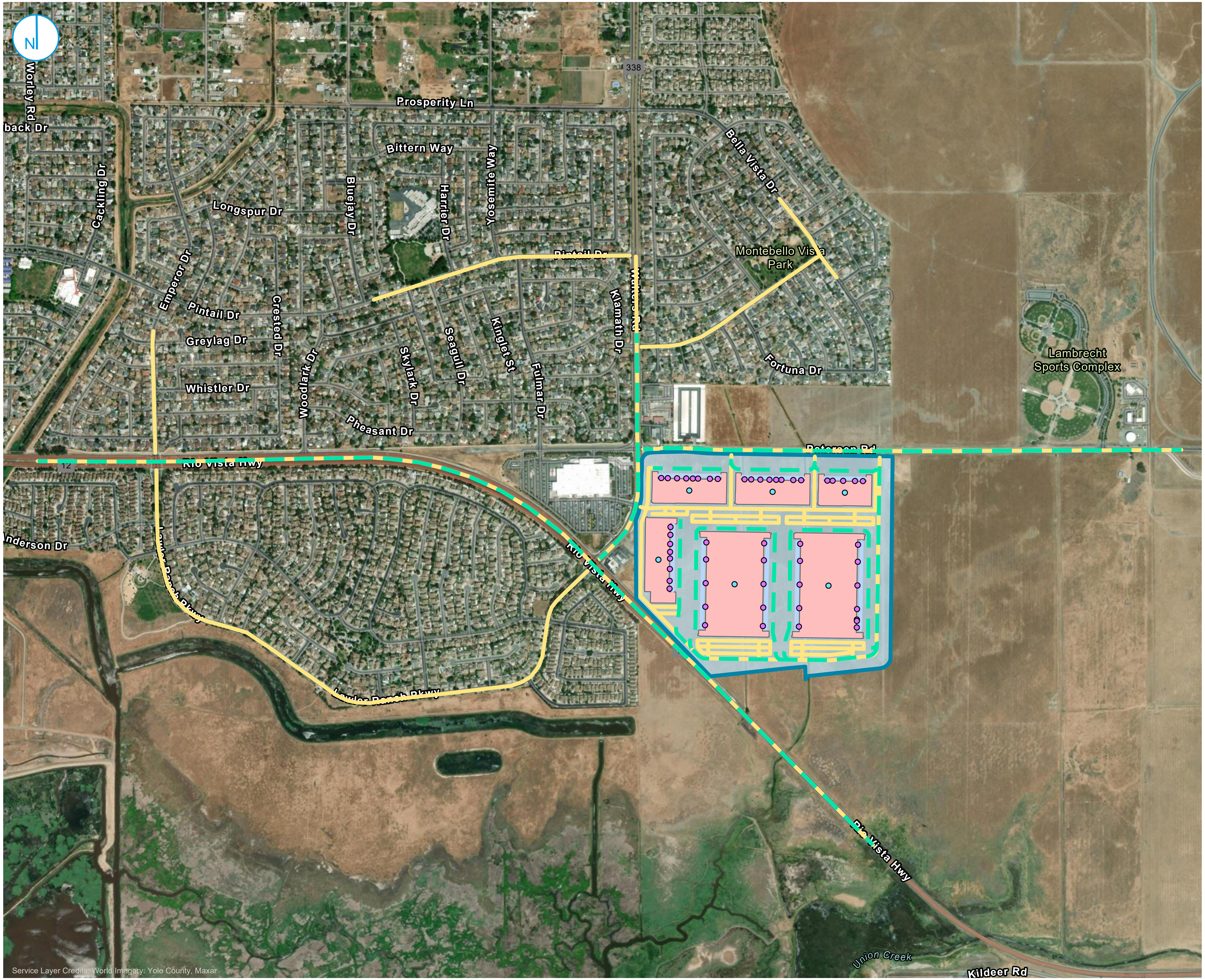

Project Site
Buildings Modeled for Building Downwash
Emergency Generators and Fire Pumps
Transportation Refrigeration Unit Idling
Yard Trucks, Fork Lifts
Worker Vehicle Routes
Truck Routes

0 1,250 2,500 Feet

MODELED OPERATIONAL SOURCES

Suisun Logistics Center
Suisun, CA

FIGURE 02

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

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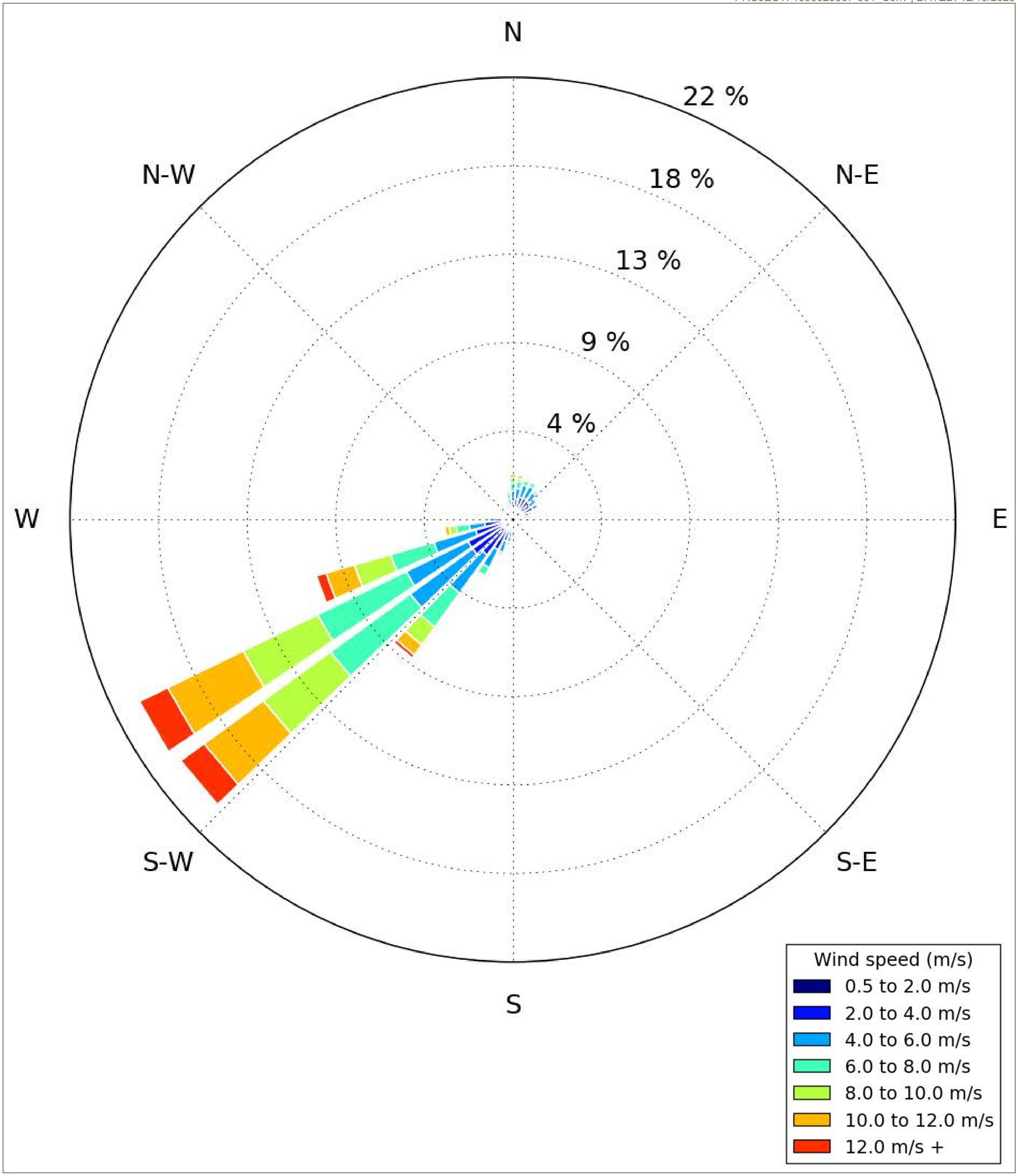
PROJECT: 1690029367 | DATED: 12/11/2023 | DESIGNER: JBEAL



WIND ROSE

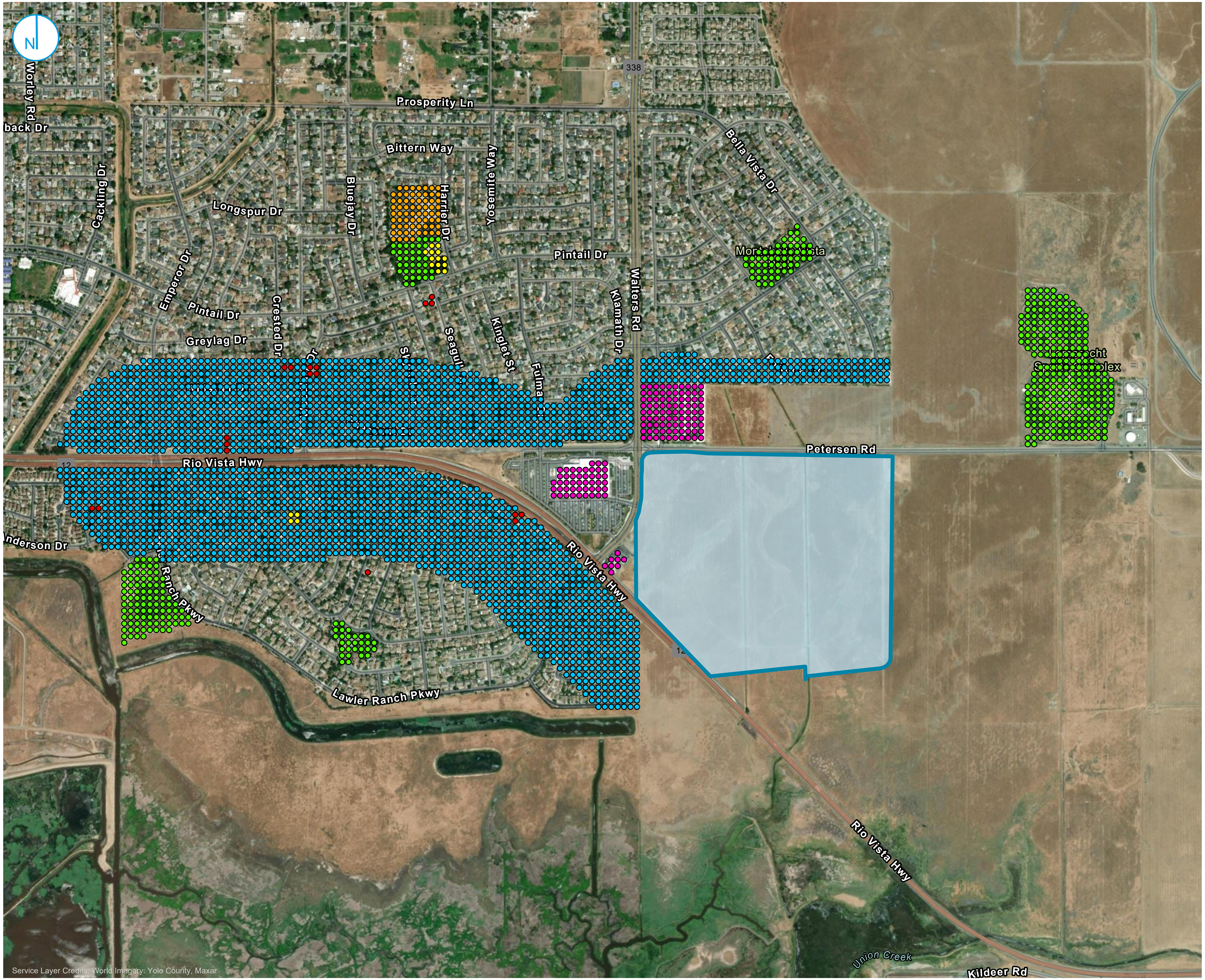
FIGURE 03

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

Suisun Logistics Center
Suisun, California

RAMBOLL

DRAFT - Privileged and Confidential - Attorney Work Product



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PROJECT: 1690029367 | DATED: 12/11/2023 | DESIGNER: JBEAL

Project Site

Receptor Type

- Daycare
- Elementary
- Preschool
- Recreational
- Residential
- Worker

0 1,250 2,500 Feet

SUISUN LOGISTICS CENTER
MODELED RECEPTORS

Suisun Logistics Center
Suisun, CA

FIGURE 04

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL

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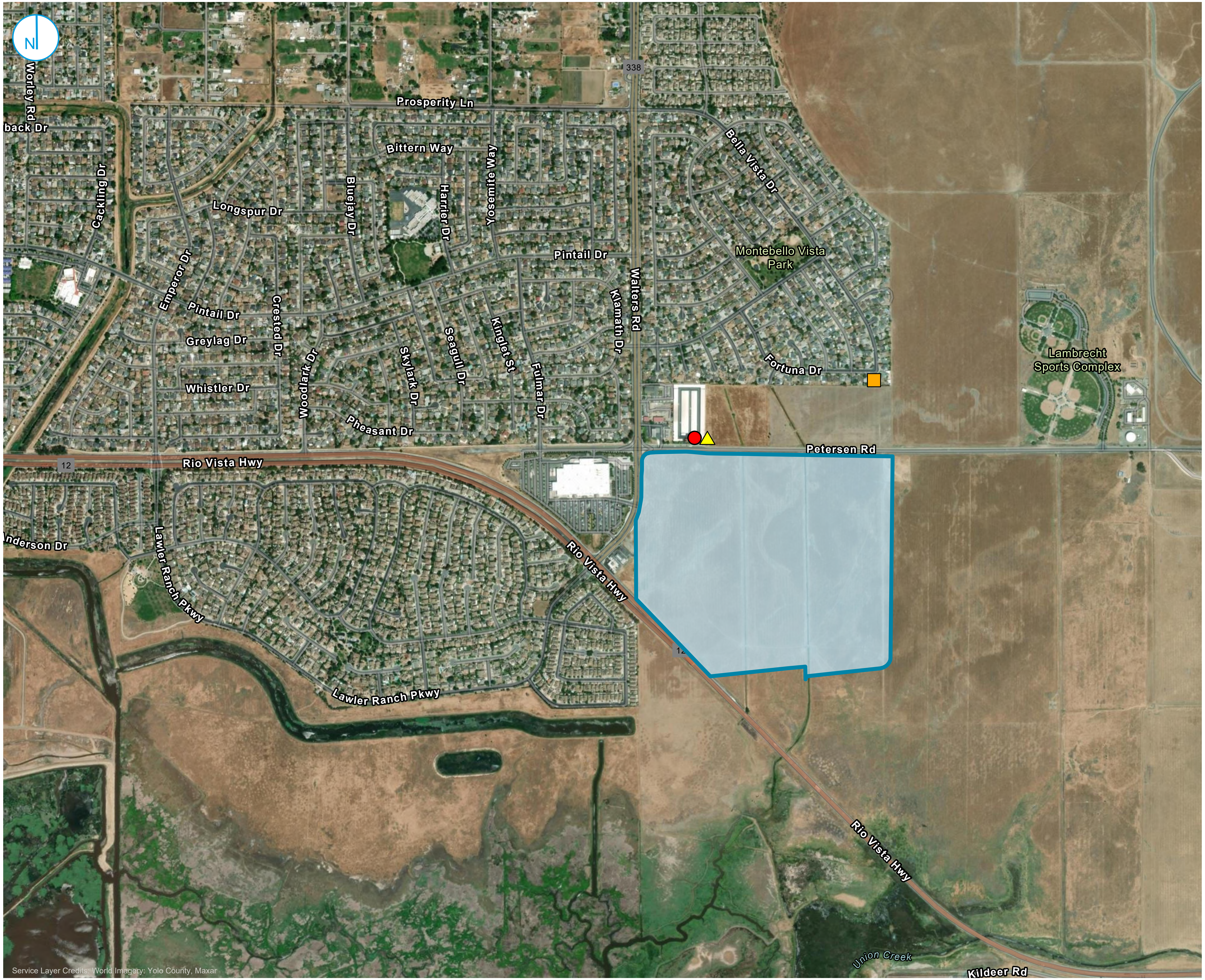


Project Site

MEIR Exposure Type

- Chronic HI
- Excess Lifetime Cancer Risk
- PM2.5 Concentration

0 1,250 2,500 Feet

LOCATIONS OF MAXIMALLY EXPOSED INDIVIDUAL RECEPTORS (SCENARIO 1)

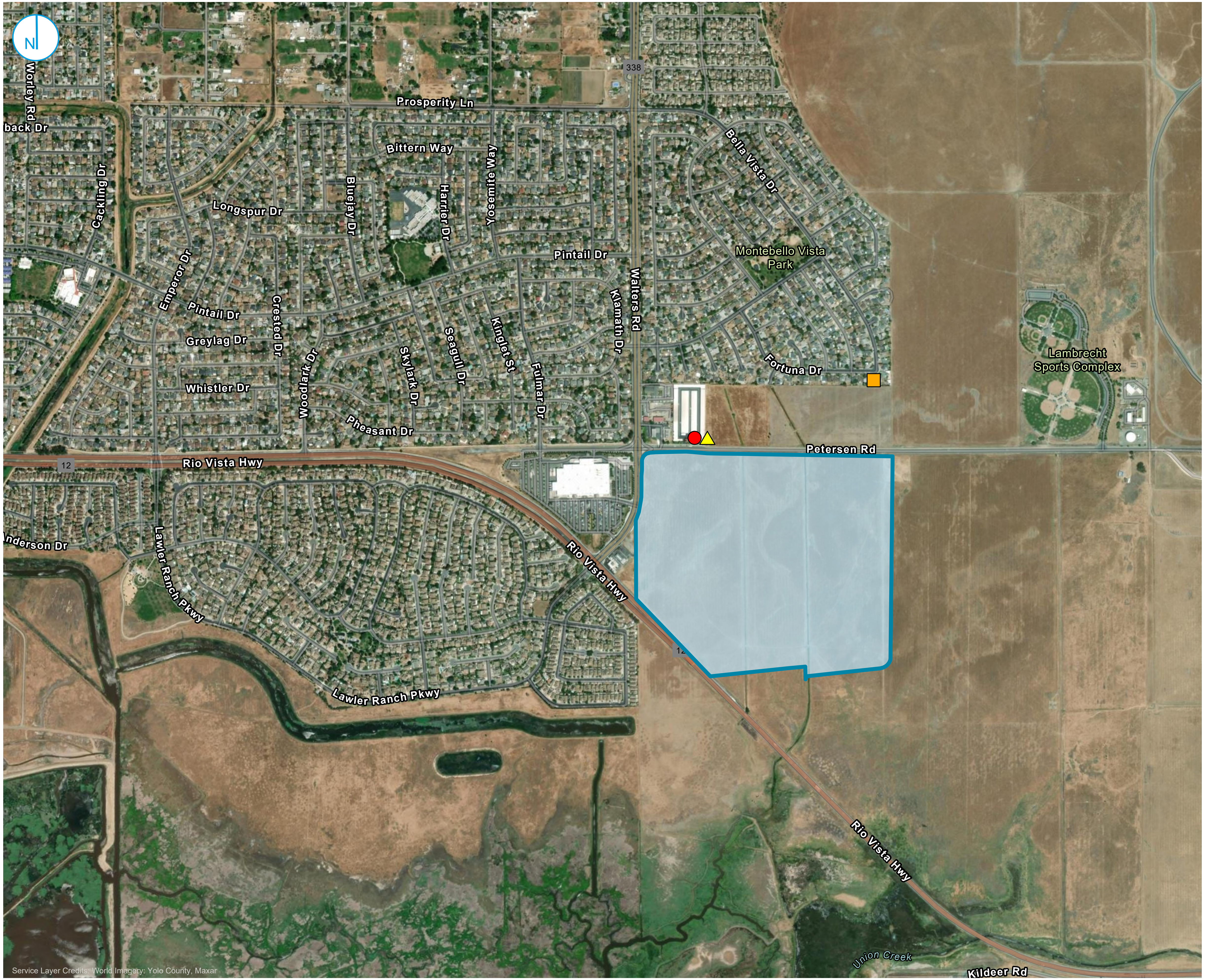
Suisun Logistics Center
Suisun, CA

FIGURE 05

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL

PROJECT: 1690029367 | DATED: 12/15/2023 | DESIGNER: JBEAL



Project Site
MEIR Exposure Type
Chronic HI
Excess Lifetime Cancer Risk
PM2.5 Concentration

0 1,250 2,500 Feet

LOCATIONS OF MAXIMALLY EXPOSED INDIVIDUAL RECEPTORS (SCENARIO 2)

Suisun Logistics Center
Suisun, CA

FIGURE 06

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

PROJECT: 1690029367 | DATED: 12/15/2023 | DESIGNER: JBEAL
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APPENDIX A
CALEEMOD OUTPUTS

Suisun Logistics Center (Cold) v3 Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Suisun Logistics Center (Cold) v3
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.70
Precipitation (days)	2.20
Location	38.24099881536705, -121.9855855890056
County	Solano-San Francisco
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	877
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

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
Refrigerated Warehouse-No Rail	2,059	1000sqft	47.3	2,058,667	0.00	—	—	—

Parking Lot	2,169	1000sqft	49.8	0.00	0.00	—	—	—
City Park	15.3	Acre	15.3	0.00	0.00	0.00	—	—

2. Emissions Summary

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	19.1	17.9	12.9	114	0.27	0.20	22.8	23.0	0.19	5.78	5.97	—	27,120	27,120	1.30	1.25	99.1	27,623
Area	15.9	48.0	0.75	89.5	0.01	0.16	—	0.16	0.12	—	0.12	—	368	368	0.02	< 0.005	—	370
Energy	0.30	0.15	2.74	2.30	0.02	0.21	—	0.21	0.21	—	0.21	—	11,293	11,293	0.29	0.01	—	11,302
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	35.4	66.0	16.4	206	0.29	0.57	22.8	23.4	0.52	5.78	6.30	1,955	39,595	41,550	199	3.48	54,963	102,534
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	18.2	16.9	15.1	115	0.25	0.20	22.8	23.0	0.19	5.78	5.97	—	25,557	25,557	1.52	1.38	2.57	26,008
Area	—	33.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.30	0.15	2.74	2.30	0.02	0.21	—	0.21	0.21	—	0.21	—	11,293	11,293	0.29	0.01	—	11,302
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864

Vegetatio	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	18.5	50.3	17.9	117	0.27	0.41	22.8	23.2	0.40	5.78	6.18	1,955	37,663	39,618	200	3.61	54,867	100,549
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	17.9	16.7	14.1	107	0.25	0.20	22.7	22.9	0.19	5.75	5.94	—	25,690	25,690	1.40	1.31	42.7	26,158
Area	7.85	40.5	0.37	44.2	< 0.005	0.08	—	0.08	0.06	—	0.06	—	182	182	0.01	< 0.005	—	182
Energy	0.30	0.15	2.74	2.30	0.02	0.21	—	0.21	0.21	—	0.21	—	11,293	11,293	0.29	0.01	—	11,302
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	26.1	57.4	17.2	154	0.27	0.49	22.7	23.2	0.45	5.75	6.21	1,955	37,978	39,933	199	3.54	54,907	100,882
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.27	3.04	2.57	19.5	0.05	0.04	4.15	4.18	0.03	1.05	1.08	—	4,253	4,253	0.23	0.22	7.06	4,331
Area	1.43	7.40	0.07	8.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.1	30.1	< 0.005	< 0.005	—	30.2
Energy	0.06	0.03	0.50	0.42	< 0.005	0.04	—	0.04	0.04	—	0.04	—	1,870	1,870	0.05	< 0.005	—	1,871
Water	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727
Waste	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9,083	9,083
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	55.4	55.4	—	—	—	55.4
Total	4.76	10.5	3.14	28.0	0.05	0.09	4.15	4.23	0.08	1.05	1.13	324	6,288	6,611	33.0	0.59	9,090	16,702

2.6. Operations Emissions by Sector, Mitigated

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

Sector	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	19.1	17.9	12.9	114	0.27	0.20	22.8	23.0	0.19	5.78	5.97	—	27,120	27,120	1.30	1.25	99.1	27,623
Area	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.30	0.15	2.74	2.30	0.02	0.21	—	0.21	0.21	—	0.21	—	11,302	11,302	0.29	0.01	—	11,311
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	19.4	49.5	15.6	117	0.28	0.41	22.8	23.2	0.40	5.78	6.18	1,955	39,235	41,190	199	3.48	54,963	102,174
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	18.2	16.9	15.1	115	0.25	0.20	22.8	23.0	0.19	5.78	5.97	—	25,557	25,557	1.52	1.38	2.57	26,008
Area	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.30	0.15	2.74	2.30	0.02	0.21	—	0.21	0.21	—	0.21	—	11,293	11,293	0.29	0.01	—	11,302
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	18.5	48.5	17.9	117	0.27	0.41	22.8	23.2	0.40	5.78	6.18	1,955	37,663	39,618	200	3.61	54,867	100,549
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	17.9	16.7	14.1	107	0.25	0.20	22.7	22.9	0.19	5.75	5.94	—	25,690	25,690	1.40	1.31	42.7	26,158
Area	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.30	0.15	2.74	2.30	0.02	0.21	—	0.21	0.21	—	0.21	—	11,297	11,297	0.29	0.01	—	11,306
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392

Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	18.2	48.3	16.8	109	0.27	0.41	22.7	23.1	0.40	5.75	6.15	1,955	37,801	39,756	199	3.54	54,907	100,704
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.27	3.04	2.57	19.5	0.05	0.04	4.15	4.18	0.03	1.05	1.08	—	4,253	4,253	0.23	0.22	7.06	4,331
Area	—	5.74	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.06	0.03	0.50	0.42	< 0.005	0.04	—	0.04	0.04	—	0.04	—	1,870	1,870	0.05	< 0.005	—	1,872
Water	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727
Waste	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9,083	9,083
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	55.4	55.4	—	—	—	55.4
Total	3.33	8.81	3.07	20.0	0.05	0.07	4.15	4.22	0.07	1.05	1.12	324	6,258	6,582	33.0	0.59	9,090	16,673

4. Operations Emissions Details

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 Products	—	31.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	2.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	15.9	14.7	0.75	89.5	0.01	0.16	—	0.16	0.12	—	0.12	—	368	368	0.02	< 0.005	—	370
Total	15.9	48.0	0.75	89.5	0.01	0.16	—	0.16	0.12	—	0.12	—	368	368	0.02	< 0.005	—	370
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	31.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	2.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	33.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.43	1.32	0.07	8.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.1	30.1	< 0.005	< 0.005	—	30.2
Total	1.43	7.40	0.07	8.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.1	30.1	< 0.005	< 0.005	—	30.2

4.3.2. Mitigated

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

Source	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 Products	—	31.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	31.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	5.74	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727

4.4.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated Warehouse-No	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604

4.5.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9,083	9,083
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9,083	9,083

4.6.2. Mitigated

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

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

Refrigerated Warehou Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54,864	54,864
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9,083	9,083
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9,083	9,083

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Urban	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Urban	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Urban	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grassland	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grassland	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grassland	—	—	—	—	—	—	—	—	—	—	—	—	55.4	55.4	—	—	—	55.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	55.4	55.4	—	—	—	55.4

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Urban	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Urban	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Urban	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	—	—	—	0.00

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

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grassland	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grassland	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Total	—	—	—	—	—	—	—	—	—	—	—	—	335	335	—	—	—	335
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grassland	—	—	—	—	—	—	—	—	—	—	—	—	55.4	55.4	—	—	—	55.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	55.4	55.4	—	—	—	55.4

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	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

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)

Unrefrigerated Warehouse-No Rail	476,066,744	7,936,857
Parking Lot	0.00	0.00
City Park	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-No Rail	476,066,744	7,936,857
Parking Lot	0.00	0.00
City Park	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Refrigerated Warehouse-No Rail	1,935	—
Parking Lot	0.00	—
City Park	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Refrigerated Warehouse-No Rail	1,935	—
Parking Lot	0.00	—
City Park	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Refrigerated Warehouse-No Rail	Cold storage	R-404A	3,922	7.50	7.50	7.50	25.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Refrigerated Warehouse-No Rail	Cold storage	R-404A	3,922	7.50	7.50	7.50	25.0

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
Urban	Alfisols	167	47.0

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
Urban	Alfisols	167	47.0

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
Grassland	167	47.0

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
Grassland	167	47.0

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

Suisun Logistics Center (Dry) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Suisun Logistics Center (Dry)
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.70
Precipitation (days)	2.20
Location	38.24099881536705, -121.9855855890056
County	Solano-San Francisco
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	877
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.20

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
Unrefrigerated Warehouse-No Rail	2,059	1000sqft	47.3	2,058,667	0.00	—	—	—

Parking Lot	2,169	1000sqft	49.8	0.00	0.00	—	—	—
City Park	15.3	Acre	15.3	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-15	Require All-Electric Development
Area Sources	LL-1	Replace Gas Powered Landscape Equipment with Zero-Emission Landscape Equipment
Area Sources	AS-2	Use Low-VOC Paints

2. Emissions Summary

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.	32.0	62.9	14.4	186	0.24	0.56	18.8	19.3	0.51	4.75	5.26	1,955	30,395	32,350	199	3.26	81.5	38,382
Mit.	16.1	46.3	13.7	96.7	0.24	0.40	18.8	19.2	0.39	4.75	5.14	1,955	30,036	31,991	199	3.25	81.5	38,022
% Reduced	50%	26%	5%	48%	2%	29%	—	1%	24%	—	2%	—	1%	1%	< 0.5%	< 0.5%	—	1%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.3	47.3	15.5	96.8	0.22	0.40	18.8	19.2	0.39	4.75	5.14	1,955	28,742	30,697	199	3.36	2.11	36,685
Mit.	15.3	45.5	15.5	96.8	0.22	0.40	18.8	19.2	0.39	4.75	5.14	1,955	28,742	30,697	199	3.36	2.11	36,685
% Reduced	—	4%	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	22.9	54.4	15.0	135	0.23	0.48	18.7	19.1	0.45	4.73	5.17	1,955	29,016	30,972	199	3.31	35.0	36,974
Mit.	15.1	45.3	14.6	90.5	0.23	0.40	18.7	19.1	0.39	4.73	5.11	1,955	28,839	30,794	199	3.31	35.0	36,796
% Reduced	34%	17%	2%	33%	1%	17%	—	< 0.5%	13%	—	1%	—	1%	1%	< 0.5%	< 0.5%	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.18	9.93	2.74	24.6	0.04	0.09	3.41	3.49	0.08	0.86	0.94	324	4,804	5,128	33.0	0.55	5.80	6,121
Mit.	2.75	8.27	2.67	16.5	0.04	0.07	3.41	3.48	0.07	0.86	0.93	324	4,775	5,098	33.0	0.55	5.80	6,092
% Reduced	34%	17%	2%	33%	1%	17%	—	< 0.5%	13%	—	1%	—	1%	1%	< 0.5%	< 0.5%	—	< 0.5%

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	15.7	14.7	10.6	94.1	0.22	0.16	18.8	18.9	0.15	4.75	4.91	—	22,296	22,296	1.06	1.03	81.5	22,710
Area	15.9	48.0	0.75	89.5	0.01	0.16	—	0.16	0.12	—	0.12	—	368	368	0.02	< 0.005	—	370
Energy	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	7,252	7,252	0.32	0.01	—	7,262
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Total	32.0	62.9	14.4	186	0.24	0.56	18.8	19.3	0.51	4.75	5.26	1,955	30,395	32,350	199	3.26	81.5	38,382
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	15.0	13.9	12.4	94.2	0.21	0.16	18.8	18.9	0.15	4.75	4.91	—	21,011	21,011	1.25	1.13	2.11	21,381

Area	—	33.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	7,252	7,252	0.32	0.01	—	7,262
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Total	15.3	47.3	15.5	96.8	0.22	0.40	18.8	19.2	0.39	4.75	5.14	1,955	28,742	30,697	199	3.36	2.11	36,685
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	14.7	13.7	11.6	87.9	0.21	0.16	18.7	18.8	0.15	4.73	4.88	—	21,104	21,104	1.15	1.08	35.0	21,488
Area	7.85	40.5	0.37	44.2	< 0.005	0.08	—	0.08	0.06	—	0.06	—	182	182	0.01	< 0.005	—	182
Energy	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	7,252	7,252	0.32	0.01	—	7,262
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Total	22.9	54.4	15.0	135	0.23	0.48	18.7	19.1	0.45	4.73	5.17	1,955	29,016	30,972	199	3.31	35.0	36,974
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.69	2.50	2.11	16.1	0.04	0.03	3.41	3.44	0.03	0.86	0.89	—	3,494	3,494	0.19	0.18	5.80	3,558
Area	1.43	7.40	0.07	8.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.1	30.1	< 0.005	< 0.005	—	30.2
Energy	0.06	0.03	0.56	0.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	1,201	1,201	0.05	< 0.005	—	1,202
Water	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727
Waste	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604
Total	4.18	9.93	2.74	24.6	0.04	0.09	3.41	3.49	0.08	0.86	0.94	324	4,804	5,128	33.0	0.55	5.80	6,121

2.6. Operations Emissions by Sector, Mitigated

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

Sector	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	15.7	14.7	10.6	94.1	0.22	0.16	18.8	18.9	0.15	4.75	4.91	—	22,296	22,296	1.06	1.03	81.5	22,710

Area	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	7,261	7,261	0.32	0.01	—	7,271
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Total	16.1	46.3	13.7	96.7	0.24	0.40	18.8	19.2	0.39	4.75	5.14	1,955	30,036	31,991	199	3.25	81.5	38,022
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	15.0	13.9	12.4	94.2	0.21	0.16	18.8	18.9	0.15	4.75	4.91	—	21,011	21,011	1.25	1.13	2.11	21,381
Area	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	7,252	7,252	0.32	0.01	—	7,262
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Total	15.3	45.5	15.5	96.8	0.22	0.40	18.8	19.2	0.39	4.75	5.14	1,955	28,742	30,697	199	3.36	2.11	36,685
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	14.7	13.7	11.6	87.9	0.21	0.16	18.7	18.8	0.15	4.73	4.88	—	21,104	21,104	1.15	1.08	35.0	21,488
Area	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	7,257	7,257	0.32	0.01	—	7,267
Water	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Waste	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Total	15.1	45.3	14.6	90.5	0.23	0.40	18.7	19.1	0.39	4.73	5.11	1,955	28,839	30,794	199	3.31	35.0	36,796
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.69	2.50	2.11	16.1	0.04	0.03	3.41	3.44	0.03	0.86	0.89	—	3,494	3,494	0.19	0.18	5.80	3,558
Area	—	5.74	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.06	0.03	0.56	0.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	1,201	1,201	0.05	< 0.005	—	1,203
Water	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727
Waste	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604
Total	2.75	8.27	2.67	16.5	0.04	0.07	3.41	3.48	0.07	0.86	0.93	324	4,775	5,098	33.0	0.55	5.80	6,092

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
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	15.6	14.6	10.5	93.3	0.22	0.16	18.6	18.8	0.15	4.71	4.86	—	22,090	22,090	1.06	1.02	80.8	22,500
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.15	0.14	0.10	0.87	< 0.005	< 0.005	0.17	0.18	< 0.005	0.04	0.05	—	206	206	0.01	0.01	0.75	210
Total	15.7	14.7	10.6	94.1	0.22	0.16	18.8	18.9	0.15	4.75	4.91	—	22,296	22,296	1.06	1.03	81.5	22,710
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	14.8	13.7	12.3	93.3	0.20	0.16	18.6	18.8	0.15	4.71	4.86	—	20,816	20,816	1.24	1.12	2.09	21,184
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.14	0.13	0.11	0.87	< 0.005	< 0.005	0.17	0.18	< 0.005	0.04	0.05	—	194	194	0.01	0.01	0.02	198
Total	15.0	13.9	12.4	94.2	0.21	0.16	18.8	18.9	0.15	4.75	4.91	—	21,011	21,011	1.25	1.13	2.11	21,381
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No Rail	2.68	2.49	2.10	16.0	0.04	0.03	3.39	3.42	0.03	0.86	0.89	—	3,477	3,477	0.19	0.18	5.77	3,540
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.01	0.01	0.01	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	17.0	17.0	< 0.005	< 0.005	0.03	17.3
Total	2.69	2.50	2.11	16.1	0.04	0.03	3.41	3.44	0.03	0.86	0.89	—	3,494	3,494	0.19	0.18	5.80	3,558

4.1.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	15.6	14.6	10.5	93.3	0.22	0.16	18.6	18.8	0.15	4.71	4.86	—	22,090	22,090	1.06	1.02	80.8	22,500
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.15	0.14	0.10	0.87	< 0.005	< 0.005	0.17	0.18	< 0.005	0.04	0.05	—	206	206	0.01	0.01	0.75	210
Total	15.7	14.7	10.6	94.1	0.22	0.16	18.8	18.9	0.15	4.75	4.91	—	22,296	22,296	1.06	1.03	81.5	22,710
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	14.8	13.7	12.3	93.3	0.20	0.16	18.6	18.8	0.15	4.71	4.86	—	20,816	20,816	1.24	1.12	2.09	21,184
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

City Park	0.14	0.13	0.11	0.87	< 0.005	< 0.005	0.17	0.18	< 0.005	0.04	0.05	—	194	194	0.01	0.01	0.02	198
Total	15.0	13.9	12.4	94.2	0.21	0.16	18.8	18.9	0.15	4.75	4.91	—	21,011	21,011	1.25	1.13	2.11	21,381
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	2.68	2.49	2.10	16.0	0.04	0.03	3.39	3.42	0.03	0.86	0.89	—	3,477	3,477	0.19	0.18	5.77	3,540
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.01	0.01	0.01	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	17.0	17.0	< 0.005	< 0.005	0.03	17.3
Total	2.69	2.50	2.11	16.1	0.04	0.03	3.41	3.44	0.03	0.86	0.89	—	3,494	3,494	0.19	0.18	5.80	3,558

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	3,296	3,296	0.00	0.00	—	3,296
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	292	292	0.00	0.00	—	292
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,587	3,587	0.00	0.00	—	3,587

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	3,296	3,296	0.00	0.00	—	3,296
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	292	292	0.00	0.00	—	292
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,587	3,587	0.00	0.00	—	3,587
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	546	546	0.00	0.00	—	546
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	48.3	48.3	0.00	0.00	—	48.3
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	594	594	0.00	0.00	—	594

4.2.2. Electricity Emissions By Land Use - Mitigated

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

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

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	3,305	3,305	0.00	0.00	—	3,305
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	292	292	0.00	0.00	—	292
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,596	3,596	0.00	0.00	—	3,596
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	3,296	3,296	0.00	0.00	—	3,296
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	292	292	0.00	0.00	—	292
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,587	3,587	0.00	0.00	—	3,587
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	546	546	0.00	0.00	—	546
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	48.3	48.3	0.00	0.00	—	48.3
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	595	595	0.00	0.00	—	595

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	3,665	3,665	0.32	0.01	—	3,675
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	3,665	3,665	0.32	0.01	—	3,675
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	3,665	3,665	0.32	0.01	—	3,675
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	3,665	3,665	0.32	0.01	—	3,675
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.06	0.03	0.56	0.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	607	607	0.05	< 0.005	—	608
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Total	0.06	0.03	0.56	0.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	607	607	0.05	< 0.005	—	608

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	3,665	3,665	0.32	0.01	—	3,675
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	3,665	3,665	0.32	0.01	—	3,675
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	3,665	3,665	0.32	0.01	—	3,675
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.34	0.17	3.07	2.58	0.02	0.23	—	0.23	0.23	—	0.23	—	3,665	3,665	0.32	0.01	—	3,675
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unrefrigerated Warehouse-No	0.06	0.03	0.56	0.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	607	607	0.05	< 0.005	—	608
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.06	0.03	0.56	0.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	607	607	0.05	< 0.005	—	608

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 Products	—	31.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	2.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	15.9	14.7	0.75	89.5	0.01	0.16	—	0.16	0.12	—	0.12	—	368	368	0.02	< 0.005	—	370
Total	15.9	48.0	0.75	89.5	0.01	0.16	—	0.16	0.12	—	0.12	—	368	368	0.02	< 0.005	—	370
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	31.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	—	2.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	33.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.39	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.43	1.32	0.07	8.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.1	30.1	< 0.005	< 0.005	—	30.2
Total	1.43	7.40	0.07	8.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.1	30.1	< 0.005	< 0.005	—	30.2

4.3.2. Mitigated

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

Source	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 Products	—	31.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	—	31.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	31.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	5.74	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727

4.4.2. Mitigated

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

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

Unrefrigerated Warehouse-No	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	912	479	1,391	93.5	2.22	—	4,392
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	151	79.3	230	15.5	0.37	—	727

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604

4.5.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	1,043	0.00	1,043	104	0.00	—	3,649

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	173	0.00	173	17.3	0.00	—	604

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

4.6.2. Mitigated

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

Land Use	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

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

Equipment Type	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)

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

Land Use	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	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

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Unrefrigerated Warehouse-No Rail	3,582	3,582	3,582	1,307,459	26,418	26,418	26,418	9,642,496
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
City Park	11.9	29.9	33.4	6,405	87.8	221	246	47,240

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Unrefrigerated Warehouse-No Rail	3,582	3,582	3,582	1,307,459	26,418	26,418	26,418	9,642,496
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

City Park	11.9	29.9	33.4	6,405	87.8	221	246	47,240

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

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	0.00	0.00	1,029,334	130,169

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

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)
Unrefrigerated Warehouse-No Rail	21,481,534	56.0	0.0000	0.0000	11,435,555
Parking Lot	1,900,467	56.0	0.0000	0.0000	0.00
City Park	0.00	56.0	0.0000	0.0000	0.00

5.11.2. Mitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Unrefrigerated Warehouse-No Rail	21,481,534	56.0	0.0000	0.0000	11,435,555
Parking Lot	1,900,467	56.0	0.0000	0.0000	0.00
City Park	0.00	56.0	0.0000	0.0000	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-No Rail	476,066,744	7,936,857
Parking Lot	0.00	0.00
City Park	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-No Rail	476,066,744	7,936,857
Parking Lot	0.00	0.00
City Park	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Unrefrigerated Warehouse-No Rail	1,935	—
Parking Lot	0.00	—
City Park	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Unrefrigerated Warehouse-No Rail	1,935	—
Parking Lot	0.00	—
City Park	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

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	19.9	annual days of extreme heat
Extreme Precipitation	3.95	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	20.1	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	N/A	N/A	N/A	N/A
Extreme Precipitation	1	0	0	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	N/A	N/A	N/A	N/A
Extreme Precipitation	1	1	1	2
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	22.3
AQ-PM	16.1
AQ-DPM	5.03
Drinking Water	58.6
Lead Risk Housing	26.6
Pesticides	22.4
Toxic Releases	62.6
Traffic	38.0
Effect Indicators	—
CleanUp Sites	73.4
Groundwater	90.2

Haz Waste Facilities/Generators	98.5
Impaired Water Bodies	96.3
Solid Waste	97.8
Sensitive Population	—
Asthma	95.5
Cardio-vascular	88.0
Low Birth Weights	32.3
Socioeconomic Factor Indicators	—
Education	54.1
Housing	26.2
Linguistic	14.9
Poverty	41.2
Unemployment	35.0

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	65.35352239
Employed	24.27819838
Median HI	66.68805338
Education	—
Bachelor's or higher	54.3308097
High school enrollment	25.92069806
Preschool enrollment	7.686385218
Transportation	—
Auto Access	41.51161299

Active commuting	39.58680867
Social	—
2-parent households	19.20954703
Voting	51.59758758
Neighborhood	—
Alcohol availability	65.36635442
Park access	59.93840626
Retail density	6.685486975
Supermarket access	37.4566919
Tree canopy	60.69549596
Housing	—
Homeownership	47.45284229
Housing habitability	59.66893366
Low-inc homeowner severe housing cost burden	65.31502631
Low-inc renter severe housing cost burden	51.67457975
Uncrowded housing	44.45014757
Health Outcomes	—
Insured adults	57.24368023
Arthritis	0.0
Asthma ER Admissions	7.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	65.7

Cognitively Disabled	72.6
Physically Disabled	96.1
Heart Attack ER Admissions	17.8
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	61.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	12.3
Children	58.1
Elderly	66.9
English Speaking	78.5
Foreign-born	55.4
Outdoor Workers	47.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	39.8
Traffic Density	34.4
Traffic Access	46.2
Other Indices	—
Hardship	47.8

Other Decision Support	—
2016 Voting	48.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	67.0
Healthy Places Index Score for Project Location (b)	48.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Warehouse and parking lot acreages increased to bring the total project lot acreage up to 120 acres which is from the project description.
Construction: Construction Phases	The site is a green field, so no demolition is needed. The resulting schedule is adjusted to start with Site Preparation and retain the default durations from CalEEMod for each phase.
Construction: Architectural Coatings	Construction architectural coating emissions are quantified outside of CalEEMod.

Construction: Dust From Material Movement	Fugitive dust emissions expected during grading phase.
Characteristics: Utility Information	PG&E reported a carbon intensity of 56 lbs of CO2e per MWh in 2022 per their Power Content Label published in October 2023. The CO2 intensity factor is used to represent this more accurate intensity while the CH4 and N2O are zeroed out.
Operations: Consumer Products	General Category emission factor was modified based on the expected Consumer Product ROG inventory in 2026 for Solano County provided by the ARB and the expected building area in Solano County forecasted for 2026.
Operations: Water and Waste Water	Outdoor water consumption was provided by Project Sponsor.
Operations: Refrigerants	The City Park land use represents preserved open space that will not include development.
Operations: Solid Waste	City Park land use is used to represent preserved open space that will not include any development.
Operations: Architectural Coatings	No interior painting per Project Sponsor.

APPENDIX B
AERMOD OUTPUT FILES (SUBMITTED ELECTRONICALLY)

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B.2 - Greenhouse Gas Emissions Technical Report

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Prepared for
Buzz Oates

Prepared by:
Ramboll Americas Engineering Solutions, Inc.
Irvine, California

Project Number
1690029367

Date
March 2024

SUISUN LOGISTICS CENTER GREENHOUSE GAS EMISSIONS TECHNICAL REPORT

SUISUN CITY, CALIFORNIA

RAMBOLL

CONTENTS

CONTENTS *(CONTINUED)*

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACC	Advanced Clean Cars
APCD	Air Pollution Control District
AQMD	Air Quality Management District
AR5	Fifth Assessment Report
ATCM	Air Toxics Control Measure
BAAQMD	Bay Area Air Quality Management District
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
CalRecycle	California Department of Resources Recycling and Recovery
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAP	Criteria Air Pollutant
CAT	Climate Action Team
CCCC	California Climate Change Center
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
DOE	Department of Energy
DWR	Department of Water Resources
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMFAC	EMission FACtors model
EO	Executive Order
EPA	Environmental Protection Agency
EVs	Electric vehicles
GHG	greenhouse gas
GW	Gigawatt
GWP	global warming potential
HFCs	hydrofluorocarbons
HVAC	Heating, Ventilation and Air Conditioning
IPCC	Intergovernmental Panel on Climate Change
lbs	Pounds
LCFS	Low Carbon Fuel Standard
LEV	Light-Duty Electric Vehicles
MPO	Metropolitan Planning Organization
MSW	Municipal solid waste

ACRONYMS AND ABBREVIATIONS *(CONTINUED)*

Acronym	Definition
MT	metric tons
MTC	Metropolitan Transportation Commission
N_2O	nitrogen dioxide
NHTSA	National Highway Traffic Safety Administration
OFFROAD	Off-road Emissions Inventory Program model
OPR	Office of Planning and Research
PFCs	perfluorocarbons
PG&E	Pacific Gas and Electric
PUP	Power/Utility Protocol
Ramboll	Ramboll Americas Engineering Solutions, Inc.
RPS	Renewables Portfolio Standards
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SLCPs	short-lived climate pollutants
SMAQMD	Sacramento Metropolitan Air Quality Management District
SR	State Route
TRU	transportation refrigeration unit
USDOT	the Department of Transportation
USEPA	United States Environmental Protection Agency
VMT	vehicle miles traveled
VW	Volkswagen
ZEVs	Zero emission vehicles

1. INTRODUCTION

Ramboll Americas Engineering Solutions, Inc. (Ramboll) was retained to prepare a Greenhouse Gas (GHG) Emissions Technical Report for the proposed Suisun Logistics Center Project in Suisun City, California (Project).

This report analyzes the Project's impacts related to GHGs from construction and operations. The report describes the existing setting of the Project site, describes the relevant regulatory setting, discusses the methodology used to evaluate GHG emissions related to the Project, and evaluates potential impacts related to GHGs that would result from implementation of the Project.

1.1 Existing Conditions

The 167.43-acre Project site is located in unincorporated Solano County, within the existing Suisun City (the City) Sphere of Influence. The Project site is bounded by a service station and Walters Road to the west, Petersen Road to the north, grazing land to the east, and State Route (SR) 12 to the south. Travis Air Force Base is located approximately 0.5 mile to the east. The existing site is designated "Agricultural" by the Solano County General Plan and is zoned "Exclusive Agricultural 160 acres (A-160)" by the Solano County Zoning Ordinance. The land is currently used for cattle grazing and contains grassy vegetation. The project site is currently designated "Special Planning Area" by the Suisun City General Plan, which is a non-binding designation. The project site would be annexed into the City's limit as a result of the Project.

1.2 Project Analysis

The Project consists of 2.1 million square feet of warehouse uses on approximately 120 acres. The Project would construct six buildings ranging from approximately 145,000 to 645,000 square feet in size. Each building would be equipped with docks, grade-level roll-up doors, and trailer parking stalls as well as associated passenger vehicle parking areas, driveways, and other supporting infrastructure. The facility would be enclosed with a secure perimeter and access would be restricted to authorized users via three main hauling and passenger entrances on along Petersen Road and one passenger entrance along Walters Road.

The rest of the Project site, totaling approximately 47 acres, would be preserved as open space. In addition to warehouse construction, the project would also include storm drainage installation, roadway and sidewalk improvements, and installation of utilities, such as the extension of service laterals to the proposed buildings.

Peterson Road would be widened to include three full access unsignalized driveways intended for trucks and an additional eastbound lane. The existing Petersen Road westbound lane and Class I bike/pedestrian facility would also be improved by the Project. Some of these Peterson Road improvements are in furtherance of a project objective of increasing the capacity of that roadway Road beyond what is necessary to mitigate Project impacts in order to provide a net benefit for Travis Air Force Base.

2. SCIENTIFIC AND REGULATORY BACKGROUNDS

2.1 Scientific Background

2.1.1 Science of Global Climate Change

There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs. GHGs allow the sun's radiation to penetrate the atmosphere and warm the Earth's surface, but do not let the infrared radiation emitted from the Earth escape back into outer space. As a result, global temperatures are predicted to increase over the century. If climate change remains unabated, average temperatures in California are expected to increase anywhere from 4.1 to 8.6 degrees Fahrenheit by the end of the century.[1] Not only would higher temperatures directly affect the health of individuals through greater risk of dehydration, heat stroke, and respiratory distress, the higher temperatures may increase ozone formation, thereby worsening air quality. Rising temperatures could also reduce the snowpack, which would increase the risk of water shortages. Higher temperatures along with reduced water supplies could reduce the quantity and quality of agricultural products. In addition, there could be an increase in wildfires and a shift in distribution of natural vegetation throughout the State. Global warming could also raise sea levels and increase the inland reach of coastal storms resulting in greater risk of flooding.

Emissions of carbon dioxide (CO_2) are the leading cause of global warming, with other pollutants such as methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons, and sulfur hexafluoride also contributing. The magnitude of the impact on global warming differs among the GHGs. For example, methane, HFCs, perfluorocarbons, and sulfur hexafluoride have a greater "global warming potential" than CO_2. In other words, these other GHGs have a greater contribution to global warming than CO_2 on a per mass basis. The effect each GHG has on climate change is measured as a combination of the volume of its emissions and its global warming potential (GWP) and is expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of metric tons (MT) of carbon dioxide equivalent (CO_2e). CO_2 has the greatest impact on global warming because of the relatively large quantities of CO_2 emitted into the atmosphere.

Globally, CO_2 concentrations, which ranged from 265 parts per million (ppm) to 280 ppm over the last 10,000 years, only began rising in the last 200 years to current levels of 424 ppm,[2] a 51 percent increase.

In 2021, the United States emitted about 5.6 billion MT of CO_2e or about 17 MT/person/year, which was calculated by dividing the emissions total by the U.S. Census Bureau 2021

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[1] California Climate Change Center (CCCC). Our Changing Climate 2012 Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. 2012. Available at: https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/CCCC.--2012.--Vulner--Adapt-to-CC-risks.pdf. Accessed: January 2024.

[2] National Oceanic and Atmospheric Administration (NOAA). Climate Change: Atmospheric Carbon Dioxide. 2023. Available at: https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide. Accessed: January 2024.

population estimate.[3,4] This represents a 17 percent reduction below 2005 total emission levels. Of the five major sectors nationwide -- residential, commercial, industrial, electric power generation, and transportation - transportation accounts for the highest fraction of GHG emissions (approximately 29 percent of emissions from these five sectors). These emissions are entirely generated from direct fossil fuel combustion. Fifty-eight percent of these transportation emissions resulted from passenger car and light-duty truck use. The remaining emissions came from other transportation activities, including the combustion of diesel fuel in medium- and heavy-duty vehicles, and jet fuel in aircraft. According to the Inventory of U.S. Greenhouse Gas Emissions and Sinks,[5] from 1990 to 2021, transportation CO_2 emissions from fossil fuel combustion increased by approximately 19 percent.

In 2020, California emitted approximately 369 million metric tons of CO_2e, or about 7 percent of the U.S. emissions.[6] California's percentage contribution is due primarily to the sheer size of California, as compared to other states. For example, in 2021 (the most recent year of state rankings for energy-related CO_2 emissions per capita), California had the fourth lowest per capita energy-related CO_2 emission rates in the country (including Washington DC),[7] due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of emissions growth.[8] California's per capita GHG emissions in 2021 were 8.3 metric tons per person[9], while the U.S. per capita GHG emissions in that same year were around 17 metric tons per person.[10,11] Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

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3 USEPA. 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. Available at: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021. Accessed: November 2023.

4 U.S. Census Bureau. Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2020 to July 1, 2021. (NST-EST2021). Available at: https://www2.census.gov/programs-surveys/popest/tables/2020-2021/state/totals/NST-EST2021-POP.xlsx. Accessed: November 2023.

5 USEPA. 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. Available at: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021. Accessed: November 2023.

6 CARB. 2022. California Greenhouse Gas Emissions for 2000 to 2020 Trends of Emissions and Other Indicators. October 26. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf. Accessed: November 2023.

7 US EIA. 2023. Table 4: Per capita energy-related carbon dioxide emissions by state. Available at: https://www.eia.gov/environment/emissions/state/. Accessed: November 2023.

8 The Center for Resource Efficient Communities. 2013. Residential Energy Use and GHG Emissions Impact of Compact Land Use Types. Report prepared for CARB, Contract No. 10-323. November 5. Available at: http://www.arb.ca.gov/research/apr/past/10-323h.pdf. Accessed: November 2023.

9 CARB. 2022. California Greenhouse Gas Emissions for 2000 to 2020 Trends of Emissions and Other Indicators. October 26. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf. Accessed: November 2023.

10 USEPA. 2023. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. Available at: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021. Accessed: November 2023.

11 U.S. Census Bureau. Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2020 to July 1, 2021. (NST-EST2021). Available at: https://www2.census.gov/programs-surveys/popest/tables/2020-2021/state/totals/NST-EST2021-POP.xlsx. Accessed: November 2023.

The California Energy Commission (CEC) found that transportation is the source of approximately 36.8 percent of the State's GHG emissions, followed by industrial sources at 19.9 percent, and electricity generation (both in-state and out-of-state) at 16.1 percent. Residential and commercial activities comprised approximately 10.5 percent of the inventory. Agriculture and forestry is the source of approximately 8.6 percent of the State's GHG emissions.[12]

The GHG emissions that result from operations under existing conditions and proposed 2035 General Plan land uses within the City of Suisun City are approximately 211.9 thousand metric tons of CO_2e per year, without accounting for emission reductions from the implementation of Statewide regulations, including Pavley I (**Section 2.2.2.9.c**), the Low Carbon Fuel Standard (**Section 2.2.2.9.d**), and the Renewables Portfolio Standard (**Section 2.2.2.8.a**). With the implementation of Statewide regulations related to GHG emission reductions, the GHG emissions that result from operations under existing conditions and proposed 2035 General Plan land uses within the City are reduced to approximately 167.8 thousand metric tons. The projected emissions for Suisun City upon full buildout of the General Plan within city limits is about 3.9 metric tons of CO_2e per service population per year when accounting for emission reductions achieved by statewide regulations, programs, and measures.[13,14]

2.1.2 Potential Effects of Human Activity on Global Climate Change

Globally, climate change has the potential to impact numerous environmental resources through anticipated, though uncertain, impacts related to future temperatures and weather patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. At the end of the 21st century, global surface temperature change is likely to exceed 1.5°C (relative to 1850-1900 levels) in four of five assessed climate model projections.[15]

The understanding of GHG emissions, particulate matter, and aerosols on global climate trends is complex and involves varying uncertainties and a balance of different effects. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications by the Intergovernmental Panel on Climate Change (IPCC), such as the Sixth

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[12] CARB. 2022. California Greenhouse Gas Emissions for 2000 to 2020 Trends of Emissions and Other Indicators. October 26. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf. Accessed: November 2023.

[13] City of Suisun City 2035 General Plan EIR. 2015. Available at:https://www.suisun.com/Departments/Development-Services/Planning/General-Plan. Accessed: December 2023.

[14] Service population is defined as the number of jobs plus the number of residents supported by a proposed project.

[15] IPCC Sixth Assessment Report. Climate Change 2023: Synthesis Report. 2023. Figure 2.1. Available at: https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf. Accessed: December 2023.

Assessment Report (AR6) Synthesis Report.[16, 17] Nonetheless, when all effects and uncertainties are considered together, there is a strong scientific consensus that human activity has contributed significantly to global warming. As stated in the executive summary for the Working Group I contribution to the Sixth Assessment Report, "It is unequivocal that human influence has warmed the atmosphere, ocean, and land. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has further strengthened since AR5."[18]

Acknowledging uncertainties regarding the rate at which anthropogenic GHG emissions would continue to increase (based upon various factors under human control, such as future population growth and the locations of that growth; the amount, type, and locations of economic development; the amount, type, and locations of technological advancement; adoption of alternative energy sources; legislative and public initiatives to curb emissions; and public awareness and acceptance of methods for reducing emissions), and the impact of such emissions on climate change, the IPCC devises emission scenarios that use various assumptions about the rates of economic development, population growth, and technological advancement over the course of the next century. For the AR6, Shared Socioeconomic Pathways (SSPs) were developed to describe five different 21st century scenarios of GHG emissions, atmospheric concentrations, air pollutant emissions, land use and potential societal changes. SSPs are based on a combination of integrated assessment models, simple climate models, atmospheric chemistry, global carbon cycle models, and expert judgment.

- The projected effects of global warming are assessed under each of the five scenarios.[19]
- It is, at a minimum, more likely than not a 1.5ºC increase in globally averaged surface area temperature will occur between 2021-2045 relative to the average over the period of 1850-1900.
- It is virtually certain that global mean sea level will continue to rise through the 21st century.
- Under very high GHG emission scenarios, the Arctic Ocean is projected to be practically free of sea ice in September at least once around the middle of the 21st century.
- It is very likely that the cumulative uptake of carbon by the ocean and by land will increase through the end of the 21st century.

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[16] The IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to assess scientific, technical, and socio-economic information relevant for the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC has produced a series of Assessment Reports comprised of full scientific and technical assessments of climate change. The first assessment report was developed in 1990. The Sixth Assessment Report was completed in March 2023 with the Synthesis Report.

[17] IPCC Sixth Assessment Report. Climate Change 2023: Synthesis Report. 2023. Figure 2.1. Available at: https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf. Accessed: December 2023.

[18] IPCC. 2021. Climate Change 2021 The Physical Science Basis, Working Group I contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Available at: https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf. Accessed: December 2023.

[19] IPCC Sixth Assessment Report. Climate Change 2023: Synthesis Report. 2023. Available at: https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf. Accessed: December 2023.

Potential secondary effects from global warming include impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

2.1.3 Potential Effects of Climate Change on the State of California

According to the California Air Resources Board (CARB), some of the potential impacts in California of global warming may include loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.[20] The California Climate Change Center (CCCC) has released four assessment reports on climate change in California, the most recent in 2018. California's Fourth Climate Change Assessment projects an increase by 5.6-8.8°F from 2070 to 2100 depending on GHG emission reductions (at a moderate rate or continuing at current rates).[21]

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California because of global warming and climate change.

2.1.3.1 Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood.

If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. Studies have been conducted to evaluate the potential impacts of climate change on wildfire frequency based on lower and higher emissions scenarios. Per California's Fourth Climate Change Assessment, under a higher emissions scenario, the average area burned statewide by 2100 could increase by 77 percent compared to 1961-1990 .[22] Per California's Third Climate Change Assessment, the estimated burned area is projected to increase between 57 and 169 percent, depending on location.[23] However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality

[20] California Air Resources Board (CARB), 2006. Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions, Sacramento, CA. December 1. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/Soitec-Documents/Final-EIR-Files/references/rtcref/ch3.1.3/2014-12-December 2023.

[21] California Climate Change Center, 2018. California's Changing Climate 2018. A Summary of Key Findings from California's Fourth Climate Change Assessment. November. Available at: https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf. Accessed: December 2023.

[22] *Ibid*.

[23] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July. Available at: https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/Moser-et-al.--2012.--CC-Vulnerability--Adaptation-Summary.pdf. Accessed: December 2023.

could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State.[24]

It is estimated that over the next decade, higher temperatures could increase the demand for electricity by 1 Gigawatt (GW) during summer months, which would require purchase of costly peak power from external sources or the construction of one new large power plant in California.[25] During periods of extreme heat, efficiency of electricity generation is reduced at natural gas plants; hydropower generation is reduced; and increased losses occur at substations; all while electricity demands are increased. These factors are projected to result in the need for more than 17 GW, or 38 percent of additional capacity, needed by 2100. Additionally, transmission lines lose 7 to 8 percent of transmitting capacity in higher temperatures, which also results in a need for increased power generation.[26]

2.1.3.2 Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. For example, models that predict drier conditions suggest decreased reservoir inflows and storage, and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions project increased reservoir inflows and storage, and increased river flows.[27]

A July 2006 technical report prepared by the California Department of Water Resources (DWR) addresses the State Water Project, the Central Valley Project, and the Sacramento-San Joaquin Delta. Although the report projects that, "[c]limate change will likely have a significant effect on California's future water resources … [and] future water demand," it also reports that, "there is much uncertainty about future water demand, especially those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood,"[28] DWR adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable

[24] California Climate Change Center (CCCC), 2006. Our Changing Climate: Assessing the Risks to California, CEC500-2006-077, Sacramento, CA. July. Available at: https://www.engr.scu.edu/~emaurer/papers/CEC-500-2006-077.pdf. Accessed: December 2023.

[25] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July. Available at: https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/Moser-et-al.--2012.--CC-Vulnerability--Adaptation-Summary.pdf. Accessed: December 2023.

[26] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July. Available at: https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/Moser-et-al.--2012.--CC-Vulnerability--Adaptation-Summary.pdf. Accessed: December 2023.

[27] Brekke, L.D., et al, 2004. —Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California. Journal of the American Water Resources Association. 40(2): 149–164. Malden, MA, Blackwell Synergy for AWRA. Available at: https://doi.org/10.1111/j.1752-1688.2004.tb01016.x. Accessed: December 2023.

[28] California Department of Water Resources (DWR), 2006. Progress on Incorporating Climate Change into Management of California Water Resources, Sacramento, CA. July. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=6454. Accessed: December 2023.

future."[29] Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows.[30]

California's Third Climate Change Assessment outlines the State's urgent water management challenges brought on because of climate change. These include increasing demand from a growing population as temperatures rise, earlier snowmelt and runoff, and faster-than-historical sea level rise threatening aging coastal water infrastructure and levees in the Sacramento-San Joaquin Delta.[31] Additionally, they predict that competition between urban and agriculture water users and environmental needs will increase due to effects on water supply and stream flows. The Fourth Climate Change Assessment concludes that by 2100, water supply from snowpack is projected to decline by two-thirds, and that by 2050, California's agricultural production could face climate-related water shortages of up to 16 percent in certain regions.[32]

2.1.3.3 Hydrology

As discussed above, climate change could potentially affect the following: the amount of snowfall, rainfall and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea level rise can be a product of global warming through two main processes -- expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the State's major fresh water supply that is pumped from the southern portion of the Sacramento/San Joaquin River Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events. Assuming the rate of sea level rise continues to follow global trends, sea level along California's coastline in 2050 could be 10-18 inches higher than in 2000, and 31-55 inches higher by the end of this century.[33] Based on these current projections, the current 100-year storm could occur once every year. California's

[29] California Department of Water Resources (DWR), 2006. Progress on Incorporating Climate Change into Management of California Water Resources, Sacramento, CA. July. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=6454. Accessed: December 2023.

[30] Kiparsky 2003, op. cit; DWR, 2005, op. cit.; Cayan, D., et al, 2006. Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF), Sacramento, CA. February. Available at: https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/CCCC.--2006.--Scenarios-of-CC.pdf. Accessed: December 2023.

[31] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July. Available at: https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/Moser-et-al.--2012.--CC-Vulnerability--Adaptation-Summary.pdf. Accessed: December 2023.

[32] California Climate Change Center, 2018. California's Changing Climate 2018. A Summary of Key Findings from California's Fourth Climate Change Assessment. November. Available at: https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf. Accessed: December 2023.

[33] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July. Available at: https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/Moser-et-al.--2012.--CC-Vulnerability--Adaptation-Summary.pdf. Accessed: December 2023.

Fourth Climate Change Assessment projects that without implementation of protective measures, airports in major urban areas will be susceptible to major flooding from a combination of sea level rise and storm surge by 2040 to 2080 and that the miles of highways susceptible to coastal flooding from a 100-year storm will triple from current levels by 2100.[34]

2.1.3.4 Agriculture

California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. The CCCC notes that higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase, crop-yield could be threatened by a less reliable water supply, and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.[35]

2.1.3.5 Ecosystems and Wildfire

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife.[36] The report outlines four major ways in which it is thought that climate change could affect plants and animals: (1) timing of ecological events, (2) geographic range, (3) species' composition within communities, and (4) ecosystem processes such as carbon cycling and storage.

2.2 Regulatory Background

2.2.1 Federal

2.2.1.1 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 (USEPA) 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 USEPA Administrator was directed to follow the language of Section 202(a) of the Clean Air Act (CAA). In December 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the CAA:

- Elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."

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[34] California Climate Change Center, 2018. California's Changing Climate 2018. A Summary of Key Findings from California's Fourth Climate Change Assessment. November. Available at: https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf. Accessed: December 2023.

[35] California Climate Change Center (CCCC), 2006, op. cit.

[36] Parmesan, C. and H. Galbraith, Observed Impacts of Global Climate Change in the U.S., Arlington, VA: Pew Center on Global Climate Change, November 2004.

- The combined emissions of GHGs—CO_2, CH_4, N_2O, 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 CAA.

2.2.1.2 Executive Order 14008

On January 27, 2021, President Biden issued an Executive Order on Tackling the Climate Crisis at Home and Abroad (Executive Order 14008).[37] Part I of the Order highlights putting the climate crisis at the center of United States foreign policy and national security. Addressing the climate crisis will require significant short-term global reductions in GHG emissions and net-zero global emissions by mid-century or sooner. The United States will pursue green recovery efforts and initiatives to advance the clean energy transition.

Part II of the Order relays the government-wide approach to the climate crisis, which involves reducing climate pollution in every sector of the economy, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure. A National Climate Task Force is established to focus on addressing the climate crisis through key federal actions to reduce climate change impacts. A 100% carbon pollution-free electricity sector is targeted by no later than 2035 and a net-zero emissions economy is to be achieved by no later than 2050. Offshore wind is aimed to be doubled by 2030. Opportunities for federal funding of clean energy technology and infrastructure shall be identified. Federal permitting decisions need to consider the effects of GHG emissions and climate change.

2.2.1.3 Paris Climate Agreement

The Paris Agreement was negotiated within the United Nations Framework Convention on Climate Change in 2015 to reduce GHG emissions internationally. The goal of the Paris Agreement was to keep the global temperature rise this century to below 2 degrees Celsius above pre-industrial standards, with efforts to limit temperature increase even further to 1.5 degrees Celsius. The Paris Agreement became effective on November 4, 2016. As of October 5, 2016, 155 of 197 parties had ratified the Paris Agreement.[38] On January 20, 2021, President Biden signed an Executive Order formally rejoining the United States to the Paris Agreement after former President Trump had taken steps to take the United States out of the Agreement.[39]

2.2.1.4 Federal Vehicle Standards

In response to the *Massachusetts v. EPA* decision discussed above, in 2007, President Bush directed the USEPA, the Department of Transportation (USDOT), and the Department of Energy (DOE) to establish regulations that reduce GHG emissions from motor vehicles,

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[37] White House Briefing Room. 2021. *Executive Order on Tackling the Climate Crisis at Home and Abroad*. January 27. Available at: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/. Accessed: December 2023.

[38] United Nations Framework Convention on Climate Change. 2017. The Paris Agreement. July 27. Available at: http://unfccc.int/paris_agreement/items/9485.php. Accessed: December 2023.

[39] White House Briefing Room. 2021. *Paris Climate Agreement.* January 20. Available at: https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/. Accessed: December 2023.

non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency for and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the USEPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

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

In August 2017, the USEPA asked for additional information and data relevant to assessing whether the GHG emissions standards for model years 2022-2025 remain appropriate. In early 2018, the USEPA Administrator announced that the midterm evaluation for the GHG emissions standards for cars and light-duty trucks for model years 2022-2025 was completed and stated his determination that the current standards should be revised in light of recent data. Subsequently, in 2018, the USEPA and NHTSA proposed to amend certain existing Corporate Average Fuel Economy (CAFE) standards and tailpipe CO_2 emissions standards for passenger cars and light-duty trucks and establish new standards, covering model years 2022-2025. Compared to maintaining the existing standards, the pending proposal would increase U.S. fuel consumption.[40] California and other states have announced their intent to challenge federal actions that would delay or eliminate GHG reductions. In April 2020, NHTSA and EPA amended the CAFE and GHG emissions standards for passenger cars and light-duty trucks and established new and less stringent standards, covering model years 2021 through 2026.

On September 27, 2019, the USEPA and NHTSA published the Safer Affordable Fuel-Efficient Rule ([SAFE], Part One).[41] The SAFE Rule (Part One) went into effect in November 2019, and revoked California's authority to set its own GHG standards and set zero emission vehicle (ZEV) mandates in California. The SAFE Rule (Part One) froze new ZEV sales at model year 2020 levels for year 2021 and beyond in California, and would likely result in a lower number of future ZEVs and a corresponding greater number of future gasoline internal combustion engine vehicles. In response to the USEPA's adoption of the SAFE Rule (Part One), California Air Resources Board (CARB) issued guidance regarding the adjustment of vehicle emissions factors to account for the rule's implications on criteria air pollutant (CAP) and GHG

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[40] USEPA. 2018. *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule. Accessed: December 2023.

[41] USEPA and NHTSA. 2019. Federal Register, Vol. 84, No. 188, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program*. September 27. Available at: https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-20672.pdf. Accessed: December 2023.

emissions.[42,43] The SAFE Rule was subject to ongoing litigation and on February 8, 2021 the D.C. Circuit Court of Appeals granted the Biden Administration's motion to stay litigation over the SAFE Rule (Part One). On April 22 and April 28, 2021, respectively, NHTSA and A formally announced their intent to reconsider the SAFE Rule (Part One).[44,45] A virtual public hearing for EPA's Notice of Reconsideration of the SAFE Rule (Part One) was held on June 2, 2021. The NHTSA finalized the CAFE pre-emption rulemaking to withdraw its portions of the SAFE Rule (Part One) on December 21, 2021.[46] On March 9, 2022, USEPA reinstated California's authority under the Clean Air Act to implement its own GHG emission standards and ZEV sales mandate and entirely rescinded the SAFE Rule (Part One). On July 28, 2023 the NHTSA announced a new proposal for CAFE standards, which set new fuel economy standards for model years 2027-2032.

In August 2021, USEPA proposed to revise existing national GHG emissions standards for passenger cars and light-duty trucks for Model Years 2023- 2026 to make the standards more stringent. These standards were finalized in December 2021. 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 3 billion metric tons of GHG emissions through 2050.[47]

On August 5, 2021, USEPA announced plans to reduce GHG emissions and other harmful air pollutants from heavy-duty trucks through a series of rulemakings over the next three years. The first rulemaking, signed in December 2022, focuses on reducing emissions that form smog and soot from heavy-duty vehicles in model year 2027 and beyond.[48] Since this first rulemaking, two additional rulemakings have been proposed to control truck emissions. One focuses on smog and soot forming emissions and greenhouse gas emissions from light- and medium-duty vehicles starting with model year 2027, and later models of commercial pickup trucks and vans. The other focuses on greenhouse gas emissions from heavy-duty vehicles for model year 2027 and later. On July 28, 2023 the NHTSA announced a new proposal for

[42] CARB. 2019. EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One. November 20. Available at: https://ww2.arb.ca.gov/sites/default/files/2023-02/emfac_off_model_adjustment_factors_final_draft.pdf. Accessed: December 2023.

[43] CARB. 2020. EMFAC Off-Model Adjustment Factors for Carbon Dioxide Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. June 26. Available at:https://ww2.arb.ca.gov/sites/default/files/2023-02/emfac_off_model_co2_adjustment_factors_06262020-final.pdf. Accessed: December 2023.

[44] NHTSA. 2021. NHTSA Advances Biden-Harris Administration's Climate & Jobs Goals. April 22. Available at: https://www.nhtsa.gov/press-releases/nhtsa-advances-biden-harris-administrations-climate-jobs-goals. Accessed: December 2023.

[45] USEPA. 2021. Federal Register, Vol. 86, No. 80, *California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a previous Withdrawal of a Waiver of Preemption; Opportunity for Public Hearing and Public Comment*. April 28. Available at: https://www.govinfo.gov/content/pkg/FR-2021-04-28/pdf/2021-08826.pdf. Accessed: December 2023.

[46] NHTSA. 2023. Corporate Average Fuel Economy. Available at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy. Accessed: December 2023.

[47] USEPA. 2021. Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions. Accessed: December 2023.

[48] USEPA. 2021. Clean Trucks Plan. https://www.epa.gov/regulations-emissions-vehicles-and-engines/clean-trucks-plan. August. Accessed: December 2023.

heavy-duty pickup truck and van standards. The proposal set new fuel economy standards for model years 2030-2035 for heavy-duty pickup trucks and vans.[49]

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles.

In August 2016, the USEPA 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 of sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.[50]

[49] Ibid.

[50] USEPA and NHTSA, 2016. Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium and Heavy-Duty Engines and Vehicles – Phase 2. October 25. Available at: https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed: December 2023.

2.2.1.5 Energy Independence and Security Act

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

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020.
- While superseded by the USEPA and NHTSA actions described above (see **Section 2.2.1.4** [Federal Vehicle Standards]), (i) establishing miles per gallon targets for cars and light-duty trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of 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."

2.2.2 State

The State of California considers GHG emissions and the impacts of climate change to be a serious threat to the public health, environment, economic well-being, and natural resources of California, and has taken an aggressive stance to mitigate the State's impact on climate change through the adoption of policies and legislation. CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. California has numerous statutes, regulations, and executive orders aimed at reducing the State's GHG emissions. Some of the major initiatives are summarized below.

2.2.2.1 Executive Order S-3-05

In 2005, Governor Schwarzenegger issued Executive Order (EO) S-3-05, which identifies Statewide GHG emission reduction targets to achieve long-term climate stabilization as follows.

- Reduce GHG emissions to 1990 levels by 2020; and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

In response to EO S-3-05, California Environmental Protection Agency (CalEPA) created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report").[51] The 2006 CAT Report identified a recommended list of strategies that the State could pursue to reduce GHG emissions. These are strategies that could be implemented by various State agencies to ensure that the emission reduction targets in

[51] California Environmental Protection Agency (CalEPA). Climate Action Team Report to Governor Schwarzenegger and the Legislature. March 2006. Available at: http://s3-us-west-2.amazonaws.com/ucldc-nuxeo-ref-media/0bdec21c-ca2b-4f4d-9e11-35935ac4cf5f. Accessed: December 2023.

EO S-3-05 are met and can be met with existing authority of the State agencies. The strategies include, but are not limited to, the reduction of passenger and light-duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture.

2.2.2.2 Assembly Bill 32

Assembly Bill (AB) 32 (Nunez, 2006), the California Global Warming Solutions Act of 2006, was enacted after considerable study and expert testimony before the Legislature. The heart of AB 32 is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. In order to achieve this reduction mandate, AB 32 required CARB to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.

In 2007, CARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline. CARB's adoption of this limit was in accordance with Health & Safety Code Section 38550, as codified through enactment of AB 32.

Per Health & Safety Code Section 38561(b), CARB also is required to prepare, approve and amend a scoping plan that identifies and makes recommendations on "direct emission reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and nonmonetary incentives for sources and categories of sources that [CARB] finds are necessary or desirable to facilitate the achievement of the maximum feasible and cost-effective reductions of GHG emissions by 2020."

2.2.2.3 SB 605 - Short-lived Climate Pollutants (SLCP)

Short-lived climate pollutants (i.e., black carbon, fluorinated gases, and methane) are powerful climate forcers that remain in the atmosphere for a much shorter period than longer-lived climate pollutants. Their relative potency, when measured in terms of how they heat the atmosphere, can be tens, hundreds, or even thousands of times greater than that of CO_2. The impacts of short-lived climate pollutants are especially strong over the short term. Reducing these emissions can make an immediate beneficial impact on climate change.[52] Governor Brown signed Senate Bill (SB) 605 on September 21, 2014, directing CARB to develop a Short-Lived Climate Pollutant Strategy by January 1, 2016. On May 7, 2015, CARB released a concept paper for reducing emissions of these substances. In September 2015, CARB released a draft of their Short-Lived Climate Pollutant Strategy. Several updates to the draft have been made since September 2015, with the most current version dated March 2017. The Strategy aims for a 40 percent reduction in methane and HFC emissions below 2013 levels by 2030 and a 50 percent reduction in anthropogenic emissions of black carbon below 2013 levels by 2030.[53]

2.2.2.4 Cap-and-Trade Program

California's Cap-and-Trade Program (Cal. Code Regs., tit. 17, §§ 95800-96022) regulates the emissions of large electric power plants, large industrial plants, and fuel distributors

[52] CARB. 2016. Reducing Short-Lived Climate Pollutants in California. Available at: https://www.arb.ca.gov/cc/shortlived/shortlived.htm. Accessed: December 2023.

[53] CARB. 2017. Short-Lived Climate Pollutant Reduction Strategy. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf. Accessed: December 2023.

(including transportation fuel and natural gas). These sources are responsible for about 85 percent of the State's total GHG emissions inventory.[54] As described by CARB:

> "Cap-and-trade is a market-based regulation that is designed to reduce [GHGs] from multiple sources. Cap-and-trade sets a firm limit or cap on GHGs and minimize[s] the compliance costs of achieving AB 32 goals. The cap will decline approximately 3 percent each year beginning in 2013. Trading creates incentives to reduce GHGs below allowable levels through investments in clean technologies. With a carbon market, a price on carbon is established for GHGs. Market forces spur technological innovation and investments in clean energy. Cap-and-trade is an environmentally effective and economically efficient response to climate change."[55]

In the Cap-and-Trade Program, the State regulates the quantity of emissions by determining, in advance, how many allowances to issue—i.e., setting the "cap." Each allowance is essentially a permit issued by the State authorizing a certain quantity of GHG emissions. There are only a finite number of allowances, ensuring that covered entities may only lawfully emit a certain quantity of GHGs. If a covered entity wishes to emit carbon, it must obtain allowances to authorize those emissions.

Importantly, the Cap-and-Trade Program has been designed to provide a firm cap, ensuring that the 2020 statewide emissions limit identified by CARB in the 2008 Scoping Plan will *not* be exceeded.[56] Thus, for the emission sources covered by the Program, which are nearly all of the sources associated with land use development projects, compliance with AB 32's 2020 mandate is assured by the Cap-and-Trade Program.

AB 398 (2017) extended the statutorily defined horizon year of the Cap-and-Trade Program to December 31, 2030, thereby facilitating continued reliance on the Cap-and-Trade Program for purposes of achieving SB 32's 2030 statewide reduction target.

2.2.2.5 Executive Order B-30-15

In April 2015, Governor Brown signed EO B-30-15, which established the following GHG emission reduction goal for California: by 2030, reduce GHG emissions to 40 percent below 1990 levels. This EO also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in EO S-3-05 (see discussion above). Additionally, the EO directed CARB to update its Scoping Plan (see discussion above) to address the 2030 goal.

2.2.2.6 Senate Bill 32 and Assembly Bill 197

Enacted in 2016, SB 32 (Pavley, 2016) codifies the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030.

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[54] CARB. 2015. Overview of ARB Emissions Trading Program. February 9. Available at: https://ww2.arb.ca.gov/sites/default/files/cap-and-trade/guidance/cap_trade_overview.pdf. Accessed: December 2023.

[55] CARB. Cap-and-Trade Program. Available at: https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program. Accessed: December 2023.

[56] CARB. 2008. Climate Change Scoping Plan: A Framework for Change. December. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed: December 2023.

SB 32 was coupled with a companion bill: AB 197 (Garcia, 2016). Designed to improve the transparency of CARB's regulatory and policy-oriented processes, AB 197 created the Joint Legislative Committee on Climate Change Policies, a committee with the responsibility to ascertain facts and make recommendations to the Legislature concerning statewide programs, policies, and investments related to climate change. AB 197 also requires CARB to make certain GHG emissions inventory data publicly available on its web site; consider the social costs of GHG emissions when adopting rules and regulations designed to achieve GHG emission reductions; and include specified information in all Scoping Plan updates for the emission reduction measures contained therein.

In November 2017, CARB published California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), which identifies CARB's strategy for achieving the State's 2030 GHG target as established in Senate Bill (SB) 32.[57] The strategy includes continuation of the Cap-and-Trade Program through 2030, a Mobile Source Strategy that includes strategies targeted to increase ZEV fleet penetration, and a more stringent target for the Low Carbon Fuel Standard by 2030. The Plan also incorporates approaches to cutting short-lived climate pollutants (SLCPs), acknowledges the need for reducing emissions in agriculture, and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon.

2.2.2.7 Executive Order B-55-18

In September 2018, Governor Brown signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This EO directs CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

In January 2019, CARB kicked off workshops regarding carbon neutrality in California,[58] during which CARB staff explained that the definitional parameters and meaning of the term – carbon neutrality – are still being explored. CARB held additional workshops throughout 2019 and 2020 to explore specific topics related to the pursuit of carbon neutrality, engage with other experts in the field and stakeholders, and conduct research to ensure that any path to carbon neutrality balances scientific, economic, and social justice principles.

2.2.2.8 Assembly Bill 1279

Assembly Bill (AB) 1279, the California Climate Crisis Act, was enacted in September 2022. The bill declares the policy of the state to achieve net-zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter. Additionally, the bill requires that by 2045, statewide anthropogenic GHG emissions be reduced to at least 85% below 1990 levels.

In November 2022, CARB approved California's 2022 Scoping Plan for Achieving Carbon Neutrality (Third Update). This update extends the previous Scoping Plans and lays out a path to achieve carbon neutrality no later than 2045, as directed by AB 1279. The previous 2017 Scoping Plan identified a technologically feasible and cost-effective path to achieve the

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[57] CARB. 2017. California's 2017 Climate Change Scoping Plan. November. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed: December 2023.

[58] CARB. 2019. Carbon Neutrality in California Context Webinar. January 23. Available at: https://www.arb.ca.gov/cc/scopingplan/meetings/012319/cneutrality_ca_script.pdf. Accessed: December 2023.

2030 GHG reduction target by leveraging existing programs such as the Renewables Portfolio Standard, Advanced Clean Cars, Low Carbon Fuel Standard, Short-Lived Climate Pollutant (SLCP) Reduction Strategy, Cap-and-Trade Program, and a Mobile Source Strategy that included strategies targeted to increase ZEV fleet penetration. The 2022 Scoping Plan looks toward the 2045 climate goals and the deeper GHG reductions needed to meet the state's statutory carbon neutrality target specified in AB 1279 and EO B-55-18. The 2022 Scoping Plan provides a sector-by-sector roadmap for achieving these goals, focusing on technological feasibility, cost-effectiveness and equity. The Plan's Appendix D makes non-binding suggestions that local agencies, such as the City of Belmont, may consider as they identify significance thresholds and mitigation measures for GHG impacts. The 2022 Scoping Plan suggests, but does not mandate, measures related to renewable energy, the low carbon fuel standard, cleaner vehicles and fuels, short-lived climate pollutants, and natural and working lands that could be relevant to the proposed project.

2.2.2.9 Energy Sources and Consumption

a) Renewables Portfolio Standard

As most recently amended by SB 100 (2018) and SB 1020 (2022), California's Renewables Portfolio Standard requires retail sellers of electric services and local publicly-owned electric utilities to increase procurement from eligible renewable energy resources to 44 percent of total retail sales by 2024; 50 percent by 2026; 52 percent by 2027; 60 percent by 2030; 90 percent by 2035; 95 percent by 2040; and 100 percent by 2045. By 2035, 100 percent of electricity procured by state agencies shall be from renewables.

In March 2021, CEC, the California Public Utilities Commission (CPUC) and CARB released a joint-agency report evaluating the current feasibility of achieving the energy resource and GHG reductions goals of SB 100. The report finds that SB 100 is technically feasible when analyzed under scenarios of varying timelines, advancements in energy generation technology, and energy source portfolios. Under the SB 100 Core Scenario, it is anticipated that California will need to triple its current electricity power capacity.[59]

b) Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations regulates the design of building shells and building components. The standards were established in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated triennially. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods for building features such as space conditioning, water heating, lighting, and whole envelope. The 2005, 2008, and 2013 updates to the efficiency standards included provisions such as cool roofs on commercial buildings, increased use of skylights, and higher efficiency lighting, Heating, Ventilation, and Air Conditioning (HVAC) systems, and water heating systems. Additionally, some standards focused on larger energy-saving concepts such as reducing loads at peak periods and seasons and improving the quality of such energy-saving installations. Past updates to the Title 24 standards have proven very effective in reducing building energy use, with the 2013 update estimated to reduce energy consumption in residential buildings by 25% and energy

[59] CEC. 2021. 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment. March 15. Available at: https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity. Accessed: December 2023.

consumption in commercial buildings by 30%, relative to the 2008 standards.[60] The 2016 updates included additional high efficiency lighting requirements, high performance attic and walls, and higher efficiency water and space heaters. The 2016 standards were expected to reduce residential electricity consumption by 28% and non-residential electricity by 5%.[61] The 2019 standards included requirements for photovoltaic systems for new homes, high efficiency lighting, high performance attics and walls, high efficiency water and space heaters, and high efficiency air filters. The 2019 standards were expected to reduce high-rise residential and non-residential electricity consumption by 10.7% and natural gas consumption by 1%.[62]

The CEC's 2022 Building Energy Efficiency Standards, which became effective January 1, 2023, are the currently applicable version of these standards. The 2022 update aims to expand solar standards, promote on-site energy storage to lower utility costs and strengthen the grid, strengthen ventilation standards to improve indoor air quality, and encourage the use of heat pump technology.[63] Specific to non-residential land uses, the CEC's 2022 standards prescribe requirements for the design and installation of building envelopes, ventilation, space-conditioning and service water-heating systems and equipment.[64] Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24), commonly referred to as CalGreen Building Standard (CalGreen), establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. Like Part 6 of Title 24, the CalGreen standards are updated on a triennial basis, with increasing energy savings and efficiencies associated with each code update.

c) Appliance Standards

The CEC periodically amends and enforces Appliance Efficiency Regulations contained in Title 20 of the California Code of Regulations. The regulations establish water and energy efficiency standards for both federally-regulated appliances and non-federally regulated appliances. The regulations cover numerous categories of appliances (e.g., refrigerators;

[60] CEC. 2012. Energy Commission Approves More Efficient Buildings for California's Future. Available at: https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C17.pdf. Accessed: December 2023.

[61] CEC. 2015. 2016 Building Energy Efficiency Standards Adoption Hearing. Available at: https://web.archive.org/web/20190602115405/http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf. Accessed: December 2023.

[62] CEC. 2018. 2019 Title 24 Impact Analysis. June. Available at: https://web.archive.org/web/20190601203553/https://www.energy.ca.gov/title24/2019standards/post_adoption/documents/2019_Impact_Analysis_Final_Report_2018-06-29.pdf. Accessed: December 2023.

[63] CEC. 2022. 2022 Building Energy Efficiency Standards. Available at: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency. Accessed: December 2023.[64] CEC. 2022. 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: https://www.energy.ca.gov/sites/default/files/2022-12/CEC-400-2022-010_CMF.pdf. Accessed: January 2024.

[64] CEC. 2022. 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: https://www.energy.ca.gov/sites/default/files/2022-12/CEC-400-2022-010_CMF.pdf. Accessed: January 2024.

plumbing fixtures; dishwashers; clothes washer and dryers; televisions) and apply to appliances offered for sale in California.[65]

2.2.2.10 Mobile Sources

a) Sustainable Communities Strategy Plans

SB 375 (Steinberg, 2008), the Sustainable Communities and Climate Protection Act, coordinates land use planning, regional transportation plans, and funding priorities to reduce GHG emissions from passenger vehicles through better-integrated regional transportation, land use, and housing planning that provides easier access to jobs, services, public transit, and active transportation options. SB 375 specifically requires the Metropolitan Planning Organization relevant to the Project area (here, the Metropolitan Transportation Commission/Association of Bay Area Governments [MTC/ABAG]) to include a Sustainable Communities Strategy in its Regional Transportation Plan (RTP) that, if implemented, will achieve GHG emission reduction targets set by CARB by reducing vehicle miles traveled from light-duty vehicles through the development of more compact, complete, and efficient communities.

For the area under MTC/ABAG's jurisdiction, including the Project site, CARB originally adopted regional targets for reduction of mobile source-related GHG emissions of 7 percent for 2020 and 15 percent for 2035. The targets are expressed as a percentage change in per capita passenger vehicle GHG emissions relative to 2005 emissions levels. These original targets were in place through September 30, 2018. In March 2018, CARB approved updated regional targets of 10% for 2020 and 19% for 2035 for MTC/ABAG, which apply to future RTP/SCS planning cycles beginning October 1, 2018.[66]

b) Senate Bill 743

Public Resources Code Section 21099(c)(1), enacted through SB 743 (Steinberg, 2013), authorized the Governor's Office of Planning and Research (OPR) to establish "alternative metrics to the metrics used for traffic levels of service for transportation impacts outside transit priority areas." SB 743 reflects a legislative policy to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions. As finalized in December 2018, amendments to the State California Environmental Quality Act (CEQA) Guidelines adopted in furtherance of SB 743 establish vehicle miles traveled (VMT), in lieu of level of service, as the new metric for transportation analysis.(See CEQA Guidelines Section 16064.3.)

c) California's Pavley Standards

AB 1493 (Pavley, 2002) required CARB to adopt regulations to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks for model years 2009–2016. CARB obtained a waiver from the USEPA that allows for implementation of these regulations notwithstanding possible federal pre-emption concerns.

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[65] CEC. 2022. Title 20 Appliance Efficiency Program. Available at: https://www.energy.ca.gov/rules-and-regulations/appliance-efficiency-regulations-title-20. Accessed: December 2023.

[66] CARB. 2022. Regional Plan Targets. Available at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets. Accessed: December 2023.

d) Low Carbon Fuel Standard

EO S-1-07, as issued by Governor Schwarzenegger, called for a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB by 2020.[67] In response, CARB approved the Low Carbon Fuel Standard (LCFS) regulations in 2009, which became fully effective in April 2010. Thereafter, a lawsuit was filed challenging CARB's adoption of the regulations; and, in 2013, a court order was issued compelling CARB to remedy substantive and procedural defects of the LCFS adoption process under CEQA.[68] However, the court allowed implementation of the LCFS to continue pending correction of the identified defects. In September 2015, CARB re-adopted the LCFS regulations. In 2017, the LCFS was once again tried in court, but allowed to remain in effect while CARB performed additional CEQA review.[69] As it stands, the LCFS would reduce GHG emissions by reducing the carbon intensity of transportation fuels used in California by at least 10% by 2020 and, as most recently amended in 2018, by at least 20% by 2030.

e) California's Advanced Clean Cars

In 2012, CARB approved the Advanced Clean Cars (ACC I) program, a new emissions-control program for non-commercial passenger vehicles and light-duty truck for model years 2015-2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZEVs. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions. In 2022, the Advanced Clean Cars II (ACC II) regulations were adopted, imposing new low emission vehicles (LEV) and ZEV standards for model years 2026-2035 with the goal that by 2035 all new passenger cars, trucks, and SUVs sold in California will be ZEVs.[70] ACC II integrates stricter emission standards for gasoline vehicles for gasoline vehicles, and require higher penetration rate of electric and hydrogen fuel cell vehicles. The annual carbon dioxide emission reduction benefits are estimated to be 65 million metric tons in 2040, combined with other air quality and community co-benefits.[71]

f) Zero Emission Vehicles

ZEVs include hydrogen fuel cell electric vehicles and plug-in electric vehicles, such as battery electric vehicles and plug-in hybrid-electric vehicles.

In 2012, Governor Brown issued EO B-16-2012, which calls for the increased penetration of ZEVs into California's vehicle fleet to help California achieve a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of that statewide target for the transportation sector, the EO also calls upon CARB, the CEC, and the CPUC to establish benchmarks that will: (1) allow over 1.5 million ZEVs to be on California roadways by 2025, and (2) provide the State's residents with easy access to ZEV infrastructure. EO B-16-2012 specifically directed California to "encourage the

[67] Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel.

[68] *POET, LLC v. CARB* (2013) 217 Cal.App.4th 1214.

[69] *POET, LLC v. CARB* (2017) 218 Cal.App.4th 681.

[70] CARB. Advanced Clean Cars II Program. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii. Accessed: November 2023.

[71] CARB. 2022. Advanced Clean Cars II, Proposed Amendments to the Low Emissions, Zero Emissions, and Associated Vehicle Regulations, Standardized Regulatory Impact Assessment (SRIA). Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appc1.pdf. Accessed November 2023.

development and success of ZEVs to protect the environment, stimulate economic growth, and improve the quality of life in the State."[72]

In 2018, Governor Brown also issued EO B-48-18, which launched an eight-year initiative to accelerate the sales of ZEVs through a mix of rebate programs and infrastructure improvements. The EO also sets a new target of five million ZEVs in California by 2030 and includes funding for multiple state agencies to increase electric vehicle (EV) charging infrastructure and provide purchase rebates/incentives.

In furtherance of the State's ZEV penetration goals, in February 2013, the Governor's Interagency Working Group on Zero-emission Vehicles issued the *2013 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California* roadways *by 2025*.[73] The 2013 ZEV Action Plan identifies four broad goals for State government to advance ZEVs: 1) Complete needed infrastructure and planning; 2) Expand consumer awareness and demand; 3) Transform fleets; and 4) Grow jobs and investment in the private sector. As part of these goals, some highlighted strategies and actions include: i) supporting ZEV infrastructure planning and investment by private entities; ii) enabling universal access to ZEV infrastructure for California drivers; iii) reducing up-front purchase costs for ZEVs; iv) promoting consumer awareness of ZEVs; and v) helping to expand ZEVs in bus fleets. The Action Plan discusses the challenges of ZEV expansion, which include the need to enable electric vehicle chargers in homes, increase consumer awareness, address up-front costs and operational limitations, and address that ZEVs are not commercially available for all categories of vehicles.

In October 2016, the Governor's Interagency Working Group on Zero-emission Vehicles issued the *2016 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California* roadways *by 2025*.[74] This report provides an update on progress toward achieving the 2013 goals and highlights the following four top priorities for the upcoming years: 1) Raise consumer awareness and education about ZEVs; 2) Ensure ZEVs are accessible to a broad range of Californians; 3) Make ZEV technologies commercially viable in targeted applications in the medium-duty, heavy-duty, and freight sectors; and 4) Aid ZEV market growth beyond California. The broad goals to advance ZEV adoption are: i) achieve mainstream consumer awareness of ZEV options and benefits; ii) make ZEVs an affordable and attractive option for drivers; iii) ensure convenient charging and fueling infrastructure for greatly expanded use of ZEVs; iv) maximize economic and job opportunities from ZEV technologies; v) bolster ZEV market growth outside of California; and vi) lead by example by integrating ZEVs into State government. The goals and strategies proposed in the 2013 Action Plan will continue to be implemented; however, additional strategies are proposed to help achieve the new goals, including setting targets to increase home charging stations in multiunit dwellings and disadvantaged communities and for public transit and school bus electrification. The 2016 Action Plan describes challenges toward achieving the 2025 goal of 1.5 million ZEVs in California, such as that most consumers are still not aware of the benefits

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[72] Executive Order B-16-2012. March 23, 2012. Available at: https://www.ca.gov/archive/gov39/2012/03/23/news17472/. Accessed: December 2023.

[73] Governor's Interagency Working Group on Zero-emission Vehicles Action Plan. February 2013. Available at: http://opr.ca.gov/docs/Governors_Office_ZEV_Action_Plan_(02-13).pdf. Accessed: December 2023.

[74] Governor's Interagency Working Group on Zero-emission Vehicles Action Plan. October 2016. Available at: https://www.ca.gov/archive/gov39/wp-content/uploads/2018/01/2016_ZEV_Action_Plan-1.pdf. Accessed: December 2023.

of passenger ZEVs and that over 1,000,000 charge points will be needed at homes, workplaces, and public locations but only 11,000 non-home charge points are installed as stated in the 2016 ZEV Action Plan.

In September 2018, the Governor's Interagency Working Group on Zero-Emission Vehicles published the 2018 ZEV Action Plan Priorities Update.[75] This update is the result of Governor Brown's directive to update the 2016 Zero-Emission Vehicle Action Plan to help expand private investment in ZEV infrastructure, particularly in low income and disadvantaged communities. The 2018 Priorities Update serves three fundamental purposes: 1) Provide direction to state agencies on the most important actions to be executed in 2018 to enable progress toward the 2025 targets and 2030 Vision; 2) Give stakeholders transparency into the actions state agencies plan to take (or are taking) this year to further the ZEV market; and 3) Create a platform for stakeholder engagement, feedback, and collaboration. As of July 2018, over 410,000 ZEVs have been sold in California, which is approximately 150,000 ZEVs since the publication of the 2016 Action Plan in October 2016.

In June 2020, CARB approved the Advanced Clean Trucks regulation, which has requirements for manufacturer ZEV sales and a one-time reporting requirement for large entities and fleets.[76] The Advanced Clean Truck Regulation is part of a holistic approach to accelerate a large-scale transition of zero-emission medium- and heavy-duty vehicles from Class 2b to Class 8. Manufacturers who certify Class 2b-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% of Class 2b – 3 truck sales, 75% of Class 4 – 8 straight truck sales, and 40% of truck tractor sales. Large employers, including retailers, manufacturers, brokers and others, are required to report information about shipments and shuttle services. Fleet owners with 50 or more trucks are required to report about their existing fleet operations. This information helps to identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

California is incentivizing the purchase of ZEVs through implementation of the Clean Vehicle Rebate Project, which is administered by a non-profit organization (The Center for Sustainable Energy) for CARB and currently subsidizes the purchase of passenger near-zero and ZEVs as follows:

- Hydrogen Fuel Cell Electric Vehicles: $5,000;
- Battery Electric Vehicles: $2,500;
- Plug-In Hybrid-Electric Vehicles: $1,500; and
- Neighborhood Electric Vehicles and Zero Emission Motorcycles: $900.

[75] Governor's Interagency Working Group on Zero-emission Vehicles Action Plan: Priorities Update. September 2018. Available at: https://static.business.ca.gov/wp-content/uploads/2019/12/2018-ZEV-Action-Plan-Priorities-Update.pdf. Accessed: December 2023.

[76] CARB. 2023. Advanced Clean Trucks. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks. Accessed: December 2023.

In March 2017, CARB received Volkswagen's (VW) first 30-month ZEV Investment Plan (Plan).[77] This Plan is required by California's partial settlement with VW resulting from VW's use of illegal devices in its 2.0-liter (2.0L) diesel cars sold in the State from model years 2009 to 2015. The Plan describes how VW is proposing to spend the first $200 million in California on ZEV charging infrastructure (including the development and maintenance of ZEV charging stations), public awareness, increasing ZEV access, and a green city demonstration. In June 2017, Electrify America (a subsidiary of VW) provided CARB with additional information on the Plan.[78] CARB approved the first of the four plans in July 2017.[79]

In its 2014 First Update, CARB recognized that the light-duty vehicle fleet "will need to become largely electrified by 2050 in order to meet California's emission reduction goals."[80] Accordingly, CARB's ACC program – summarized above – requires about 15 percent of new cars sold in California in 2025 to be a plug-in hybrid, battery electric or fuel cell vehicle.[81]

Other statewide and regional initiatives that spur ZEV uptake include the following:

- CARB currently subsidizes the purchase of passenger near-zero and zero emission vehicles, and provides access to high-occupancy vehicle lanes to ZEV drivers.
- The VW settlement will result in $800 million in ZEV projects in California over the next ten years, with a focus on increasing public awareness and infrastructure in the first funding cycle.[82]
- The CalGreen standards require new residential and non-residential construction to be pre-wired to facilitate the future installation and use of electric vehicle chargers (see Section 4.106.4 and Section 5.106.5.3 of 2016 CalGreen standards for the residential and non-residential pre-wiring requirements, respectively).

In January 2017, three of California's largest utilities submitted proposals to the CPUC to electrify the State's transportation sector through more than $1 billion in investments:

- Southern California Edison (SCE) filed an application to expand electric transportation in its service area. Some of SCE's proposals include monetary rewards to rideshare drivers

[77] VOLKSWAGEN, Group of America. 2017. California ZEV Investment Plan: Cycle 1. March 8. Available at: https://www.electrifyamerica.com/assets/pdf/California%20ZEV%20Investment%20Plan%20Cycle%201.3bc672a3.pdf. Accessed: December 2023.

[78] Electrify America. 2017. Supplement to the California ZEV Investment Plan: Cycle 1. June 29. Available at: https://www.electrifyamerica.com/assets/pdf/Cycle%201%20CA%20ZEV%20Invest%20Plan%20Supplement.a92e7705.pdf. Accessed: December 2023.

[79] CARB, 2017. CARB Approves $200 Million VW Zero-Emission Vehicle Investment in California. July 27. Available at: https://ww2.arb.ca.gov/news/carb-approves-200-million-vw-zero-emission-vehicle-investment-california. Accessed: December 2023.

[80] CARB. 2014. First Update to the Climate Change Scoping Plan: Building on the Framework. May. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf .Accessed: December 2023.

[81] Ibid. p. 47.

[82] CARB. Volkswagen Settlement – California ZEV Investments webpage, available at: https://ww2.arb.ca.gov/our-work/programs/volkswagen-zero-emission-vehicle-zev-investment-commitment. Accessed: December 2023.

who use an electric vehicle, additional fast charge infrastructure at targeted locations within the region, and rates that are designed to incentivize electric vehicle adoption.[83]

- Pacific Gas and Electric (PG&E) submitted an application that aims to expand the electrification of medium- and heavy-duty vehicle fleets, expand fast-charging stations that can refuel EVs in 20-30 minutes, and explore new uses for vehicle electrification.[84]
- San Diego Gas & Electric (SDG&E) submitted an application to install tens of thousands of charging stations in its service area to boost the transition to ZEVs, trucks, shuttles and delivery fleets.[85]

On September 23, 2020, California Governor Gavin Newsom issued Executive Order N-79-20, which entails the following actions:

- All new passenger vehicles sold in California be zero-emission by 2035
- All medium- and heavy-duty vehicles be zero-emission where feasible by 2045
- All off-road vehicles and equipment be zero-emission where feasible by 2035

Governor Newsom ordered extensive interagency efforts to support the Executive Order, including evaluations of technological feasibility and cost-effectiveness, expansion of EV charging options and affordable fueling, as well as identification of near-term strategies to increase zero-emission public transportation options.

The Executive Order was generally aimed at transitioning away from fossil fuel dependence in the State, with emphasis on transportation initiatives. However, Governor Newsom addressed efforts to repurpose oil production facilities and extraction sites while continuing the State’s existing goals to reduce the carbon intensity of fuels.[86]

g) ATCM: Transportation Refrigeration Unit

This Airborne Toxic Control Measure (ATCM) applies to transportation refrigeration units (TRUs), which are commonly found on various transported containers, including truck vans, semi-truck trailers, shipping containers and railcars. TRUs are temperature control systems powered by small (typically 9 to 36 horsepower) diesel internal combustion engines. Despite their small individual size, TRUs are often active in dense congregations around distribution centers, truck stops, and other facilities, resulting in a significantly greater combined loading. This ATCM focused on the reduction of diesel particulate emissions as a toxic in order to improve air quality around these centers. Additionally, transitioning diesel TRUs to zero-emissions technologies is a priority because of Executive Order N-79-20, which set a goal of 100 percent zero-emission off-road vehicles and equipment in California by 2035.

[83] SCE. 2017. Application of Southern California Edison Company (U 338-E) for Approval of its 2017 Transportation Electrification Proposals. January 20. Available at: https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M172/K519/172519265.PDF. Accessed: December 2023.

[84] PG&E. 2017. In the Matter of the Application of Pacific Gas and Electric Company for Approval of its Senate Bill 350 Transportation Electrification Program. January 20. Available at: https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M179/K246/179246814.PDF. Accessed: December 2023.

[85] SDG&E. 2017. Application of San Diego Gas & Electric Company (U902E) for Approval of SB 350 Transportation Electrification Proposals. January 20. Available at: https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M201/K002/201002865.PDF. Accessed: December 2023.

[86] State of California. 2020. Executive Order N-79-20. Available at: https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf. Accessed: December 2023.

2.2.2.11 Water

In January 2014, Governor Brown signed EO B-29-15, which directed the State Water Resources Control Board to impose restrictions to reduce residential potable urban water usage; to implement water efficiency measures at commercial, industrial, and institutional properties; and to prohibit irrigation with potable water for certain uses. In addition, this directed the California Department of Water Resources to lead a statewide initiative to replace laws and ornamental turfs with drought tolerant landscapes.

Pursuant to the EO B-29-15, water-related standards were adopted as amendments to the 2013 CalGreen Code and carried over into the 2016 code.

Following EO-B-29-2015, Governor Brown signed EO-B-37-16 in May 2016 to promote more conscious consumer water use and to improve agricultural water use efficiency and drought planning.

2.2.2.12 Solid Waste Diversion

The California Integrated Waste Management Act of 1989, as modified by AB 341 (Chesbro, 2011), requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; (2) diversion of 50 percent of all solid waste on and after January 1, 2000; and (3) source reduction, recycling and composting of 75 percent of all solid waste on or after 2020, and annually thereafter. California Department of Resources Recycling and Recovery (CalRecycle) is required to develop strategies, including source reduction, recycling, and composting activities, to achieve the 2020 goal.

CalRecycle published a discussion document, entitled *California's New Goal: 75 Percent Recycling,* which identified concepts that would assist the State in reaching the 75 percent goal by 2020. Subsequently, in August 2015, CalRecycle released the *AB 341 Report to the Legislature*, which identifies five priority strategies for achievement of the 75 percent goal: (1) moving organics out of landfills; (2) expanding recycling/manufacturing infrastructure; (3) exploring new approaches for State and local funding of sustainable waste management programs; (4) promoting State procurement of post-consumer recycled content products; and (5) promoting extended producer responsibility.

2.2.2.13 Climate Adaptation Strategy

The 2021 California Climate Adaptation Strategy, as outlined on the California Natural Resource Agency's website[87], is as an interactive website that outlines the state's key climate resilience priorities, includes specific and measurable steps, and serves as a framework for action across sectors and regions in California.[88]

The priorities outlined in the Strategy's website are as follows: 1) Strengthen Protections for Climate Vulnerable Communities, 2) Bolster Public Health and Safety to Protect Against Increasing Climate Risks, 3) Build a Climate Resilient Economy, 4) Accelerate Nature-Based Climate Solutions and Strengthen Climate Resilience of Natural Systems, 5) Make Decisions

[87] California Natural Resources Agency. 2021. California Climate Adaptation Strategy. Available at: https://resources.ca.gov/Initiatives/Building-Climate-Resilience/2021-State-Adaptation-Strategy-Update. Accessed: December 2023.

[88] State of California. 2021. California Climate Adaptation Strategy. Available at: https://climateresilience.ca.gov/. Accessed: December 2023.

based on the Best Available Climate Science, and 6) Partner and Collaborate to Leverage Resources.

2.2.3 Regional

2.2.3.1 MTC/ABAG Regional Transportation Plan and Sustainable Communities Strategy

As previously discussed, SB 375 requires MTC/ABAG to incorporate a Sustainable Communities Strategy into its RTP that achieves the GHG emission reduction targets set by CARB. MTC/ABAG's Sustainable Communities Strategy was first included in the 2013 Regional Transportation Plan & Sustainable Communities Strategy (RTP/SCS), which was adopted by MTC/ABAG in June 2013. The original plan has since been superseded by the RTP/SCS adopted by MTC/ABAG in October 2021 called Plan Bay Area 2050.

In general, the goals and policies of the Sustainable Communities Strategy are to improve mobility, accessibility, reliability, efficiency, liveability, sustainability, and equity. The Sustainable Communities Strategy adopted by MTC/ABAG is expected to reduce per capita transportation emissions by 19% by 2035, when compared to 2005 baseline levels.

Pursuant to Government Code Section 65080(b)(2)(K), a Sustainable Communities Strategy does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it.

2.2.3.2 Bay Area Air Quality Management District

While CARB is responsible for the regulation of mobile emission sources within the State, local air quality management districts (AQMDs) and air pollution control districts (APCDs) are responsible for enforcing standards and regulating stationary sources. The Project area is located within the San Francisco Bay Area Air Basin and is subject to the Bay Area Air Quality Management District (BAAQMD) guidelines and regulations. On April 20, 2022, the BAAQMD Board of Directors held a public meeting and adopted the *CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans* (Guidance).[89]

2.2.4 Local

2.2.4.1 Solano County Climate Action Plan

In 2011, Solano County created a countywide Climate Action Plan to address climate change locally and reduce greenhouse gas emissions within the county. The plan proposes 31 measures and 94 implementing actions that can be taken to reduce countywide emissions and contribution to global climate change. California cities and counties are encouraged and incentivized by the State to adopt climate action plans. Solano County's 2008 General Plan required the development of this Climate Action Plan along with a Sea Level Rise Strategic Program. Because the Project site is in unincorporated Solano County, this Climate Action Plan has jurisdiction.

[89] BAAQMD. 2022. CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en. Accessed December 2023.

2.2.4.2 City of Suisun City 2035 General Plan

The City of Suisun City General Plan summarizes and plans for potential environmental impacts in its jurisdiction.[90] The General Plan Environmental Impact Report (EIR) provides possible mitigation strategies, and the regulatory structures that exist in concert with the General Plan. The plan identifies conversion of important farmland to non-agricultural use, increased demand for water, local mobile source carbon monoxide emissions, loss and degradation of habitat, and increased energy demand as key issues that will shape the city's growth. In addition, the General Plan notes strategies that can be employed to minimize these impacts, such as preserving and enhancing Suisun City's Historic Downtown, protecting open spaces and farmland, complying with existing air, water, and environmental regulations, and undertaking strategic land use change.

2.2.5 Other CEQA Guidance

2.2.5.1 CAPCOA 2021 Handbook for Analyzing GHG Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity

In December 2021, the California Air Pollution Control Officers Association (CAPCOA) published the final draft of the *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* report, which builds upon CAPCOA's previous efforts to provide accurate and reliable quantification measures.[91] This Handbook identifies and evaluates new and emerging GHG reduction measures and removed outdated measures from the 2010 Handbook. The purpose of the Handbook is to provide local governments with accurate, reliable, and standardized emission reduction quantification methods for land use, climate action, and long-term planning. It also aims to support and enhance the consideration of climate vulnerabilities, health, and equity during the planning process.

[90] City of Suisun City 2035 General Plan. Available at: https://www.suisun.com/Departments/Development-Services/Planning/General-Plan. Accessed: December 2023.

[91] CAPCOA. 2021. Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity. Available at: http://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf. Accessed: December 2023.

3. SIGNIFICANCE THRESHOLDS

3.1 CEQA Guidelines on GHG Emissions

In 2007, SB 97 was enacted and directed OPR and the California Natural Resources Agency to prepare amendments to the CEQA Guidelines addressing the analysis of GHG emissions under CEQA. Following formal rulemaking, a series of amendments to the CEQA Guidelines were adopted to provide the general framework for the analysis of GHG emissions and became effective in 2010. The amendments do not provide a mandatory, quantitative rubric for GHG emissions analysis, but instead provide general guidance and recognize long-standing CEQA principles regarding the discretion afforded to lead agencies where supported by substantial evidence. More specifically, CEQA Guidelines Section 15064.4(a) recognizes that the "determination of the significance" of GHG emissions "calls for careful judgment by the lead agency" in accordance with the more general provisions of CEQA Guidelines Section 15064; each agency "shall have discretion to determine" whether to conduct quantitative or qualitative analysis, provided its determination is supported by substantial evidence. Section 15064.4 was most recently amended by OPR and the California Natural Resources Agency in December 2018.

The analysis provided in this report evaluates the significance of the Project's GHG emissions by reference to the following questions from Section VIII, Greenhouse Gases, of Appendix G of the CEQA Guidelines:

Threshold 1. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Threshold 2. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

3.2 BAAQMD 2022 Thresholds of Significance for Climate Impacts of Land Use Projects

The BAAQMD recommends methods for analyzing project-related GHGs in CEQA analyses as well as implementation of GHG reduction measures for land use development projects. In April 2022, the BAAQMD adopted CEQA Thresholds of Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. The CEQA thresholds considered state reduction targets (e.g., Senate Bill 32) and the carbon neutrality goal by 2045 and also emphasized (1) avoiding development of fossil fuel infrastructure in new buildings that will be in place for decades and therefore potentially conflicting with carbon neutrality by 2045 and (2) ensuring consistency with a qualified GHG reduction strategy (also known as a Climate Action Plan). According to the thresholds of significance recommended by the BAAQMD, a project would have a less-than-significant impact related to GHG emissions and climate change if it would comply with either of the following options:

A. Projects must include, at a minimum, the following project design elements:

1. Buildings

    a) The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).

    b) The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis require under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

2. Transportation

   a) Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted SB 743 VMT target:

      i. Residential projects: 15 percent below the existing VMT per capita

      ii. Office projects: 15 percent below the existing VMT per employee

      iii. Retail projects: no net increase in existing VMT

   b) Achieve compliance with electric vehicle charging requirements in the most recent adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG Reduction Strategy that meets the criteria under the CEQA Guidelines section 15183.5(b).

As described in Section 2.2.4, Solano County has a Climate Action Plan.[92] This Climate Action Plan serves as an appropriate guiding document for the Project, because the Site is in unincorporated Solano County. Relative to Threshold 1, this Technical Report analyzes the Project's impacts related to GHG emissions and climate change impacts through Option A of the BAAQMD's thresholds of significance for evaluating climate impacts from land use projects and plans, with the following VMT performance standard specific to industrial (warehouse) projects.

3.2.1 Thresholds of Significance for GHG Emissions associated with Vehicle Miles Traveled

The multi-part BAAQMD threshold recommendation of design elements does not specify what level of VMT reduction, vis-à-vis a regional average, should be used for an industrial project such as the proposed Project. Rather, BAAQMD is silent with respect to this particular land use. The project will apply the following to address this issue in context of the BAAQMD GHG Significance threshold:

2. Transportation

   a) Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted SB 743 VMT target:

      i. Residential projects: 15 percent below the existing VMT per capita

      ii. Office projects: 15 percent below the existing VMT per employee

      iii. Retail projects: no net increase in existing VMT

      iv. *Industrial (warehouse) Projects: 15 percent below the existing VMT (accounting for employee and truck trips), and, if this percentage difference is not met, achieve 15 percent below the corresponding GHG emissions.*

In absence of specific guidance for industrial projects, this analysis applies the VMT performance standard described in 2.(a).(iv), above, as a part of the GHG significance

[92] County of Solano. 2011. Climate Action Plan. Available at: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080. Accessed: December 2023.

threshold. Section 3.2.1.1, below, provides an overview of the VMT threshold for industrial (warehouse) projects.

3.2.1.1 Rationale for Threshold of Significance

If the BAAQMD's VMT threshold is to be reasonably adapted to apply to industrial projects, there are four available options. One option is to follow the approach that BAAQMD used for retail projects: to assess whether industrial projects will result in a net increase in existing VMT. A second option is to follow BAAQMD's approach with respect to residential projects: to assess whether industrial projects will result in 15 percent below the existing regional VMT per capita. A third option is to follow BAAQMD's approach with respect to office projects: to assess whether industrial projects will result in VMT 15 percent below the existing VMT per employee. Since the BAAQMD has not established a definitive option for industrial uses, a fourth option is presented that is tailored specifically to industrial uses, which assesses both employee VMT and VMT from heavy-duty trucks.

The fourth option (option iv.) is being pursued in this analysis. Because industrial projects more closely resemble office projects than residential projects, and because the BAAQMD approach for office projects is more conservative than the approach for retail projects, the analysis will conservatively follow a method similar to BAAQMD's approach for office projects – 15 percent below the existing VMT per employee – as the starting point for assessing VMT for industrial uses. But because VMT analyses for office projects typically focus only on *employee* VMT, the analysis here will add an additional step by focusing on *both* employee VMT *and* VMT associated with heavy-duty truck trips coming to and from the Project site. As noted above, industrial land use developments, unlike office projects, tend to generate heavy-duty truck trips in addition to employee trips. The consideration of truck trips makes this approach especially conservative, as truck trips are not always considered in VMT analyses.[93]

As understood herein, moreover, the term "regional" for purposes of calculating VMT "regional average" shall apply to the entire Bay Area. This approach is based on guidance given by the Governor's Office of Planning and Research (OPR) in an online a document entitled, *SB 743 Frequently Asked Questions*, which was intended to supplement the guidance previously set forth in a December 2018 OPR document entitled, *Technical Advisory on Evaluating Transportation Impacts in CEQA*. The following "frequently asked question" and answer are relevant to the two significance thresholds quoted above: "In the VMT Technical Advisory, does the term 'regional' refer to the MPO/RTPA? The answer is Yes. As used in the VMT Technical Advisory, 'regional' refers to the full geography within the

[93] Notably, CEQA Guidelines Section 15064.3(a) states that VMT refers to the amount and distance of *automobile travel* attributable to a project (italics added). The December 2018 OPR *Technical Advisory on Evaluating Transportation Impacts Under CEQA* states that the term "automobile," as used in Section 15064.3(a), refers to on-road passenger vehicles, specifically cars and light trucks; heavy vehicles are not included in the definition.

The Legislature's stated intent in abandoning level of service as a metric for transportation-related impacts, as set forth in Public Resources Code section 21099[b][1], was to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. The GHG emissions of trips associated with heavy vehicles serving industrial uses are addressed through the implementation of statewide programs such as CARB's Sustainable Freight Strategy, which through regulations such as the Truck and Bus Regulation and ACT Regulation will transition a larger and larger portion of heavy-duty trucks operating within California to be electric through 2050. Thus, limiting the VMT analysis to employee automobile travel appears to be consistent with State policy to reduce GHG emissions from land use decisions and the availability of alternatives to automobile travel.

jurisdictional borders of a metropolitan planning organization (MPO) or a regional transportation planning agency (RTPA)." Here, the relevant MPO is the Metropolitan Transportation Commission (MTC), which is the transportation planning, financing and coordinating agency for the nine-county San Francisco Bay Area.

Because the BAAQMD threshold for office projects focuses on only one type of vehicle trip – employee trips – the sole focus on VMT without specifically going beyond VMT to quantify the resultant GHG emissions from VMT is understandable. However, the BAAQMD's VMT threshold is intended to reduce transportation GHG emissions via VMT reductions, along with other regulations, policies, and technological advances to reduce tailpipe GHG emission factors, to level that are consistent with the State's 2030, 2045, and 2050 GHG reduction goals. Therefore, the BAAQMD's VMT threshold is considered in the context of regional GHG reductions in this analysis. Employee VMT that is 15 percent below the regional average would represent GHG emissions that are similarly 15 percent below the regional average for employee trips. Because the analysis here for an industrial use looks at *two* types of vehicle trips – employee trips and heavy-duty truck trips – the analysis here takes four additional analytical steps relating to VMT. These steps are necessary in order to translate VMT numbers in both trip categories into GHG emissions numbers for both trip categories. It is the VMT-generated GHG emissions numbers that are ultimately crucial for assessing the significance of environmental impacts from GHG emissions. In this context, VMT serves as a surrogate for evaluating GHG emissions, given that all vehicles in the State are subject to other regulation, policies, and technological advances on reducing tailpipe GHG emission factors.

The four additional analytical steps are as follows. First, to create a kind of benchmark number for comparison purposes, the analysis quantifies the total GHG emissions that would occur in both categories of vehicle trips (employee trips and heavy-duty truck trips) where the trips in each category are exactly 15 percent below the respective regional averages for each category. This total number represents the combined GHG emissions target that a project needs to reach in order for VMT-related GHG emissions to be less-than-significant. Second, the analysis generates separate GHG emissions calculations for both project-related employee VMT and project-related heavy-truck VMT. Third, the analysis creates a *combined* GHG emissions number consisting of *both* employee-generated GHG emissions and heavy-truck-generated GHG emissions. And fourth, the analysis compares the total combined GHG emissions from the first step (the GHG emission reduction target based on combined employee VMT and heavy-truck VMT where each are 15 percent below the respective regional averages) against the total combined project-related GHG emissions from both categories of VMT (employee VMT and heavy-truck VMT). If the project-specific total combined GHG emissions number is below the target combined GHG emissions number, then overall VMT-related GHG emissions are considered less-than-significant. This can be true even where VMT in one category (e.g., employee VMT) might be less than 15 percent below the regional average for that one category. It is the combined emissions number that matters. Thus, where heavy-truck VMT is substantially more than 15 percent below the applicable regional average, the GHG emissions reductions from this category might more than make up for employee trip VMT somewhat less than 15 percent below the regional average for that category. A mile driven by a heavy-duty truck generates more GHG emissions than a mile driven by an employee in an automobile or light-duty truck.

3.2.2 BAAQMD's Thresholds of Significance for Climate Impacts of Stationary Sources

The BAAQMD's 2022 CEQA Guidelines requires a quantitative evaluation of GHG emissions from new stationary sources through a comparison with the bright-line threshold of 10,000 metric tons of carbon dioxide equivalent (CO2e) per year. This threshold of significance is applicable to only the proposed stationary sources of the Project.

3.2.3 BAAQMD's Guidance on Construction GHG Impacts

BAAQMD recommends that construction GHG emissions should be quantified and disclosed, however, BAAQMD has not developed quantitative thresholds for construction-related GHG emissions.

4. PROJECT GHG EMISSION INVENTORY

4.1 Project GHG Emissions Inventory

This section describes the methodology used to develop the GHG emission inventories associated with the Project, which include one-time emissions (construction emissions and emissions due to vegetation changes) and operational emissions. Sub-categories of GHG operational emissions include: area sources, energy use, stationary sources, water supply and wastewater, solid waste, and mobile sources. Except for the stationary sources, the Project's GHG emissions from construction and operations are disclosed for informational purposes and are not used for impact evaluation consistent with the BAAQMD's guidance.

4.1.1 Measurement and Resources

4.1.1.1 Units of Measurement: Metric Tons of CO_2 and CO_2e

In this report, the term "GHGs" includes gases that contribute to the natural greenhouse effect, such as CO_2, CH_4, N_2O, and water, as well as gases that are only man-made and that are emitted through the use of modern industrial products, such as HFCs and chlorofluorocarbons (CFCs). GHG emissions are typically measured in terms of mass of CO_2e. CO_2e are calculated as the product of the mass of a given GHG and its specific GWP, as described in **Section 2.1**. GWPs of 25 and 298 were used for CH_4 and N_2O, respectively, for this analysis. In many sections of this report, including the final summary sections, emissions are presented in units of CO_2e either because the GWPs of CH_4 and N_2O were accounted for explicitly, or the CH_4 and N_2O are assumed to contribute a negligible amount of GWP when compared to the CO_2 emissions from that particular emissions category.

In this report, a metric ton (MT) refers to one thousand kilograms. Additionally, exact totals presented in all tables and report sections may not equal the sum of components due to independent rounding of numbers.

4.1.1.2 Resources

California Emissions Estimator Model Methodology

Ramboll primarily used the California Emissions Estimator Model (CalEEMod) version 2022.1[94] methodology to assist in quantifying the GHG emissions in the inventories presented in this report for the proposed Project. CalEEMod is a statewide program designed to calculate both criteria air pollutant and GHG emissions from development projects in California. CalEEMod is based on CARB approved Off-Road and On-Road Mobile-Source Emission Factor models (OFFROAD[95] and EMission FACtors model (EMFAC)[96], respectively), and is designed to estimate construction and operational emissions for land use development projects, based on project-specific information and default assumptions. OFFROAD2021 is an emissions factor model used in CalEEMod to calculate emission rates from off-road mobile sources (e.g., construction equipment, agricultural equipment). EMFAC2021 is the emissions factor model used in CalEEMod to calculate emissions rates from on-road vehicles.

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[94] CAPCOA. 2022. California Emissions Estimator Model®. Available at: https://www.caleemod.com/. Accessed: December 2023.

[95] CARB. 2019. MSEI – Off-Road Documentation. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-road-documentation-0. Accessed: September 2023.

[96] CARB. 2022. MSEI – Modeling Tools – EMFAC Software and Technical Support Documentation. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools-emfac-software-and. Accessed: September 2023.

Other Resources

Ramboll directly or indirectly relied on emissions estimation guidance from government-sponsored organizations, government-commissioned studies of energy use patterns, Project-specific studies (e.g., W-Tran's Transportation Impact Analysis[97] and Fehr and Peers' Trip Length Assessment[98] [**Appendix A**]), and emission estimation software as described above. In cases noted below, third-party studies were also relied upon to support analyses and assumptions made outside of the approach described above.

4.1.1.3 Indirect GHG Emissions from Electricity Use

Project-related electricity use results in indirect emissions, due to electricity generation activities occurring at off-site power plant locations. For the Project, electrical power will be supplied by PG&E. The indirect GHG emissions created as a result of Project-related electricity use are calculated through application of the following methodology.

For purposes of electricity use, intensity factors are GHG emission rates from a given source relative to the energy generation activities and are expressed in terms of the amount of GHG released per megawatt of energy produced. The CalEEMod default electricity intensity factors for PG&E in CalEEMod for CO_2, CH_4, and N_2O are 203.98 pounds (lbs) per megawatt-hour (MWh), 0.033 lbs/MWh, and 0.004 lbs/MWh, respectively.[99] PG&E's Power/Utility Protocol (PUP) reports show that renewable energy sources do not result in any new CO_2 emissions.

CalEEMod's CO_2e intensity factor was modified based on PG&E's 2022 Power Content Label for the base plan to account for additional Renewables Portfolio Standard's (RPS) requirement not included in CalEEMod's default assumptions. The intensity factor for CO_2e is 56 lbs/MWh, which accounts for 38% renewable energy sources, 49% nuclear power, 8% of large hydroelectric, and 5% of natural gas combustion in the base plan.[100]

4.1.2 One-Time Emissions

One-time emissions are those emissions that are not reoccurring over the life of the Project. This includes emissions associated with construction and emissions associated with land use changes (i.e., vegetation change).

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[97] W-Trans. 2021. Updated Transportation Assumptions for the Suisun Logistics Center Project: Trip Generation, Distribution and Assignment. March 2021.

[98] Fehr and Peers. 2024. Big Data Passenger Vehicle and Light Duty Truck Trip Lengths and Project-Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California. January 17, 2024.

[99] CAPCOA. 2022. California Emissions Estimator Model®. Available at: https://www.caleemod.com/. Accessed: December 2023.

[100] PG&E, 2022. 2022 Power Content Label. Available at: https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf. Accessed: December 2023.

4.1.2.1 Construction Emissions

This section describes the estimation of the construction GHG emissions. The construction schedule and equipment mix is based on a reasonable estimate based on the information available at this time, and incorporates conservative assumptions to represent higher than anticipated emissions.

The major construction phases included in this analysis are:

- Site Preparation: involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.
- Grading: involves the cut and fill of land to ensure the proper base and slope for the construction foundation. Off-site construction activities to widen Petersen Road would also include grading activities.
- Building Construction: involves the construction of structures and buildings.
- Paving: involves the laying of concrete or asphalt such as in parking lots or roads.
- Architectural Coating: involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.

Since the existing Project site is undeveloped, no demolition would occur. GHG emissions from these construction phases are attributable to fuel use from construction equipment usage on-site and from on-road worker, vendor, and hauling trips.

Ramboll primarily used CalEEMod to quantify the construction emissions. The following Project-specific assumptions were used as inputs to the CalEEMod model runs for construction:

- Project Land Uses: Land uses modeled in CalEEMod are shown in **Table 4-1**. In addition to construction of the proposed buildings in **Table 4-1**, construction activities were also assumed to include offsite roadway improvements, namely widening of Petersen Road.
- Construction Schedule: The Project is assumed to begin construction in 2025. Based on CalEEMod construction assumptions, the Project anticipates construction to occur for approximately 18 months on a five-day-per-week schedule. Construction schedule of Petersen Road Widening was also included in the construction schedule and is assumed to occur at the same time as the grading phase of warehouse construction. A construction schedule is shown in **Table 4-2**.

All other inputs to the model were based on CalEEMod defaults.

Emissions from Construction Equipment

The emission calculations associated with construction equipment are from off-road equipment engine use based on the equipment list and phase length. All off-road construction equipment were assumed to be diesel-fueled, with the exception of signal boards consistent with the CalEEMod methodology. The calculations include the running exhaust emissions from off-road equipment. Since the equipment is assumed to be diesel, there are no starting emissions associated with the equipment, as these are *de minimis* for diesel-fueled equipment. CalEEMod calculates the exhaust emissions based on default values for horsepower and load factor from CARB's OFFROAD2017.[101] **Table 4-3** provides the off-road equipment activities, equipment details, and tier assumptions for Project construction.

Emissions from On-Road Construction Trips

Construction generates on-road vehicle criteria air pollutant emissions from various sources that could include personal vehicles for worker commuting, vendor truck trips, and trucks for soil and material hauling. The haul trips for material import and export are expected to occur during the grading phase of warehouse construction. No material import and export are anticipated for Petersen Road Widening.

Construction emissions from on-road construction trips are calculated based on the number of trips and vehicle miles traveled (VMT), shown in **Table 4-4**, along with emission factors from EMFAC2021. All worker vehicles are assumed to be fueled by gasoline, and all vendor vehicles and haul trucks are assumed to be fueled by diesel.

Total Construction GHG Emissions

Table 4-5 summarizes the Project's construction GHG emissions by year and total construction GHG emissions amortized over a period of 30 years.[102]

4.1.2.2 Vegetation Changes

Vegetation changes that occur because of land use development constitute a one-time change in the carbon sequestration capacity of a project site. The Project would replace approximately 120 acres of grassland with warehouse land uses. One-time GHG emissions from vegetation changes at the Project site are presented in **Table 4-5**. The analysis conservatively does not calculate the additional carbon sequestration from landscaping that will be added with the Project.

4.1.3 Annual Operational Emissions

This section describes the estimation of operational GHG emissions. The operational emissions were calculated in CalEEMod for most sources, and separately outside of CalEEMod for mobile source emissions. Operational GHG emissions are calculated for area sources (i.e., landscaping equipment), natural gas and electricity usage, on-road mobile trips, water usage, and solid waste generated. Operational emissions are evaluated for the assumed first year of Project Operation (i.e., the calendar year 2026).

4.1.3.1 Area Sources

Area sources that are associated with direct GHG emissions are gasoline-powered landscaping equipment use, such as lawn mowers. All landscaping equipment are assumed to be powered by gasoline, and the associated GHG emissions are calculated in CalEEMod.

4.1.3.2 On-Road Vehicles

The GHG emissions associated with on-road mobile sources are generated from worker vehicles and delivery trucks traveling to and from the Project site. The direct GHG emissions associated with on-road mobile sources include running and starting exhaust emissions.

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[101] CAPCOA. 2022. California Emissions Estimator Model User's Guide, Appendix C. Available at: https://www.caleemod.com/user-guide. September 2023.

[102] This approach to one-time construction and vegetation change GHG emissions is based on the GHG Threshold Working Group Meeting #13 Minutes from August 26, 2009. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-13/ghg-meeting-13-minutes.pdf. Accessed: December 2023.

Running emissions are dependent on VMT and starting emissions are associated with the number of starts or time between vehicle uses. In addition, under the cold storage scenario, it was conservatively assumed that 100% of the warehouse delivery trucks will be equipped with transportation refrigeration units (TRUs).

Ramboll calculated mobile source emissions using the trip rates and trip length information based on analyses conducted by W-Trans and Fehr and Peers **(Appendix A)**, summarized in **Table 4-6**. Fleet mix assumptions are provided in **Table 4-7** for truck trips and worker trips. The analysis includes the benefit of reductions from some adopted regulatory programs, which are accounted within EMFAC2021 as follows:

- AB 1493 ("the Pavley Standard") required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model year 2009 and thereafter. EMFAC2021 includes emission reductions for non-commercial passenger vehicles and light-duty trucks of model year 2017 – 2025.
- The ACC program adopted by CARB, introduced in 2012, combines the control of smog, soot causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2015 through 2025. EMFAC2021 includes reductions associated with this regulation that are represented in this analysis.
- The USEPA/NHTSA advanced fuel economy and GHG standards (Phase 1) were adopted in 2011 for medium and heavy-duty trucks for model years 2014-2018.[103] This Heavy-Duty National Program is intended to reduce fuel use and GHG emissions from medium- and heavy-duty vehicles, semi-trucks, pickup trucks and vans, and all types and sizes of work trucks and buses in between. EMFAC2021 includes reductions associated with this regulation that are represented in this analysis.
- The USEPA/NHTSA advanced fuel economy and GHG standards (Phase 2) were adopted in 2016 for medium- and heavy-duty trucks for model years 2018 and beyond.[104] The Phase 2 program includes technology-advancing standards that substantially reduce GHG emissions and fuel consumption resulting in an ambitious, yet achievable, program that will allow manufacturers to meet the applicable standards over time, at reasonable cost, through a mix of different technologies. The Phase 2 program's standards will be phased in, beginning with model year 2021 and culminating with model year 2027.[105]

GHG emission factors are summarized for operational vehicles are derived from EMFAC2021 and summarized in **Table 4-8**.

a) Transport Refrigeration Units

The cold storage scenario would include trucks with TRUs. TRUs are refrigeration systems powered by diesel internal combustion engines designed to refrigerate or heat perishable products that are transported in various containers, including truck vans, semi-truck trailers,

[103] USEPA, Office of Transportation and Air Quality. 2011. Available at: https://www.gpo.gov/fdsys/pkg/FR-2011-09-15/pdf/2011-20740.pdf. Accessed: December 2023.

[104] USEPA, Office of Transportation and Air Quality. 2016. Available at: https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed: December 2023.

[105] The emission reductions attributable to Phase 2 of the regulations for medium- and heavy-duty trucks were not included in the Project's emissions inventory due to the difficulty in quantifying the reductions. Excluding these reductions results in a more conservative (i.e., higher) estimate of emissions for the Project.

shipping containers, and railcars. The analysis conservatively assumes that 100% of the operational truck trips would be equipped with TRUs for this scenario.

The transportation refrigeration unit (TRU) operational assumptions are presented in **Table 4-9**. Emission factors for TRUs were obtained from OFFROAD2021 and summarized in **Table 4-9**.

4.1.3.3 On-Site Mobile Equipment

Cargo handling equipment are expected to operate at the Project site. For purposes of this analysis, each proposed building is assumed to operate one diesel yard truck and one diesel forklift. Yard trucks, also known as yard goats or yard hostlers, are assumed to redistribute goods between warehouses, as a conservative assumption as it is likely that the operations will not include such equipment. The yard trucks are assumed to be medium heavy-duty diesel trucks, subject to CARB's Drayage Truck Regulation.[106] Emission factors for yard trucks were obtained from EMFAC2021, similar to other on-road vehicles described in **Section 4.1.3.3** and presented in **Table 4-10**. Emission factors for diesel forklifts were obtained from OFFROAD2021.

4.1.3.4 Water Supply, Treatment and Distribution

Indirect GHG emissions result from the production of electricity used to convey, treat, and distribute the Project's water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of the water. Additionally, direct CH_4 and N_2O emissions result from the treatment of wastewater. Water demand and wastewater generation values were based on CalEEMod defaults.

4.1.3.5 Energy Use

Energy usage within buildings (e.g., electricity and natural gas fueled equipment) contributes to the facility's GHG inventory. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions.

The proposed Project buildings would be all-electric, with no natural gas hook-ups. The default energy consumption from CalEEMod was adjusted to reflect an increase in electricity consumption consistent with the methodology presented in the Sacramento Air Quality Management District (SMAQMD) GHG Thresholds development. [107] Electricity consumption of the Project's building operations used for estimating building GHG emissions are summarized in **Table 4-11**.

4.1.3.6 Solid Waste

Municipal solid waste (MSW) is the amount of material that is disposed of by landfilling, recycling, or composting. CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill. The program uses annual waste disposal rates from the CalRecycle data for individual land uses. The program quantifies the GHG emissions associated with the decomposition of the waste, which generates CO_2 and CH_4 based on the

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[106] CARB. 2012. Frequently Asked Questions, Regulation for In-Use Off-Road Diesel-Fueled Fleets (Off-Road Regulation). Available at: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/ordiesel/faq/faqyardtrucks.pdf. March 2012.

[107] Ramboll. 2020. GHG Thresholds for Sacramento County, Section 5.2. Available at: http://www.airquality.org/LandUseTransportation/Documents/SMAQMDGHGThresholds2020-03-04v2.pdf.

total amount of degradable organic carbon. The volume of landfill gas from solid waste is based on the total amount of degradable organic carbon.

Solid waste generation associated with the Project is based on default values for waste generation in CalEEMod. The Project's solid waste generation and GHG emissions associated with solid waste are calculated using CalEEMod.

4.1.3.7 Stationary Sources

The Project would operate one emergency diesel generator and one fire pump for each proposed building. A total of six diesel generators and six diesel fire pumps were conservatively assumed for the Project's operations.

BAAQMD's 2022 CEQA Guidelines recommend using the maximum potential to emit when quantifying emissions from new stationary sources in project analysis. Activities that would contribute to maximum potential to emit for emergencies generators include both emergency operations and non-emergency testing and maintenance. 100 hours per emergency generator is recommended to represent a reasonable worst-case assumption of emergency operations for a given year. In addition to the emergency operations, each emergency generator is assumed to operate up to 50 hours per year for routine testing and maintenance purposes, consistent with the maximum allowed testing time from the ARB's Airborne Toxic Control Measure for Stationary Compression Ignition Engines.

CO_2e emissions from the proposed generators for Project operations are calculated based the potential to emit, described above, and summarized in **Table 4-12**. CO_2e emissions from emergency and non-emergency operations of the proposed generators are below the threshold of significance for stationary sources.

4.1.4 Total Annual Operational Emissions

Total unmitigated GHG emissions from Project operations are shown in **Table 4-13** for both the dry storage scenario and the cold storage scenario. As discussed in **Section 5**, below, because the Project's impacts related to GHG emissions are evaluated against BAAQMD's thresholds of significance for land use projects, the Project's GHG emissions are estimated only for informational purposes. The Project's GHG emissions are not compared against any quantitative GHG emission thresholds. The BAAQMD's CEQA Guidelines recommends that the GHG emissions from a project's stationary sources be analyzed separately and compared to the bright-line threshold of significance.

Even though the Project's impact related to GHG emissions would not require any GHG mitigation measures to reduce the impact to a less-than-significant level, the Air Quality Technical Report for this Project presents a list of air quality mitigation measures, some of which would also result in GHG emission reductions. To account for the GHG reduction co-benefits of the air quality mitigation measures, the effects of the following air quality mitigation measures are quantified. Additional details on the air quality mitigation measures are included in the Air Quality Technical Report.

- **Mitigation Measure AIR-4:** Electric Landscaping Equipment.

  With the implementation of this mitigation measure, landscaping equipment of the Project are assumed to be all-electric. The electric landscaping equipment would generate indirect GHG emissions from electricity consumption. Because CalEEMod does not account for the additional electricity required with the implementation of all-electric landscaping equipment, mitigated GHG emissions from the Project's electric landscaping equipment are calculated and summarized in **Table 4-14**.

- **Mitigation Measure AIR-5**: Engine Model Requirement for Heavy-Duty Diesel Truck.

  With the implementation of this mitigation measure, all operational diesel trucks accessing the Project site are assumed to be equipped with 2014 or newer engine models. While newer engines would mainly reduce the criteria air pollutants emission factors, GHG emission factors as a result of this engine requirement are shown in **Table 4-15**.

- **Mitigation Measure AIR-6**: Electric Forklifts.

  With the implementation of Mitigation Measure AIR-6, all forklifts operating on the Project site are required to be electric. Indirect GHG emissions would result from the operations of electric forklifts.

- **Mitigation Measure AIR-7**: TRU plug-in infrastructure.

  With the implementation of Mitigation Measure AIR-7, all loading docks of the Project are required to be equipped with external power sources and connectors. All trucks with TRUs are required to be plugged in and shut off the TRU engines while stationary at the loading docks. Indirect GHG emissions would result from the TRUs' consumption of electricity while idling and being plugged in to the electric grid at the docks.

  Electricity consumption from electric forklifts and TRU idling with the implementation of Mitigation Measures AIR-6 and AIR-7 are summarized in **Table 4-16**. TRU operation parameters with the implementation of Mitigation Measure AIR-7 are summarized in **Table 4-17**.

With the implementation of the air quality mitigation measures, total mitigated GHG emissions shown in **Table 4-18** are lower for both the dry storage scenario and cold storage scenario compared to the unmitigated emissions.

5. EVALUATION AGAINST THE BAAQMD'S PERFORMANCE STANDARDS

This analysis evaluates the Project relative to Threshold 1 using Option A of the BAAQMD's thresholds of significance. The Project is compliant with Option A of the BAAQMD's thresholds of significance for climate impacts of land use projects as follows:

For performance standards related to buildings, the Project's buildings are all-electric. The proposed buildings will not include natural gas appliances or natural gas plumbing. Also, as discussed in the energy memorandum, the Project would not result in wasteful, inefficient, or unnecessary energy usage.[108] The transportation performance standards include compliance with electric vehicle charging requirements in the most recent adopted version of CALGreen Tier 2. The proposed employee parking spaces of the Project will meet the CALGreen Tier 2 electric vehicle charging requirements. Therefore, the Project would be consistent with this transportation performance standards.

For the additional performance standards related to transportation, the Project-generated VMT was evaluated based on the threshold and approach described in **Section 3.2.1**. The Project-generated VMTs from employee trips and truck trips are compared to the regional average VMT in the MTC's jurisdiction in **Table 5-1**. The Project-generated employee VMT are less than 15 percent below the regional average, whereas the Project's heavy-duty truck VMT are more than 15 percent below the regional average. The combined Project VMT is also less than 15 percent below the regional average. **Table 5-2** shows both the target benchmark and the project's combined GHG emissions from both employee VMT and heavy-duty truck VMT, under both the unrefrigerated scenario and the refrigerated scenario. As presented in **Table 5-2**, under both of these two scenarios, the Project's combined GHG mobile emissions from employee and heavy-duty truck VMT are less than the target benchmark GHG emissions. The primary reason for this outcome is that, although employee VMT would generate GHG emissions 14 percent higher than the regional average, the heavy-truck VMT would generate only 68 percent of (32 percent less) the regional average GHG emissions. The combined GHG emissions from the project under the two categories would result in only 77 percent of the GHG emissions that would occur under the target scenario in which both employee VMT and heavy-truck VMT are combined. This same percentage – 23 percent below the combined regional averages – applies under both the refrigerated scenario and under the unrefrigerated scenario. Stated another way, the GHG emissions from heavy-duty truck VMT are so far below the regional average for that category that the combined GHG emissions from the two categories are still below the target combined GHG emissions number, even though the project's employee VMT, by itself, is above the target number for that category by itself. As mentioned earlier, a mile driven by a heavy-duty truck generates more emissions than a mile driven by an employee in an automobile or light-duty truck.

For these reasons, the Project's VMT-related GHG emissions are less-than-significant. What is more, this conclusion applies to both the unrefrigerated and refrigerated warehouse scenarios. The Project would achieve this outcome as it is ideally located as a regional distribution center, and the GHG reductions from the truck VMT are so large that they make up for the shortfall in GHG reductions from the employee VMT. Traffic information used for this evaluation is included in **Appendix A**.

[108] Ramboll, 2024. Suisun Logistics Center Energy Technical Report. March.

In conclusion, the proposed industrial land uses of the Project are consistent with the performance standards used herein, which are adapted from the BAAQMD's thresholds of significance for climate impacts associated with office projects. Separately, the Project's proposed stationary sources would not generate GHG emissions that would exceed the BAAQMD's GHG threshold of significance for stationary sources, as discussed in **Section 4.1.3.7**. Thus, the Project's GHG impact with regards to Project-generated VMT is consistent with the BAAQMD-adapted performance standards, and the analysis concludes that the Project's impact related to GHG emissions is less-than-significant.

6. CONSISTENCY ANALYSIS

This analysis evaluates the Project relative to Threshold 2 using a consistency evaluation. The following plans, polices, and regulations are evaluated in this analysis:

- 2022 CARB Scoping Plan adopted under AB 1279
- Plan Bay Area 2050
- BAAQMD's 2017 Clean Air Plan
- Solano County Climate Action Plan
- City of Suisun City 2035 General Plan

Description of each plan, policy, and regulation, in addition to a discussion of Project consistency, are presented below.

6.1 2022 CARB Scoping Plan

Appendix D of the 2022 Scoping Plan states that a development project can determine consistency with the Scoping Plan by using significance criteria from an air district or other lead agencies, if the criteria align with the State's current GHG emission reduction goals. Because the BAAQMD's current GHG significance criteria were created to determine a project's "fair share" of what is necessary to meet California's 2045 climate goals, the criteria are sufficient to determine consistency with the 2022 Scoping Plan. Based on evaluation in **Section 5**, because the Project is consistent with the BAAQMD's CEQA significance criteria for building and transportation design features, the Project would also be consistent with the 2022 Scoping Plan.

The Project would be consistent with key State plans and regulatory requirements referenced in the 2022 Scoping Plan Update designed to reduce statewide emissions. According to the 2022 Scoping Plan Update, reductions needed to achieve the 2045 target are expected to be achieved by decarbonizing the electricity sector, greatly increasing the fuel economy of vehicles and the number of zero-emission or hybrid vehicles, reducing the rate of growth in VMT, supporting high speed rail and other alternative transportation options, and increasing the use of high efficiency appliances, water heaters, and HVAC systems. The Project would not impede with these potential reduction strategies identified by CARB. The Project would also benefit from statewide and utility-provider efforts towards increasing the portion of electricity generated by renewable resources, increasing fuel economy standards for vehicles, and reducing carbon content of fuels. The Project would utilize energy efficient appliances and equipment, as required by Title 24, and provide electric vehicle charging infrastructure to support the current and future use of electric and hybrid-electric vehicles for employee travel. For these reasons, the Project would be consistent with the objectives of the 2022 Scoping Plan Update.

6.2 Plan Bay Area 2050

The Project is consistent with the state's GHG reduction goals and strategies as discussed in the MTC/ABAG's Plan Bay Area 2050[109] (the current RTP/SCS for the region), which contains four elements:

1. Housing Element– Key implementation actions include providing financial resources and technical assistance through the Regional Housing Technical Assistance and Priority Development Area planning programs;
2. Economy Element – Integrates new workforce actions aimed at supporting the plan's ambitious transportation, housing, and resilience infrastructure goals as well as enhanced collaboration on regional and megaregional economic needs with labor, business, and education partners, among others, moving forward;
3. Transportation Element – Describes implementing the recommendations of the Blue Ribbon Transit Recovery Task Force, the Fare Coordination and Integration Study, and the Regional Active Transportation Plan; and
4. Environment Element – Evaluates and establishes clear roles and responsibilities for sea level rise adaptation planning, funding, and implementation, in collaboration with key partners.

The RTP is based on an analysis that considers the entire San Francisco Bay Area and includes all projects involving changes in regional growth and land use in Solano County, as well as the countywide vehicle traffic projections. Cumulative GHG emissions analyzed in the RTP were compared to regional GHG thresholds and analyzed under statewide plans and regulations. This analysis concluded that the projected increase in GHG emissions as a result of the Project would primarily be due to changes in regional growth/land use; however, the RTP achieves GHG emissions reduction targets from mobile sources from 2005 levels by implementing a mix of land use strategies, transportation management, economic factors, and road projects. Furthermore, the transportation studies of the Project demonstrate that Project-generated VMT is below the existing regional average. Thus, this analysis of GHG emissions is conservative.

As shown in **Table 6-1**, the Project would be consistent with applicable MTC/ABAG strategies for the reduction of GHG emissions.

6.3 BAAQMD's 2017 Clean Air Plan

The BAAQMD's 2017 Clean Air Plan: Spare the Air, Cool the Climate lays the groundwork for long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. The consistency of the Project with control measures on CAPs and TAC emissions are discussed in the Air Quality Technical Report, some of which are also applicable to GHG emission reduction.[110] The Project would be consistent with the GHG reduction goals and measures in the 2017 Clean Air Plan.

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[109] MTC/ABAG. 2021. Plan Bay Area 2050. Available at: https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf. October 21. Accessed: September 2023.

[110] Ramboll, 2024. Suisun Logistics Center Air Quality Technical Report. March.

6.4 Solano County Climate Action Plan

As previously discussed, Solano County's Climate Action Plan, adopted in June 2011, focuses on sustainable development, renewable energy, conservation efforts, and community resilience. The Project's consistency with the Climate Action Plan is presented in **Table 6-2**, with regards to the following strategy sectors: agriculture, transportation and land use, energy use and efficiency, water use and efficiency, waste reduction and recycling.

6.5 City of Suisun City 2035 General Plan

The City's General Plan contains a goal to reduce local GHG emissions and local effects of global climate change, and an objective to reduce the City's contribution to global climate change effects. As describe in Chapter 3.9, Land Use, of the Project's Environmental Impact Report, the Project is found to be consistent with the City's General Plan with respect to GHG emissions and global climate change effects.

7. SUMMARY

The Project's construction and operational GHG emissions are disclosed in **Section 4**.

The Project will implement the BAAQMD's performance standards as adapted to industrial projects and is considered to contribute its fair share of the cumulative GHG reduction required to achieve the State's climate goals, as discussed in **Section 5**. Therefore, the Project would have a less-than-significant impact related to the generation of GHG emissions. Even though the Project would not require any GHG mitigation measures to reduce its GHG and climate change impacts, the GHG reduction co-benefits of air quality mitigation measures, discussed in the Air Quality Technical Report, are quantified and presented in **Table 4-18**. Overall, with the implementation of the air quality mitigation measures, GHG emissions would be reduced by approximately 2,540 MT/year for the cold storage scenario and 882 MT/year for the dry storage scenario, compared to the unmitigated GHG emissions.

As discussed in **Section 6**, the Project would be consistent with the 2022 CARB Scoping Plan, Plan Bay Area 2050, the BAAQMD's 2017 Clean Air Plan, and Solano County's Climate Action Plan. The Project will also comply with the applicable State building codes and the City's zoning ordinance. Therefore, the Project would not conflict with any GHG plans, policy or regulation.

TABLES

Table 4-1
Project Land Uses
Suisun Logistics Center
Suisun, California

Land Use	Land Use Type	CalEEMod Land Use Subtype	Land Use Quantity		Site Footprint
			Value	Units	Acre
High-Cube Warehouse[1]	Dry/Cold Storage[1]	Unrefrigerated/Refrigerated Warehouse-No Rail	2,059	1000 sqft	120
Parking	Parking	Parking Lot	2,207	spaces	
			2,169	1000 sqft	
Open Space	Recreational	City Park	15	acres	

Notes:

1. Two usage scenarios are evaluated for the purpose of estimating emissions: dry storage scenario and cold storage scenario.

Abbreviations:

sqft - square feet

Table 4-2
Construction Phasing Schedule
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Start Date	End Date	Number of Days
Warehouse Construction	Site Preparation	1/1/2025	1/16/2025	12
Petersen Road Widening	Linear, Grubbing & Land Clearing	1/17/2025	1/21/2025	3
	Linear, Grading & Excavation	1/22/2025	2/10/2025	14
	Linear, Drainage, Utilities, & Sub-Grade	2/11/2025	2/21/2025	9
	Linear, Paving	2/22/2025	2/28/2025	5
Warehouse Construction	Grading	1/17/2025	2/28/2025	31
	Building Construction	3/1/2025	5/1/2026	305
	Paving	5/2/2026	6/3/2026	23
	Architectural Coating	6/4/2026	7/6/2026	23

Notes:

[1] Construction schedule and phasing were based on Project-specific information.

Table 4-3
Construction Equipment List
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Equipment Type[1]	Fuel[2]	Quantity[1]	Horsepower[1]	Hours/Day[1]	Unmitigated Tier[1]	Mitigated Tier[3]
Warehouse Construction	Site Preparation	Rubber Tired Dozers	Diesel	8	367	8	CalEEMod Default	Tier 4 Final
		Tractors/Loaders/Backhoes	Diesel	10	84	8	CalEEMod Default	Tier 4 Final
Petersen Road Widening	Linear, Grubbing & Land Clearing	Signal Boards	Electricity	1	6	8	CalEEMod Default	No Specific Tier
		Crawler Tractors	Diesel	1	87	8	CalEEMod Default	Tier 4 Final
		Excavators	Diesel	2	36	8	CalEEMod Default	No Specific Tier
	Linear, Grading & Excavation	Excavators	Diesel	3	36	8	CalEEMod Default	No Specific Tier
		Crawler Tractors	Diesel	1	87	8	CalEEMod Default	Tier 4 Final
		Graders	Diesel	2	148	8	CalEEMod Default	Tier 4 Final
		Rollers	Diesel	2	36	8	CalEEMod Default	No Specific Tier
		Scrapers	Diesel	2	423	8	CalEEMod Default	Tier 4 Final
		Rubber Tired Loaders	Diesel	1	150	8	CalEEMod Default	Tier 4 Final
		Signal Boards	Electricity	1	6	8	CalEEMod Default	No Specific Tier
		Tractors/Loaders/Backhoes	Diesel	4	84	8	CalEEMod Default	Tier 4 Final
	Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	3	84	8	CalEEMod Default	Tier 4 Final
		Signal Boards	Electricity	1	6	8	CalEEMod Default	No Specific Tier
		Scrapers	Diesel	1	423	8	CalEEMod Default	Tier 4 Final
		Rough Terrain Forklifts	Diesel	1	96	8	CalEEMod Default	Tier 4 Final
		Graders	Diesel	1	148	8	CalEEMod Default	Tier 4 Final
		Plate Compactors	Diesel	1	8	8	CalEEMod Default	No Specific Tier
		Pumps	Diesel	1	11	8	CalEEMod Default	No Specific Tier
		Air Compressors	Diesel	3	37	8	CalEEMod Default	No Specific Tier
		Generator Sets	Diesel	1	14	8	CalEEMod Default	No Specific Tier
	Linear, Paving	Rollers	Diesel	2	36	8	CalEEMod Default	No Specific Tier
		Paving Equipment	Diesel	1	89	8	CalEEMod Default	Tier 4 Final
		Pavers	Diesel	1	81	8	CalEEMod Default	Tier 4 Final
		Tractors/Loaders/Backhoes	Diesel	3	85	8	CalEEMod Default	Tier 4 Final
		Signal Boards	Electricity	1	6	8	CalEEMod Default	No Specific Tier
Warehouse Construction	Grading	Excavators	Diesel	5	36	8	CalEEMod Default	No Specific Tier
		Graders	Diesel	3	148	8	CalEEMod Default	Tier 4 Final
		Rubber Tired Dozers	Diesel	3	367	8	CalEEMod Default	Tier 4 Final
		Scrapers	Diesel	5	423	8	CalEEMod Default	Tier 4 Final
		Tractors/Loaders/Backhoes	Diesel	5	84	8	CalEEMod Default	Tier 4 Final
	Building Construction	Cranes	Diesel	3	367	7	CalEEMod Default	Tier 4 Final
		Forklifts	Diesel	8	82	8	CalEEMod Default	Tier 4 Final
		Generator Sets	Diesel	3	14	8	CalEEMod Default	No Specific Tier
		Tractors/Loaders/Backhoes	Diesel	8	84	7	CalEEMod Default	Tier 4 Final
		Welders	Diesel	3	46	8	CalEEMod Default	No Specific Tier
	Paving	Pavers	Diesel	5	81	8	CalEEMod Default	Tier 4 Final
		Paving Equipment	Diesel	5	89	8	CalEEMod Default	Tier 4 Final
		Rollers	Diesel	5	36	8	CalEEMod Default	No Specific Tier
	Architectural Coating	Air Compressors	Diesel	3	37	8	CalEEMod Default	No Specific Tier

Notes:

[1] Equipment lists were based on Project-specific estimates. All equipment were conservatively assumed to operate at all times for the duration of use.

[2] All equipment is conservatively assumed to be diesel-fueled except for signal boards.

[3] Mitigated enginer tier is assumed to be Tier 4 Final except for electric equipment and equipment under 50 horsepower.

Abbreviations:

CalEEMod - CALifornia Emissions Estimator MODel

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Table 4-4
Construction Trips
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Year	Construction Days	Worker Trip Rates[1] (one-way trips/day)	Vendor Trip Rates[1] (one-way trips/day)	Hauling Trip Number[2] (one-way trips/phase)	Trip Lengths[3] (miles/one way trip)			Worker VMT (miles)	Vendor VMT (miles)	Hauling VMT (miles)
							Worker	Vendor	Hauling			
Warehouse Construction	Site Preparation	2025	12	45	0	0	11.7	8.4	20	6,318	0	0
	Grading	2025	31	83	1.3	6,625	11.7	8.4	20	30,245	336	132,500
	Building Construction	2025	218	865	338	0	11.7	8.4	20	2,206,269	618,946	0
		2026	87	865	338	0	11.7	8.4	20	880,484	247,010	0
	Paving	2026	23	38	0	0	11.7	8.4	20	10,226	0	0
	Architectural Coating	2026	23	173	0	0	11.7	8.4	20	46,554	0	0

EMFAC Data[4]

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	Solano County Calendar Years 2025-2026 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	25% LDA, 50% LDT1, 25% LDT2	Gasoline
Vendor		50% MHDT, 50% HHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

[1] Worker and vendor trip rates are based on CalEEMod defaults and include trips from the Petersen Road widening.

[2] Hauling Trips are estimated using CalEEMod methodology assuming 106,000 cubic yards of soil imported and 16 cubic yards of material per truck trip.

[3] Trip lengths obtained from CalEEMod Appendix D defaults for Solano County.

[4] Emissions were calculated using emission factors from EMFAC2021 Emissions Inventory with the specified settings and fleet and fuel assumptions.

Abbreviations:

CalEEMod - California Emissions Estimator Model
EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light-duty automobiles
LDT - light-duty trucks
HHDT - heavy-heavy duty trucks
MHDT - medium-heavy duty trucks
VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 4-5
Estimated GHG Emissions from Proposed Project Construction and Vegetation Change
Suisun Logistics Center
Suisun, California

Summary of Construction Emissions by Source

Construction Phase	Construction Subphase	Year	Source	GHG Emissions[1,2]				
				CO_2	CH_4	N_2O	HFC	CO_2e
				(MT/yr)				
Warehouse Construction	Site Preparation	2025	On-Site Exhaust	76	0.003	0.0006	--	76
			Mobile Exhaust	2	0.0001	0.0001	0.000003	2.1
	Petersen Road Widening	2025	On-Site Exhaust	84	0.003	0.0007	--	84
			Electricity	--	--	--	--	0.03
	Grading	2025	On-Site Exhaust	246	0.01	0.002	--	246
			Mobile Exhaust	221	0.001	0.03	0.0001	232
	Building Construction	2025	On-Site Exhaust	671	0.03	0.005	--	673
			Mobile Exhaust	1,595	0.03	0.2	0.002	1,646
		2026	On-Site Exhaust	268	0.01	0.002	--	269
			Mobile Exhaust	627	0.01	0.0629	0.001	647
	Paving	2026	On-Site Exhaust	39	0.002	0.0003	--	40
			Mobile Exhaust	3	0.0001	0.0001	0.000004	3.3
	Architectural Coating	2026	On-Site Exhaust	6	0.0002	0.00005	--	5.6
			Mobile Exhaust	15	0.001	0.0005	0.00002	15

Summary of Construction Emissions Over Time

Period/Source	CO_2e
	(MT)
2025	2,960
2026	979
Vegetation Change[3]	55
Construction GHG Emissions (2025-2026)	**3,994**
Construction GHG Emissions (30 yr Amortized)[4]	**133**

Notes:

[1] Construction emissions were estimated with methodology equivalent to CalEEMod. On-site exhaust represents emissions from offroad equipment, while mobile exhaust includes emissions from worker, vendor, and hauling trucks.

[2] The Global Warming Potential (GWP) for CH4 and N2O were estimated to be 25 and 298 respectively, consistent with the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4). HFC released by vehicles was assumed to be HFC-134a, which has a GWP of 1430, consistent with CalEEMod 2022 assumptions.

[3] GHG emissions from vegetation change are calculated in CalEEMod, assuming the Project's land uses would replace approximately 120 acres of grassland on alfisols soil.

[4] This amortization approach to one-time construction GHG emissions is based on the SCAQMD GHG Threshold Working Group Meeting #13 Minutes from August 26, 2009.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - California Emissions Estimator Model
CAP - Criteria Air Pollutants
CEQA - California Environmental Quality Act
NOx - nitrogen oxides
PM_{10} - particulate matter less than 10 microns
$PM_{2.5}$ - particulate matter less than 2.5 microns
ROG - reactive organic gases

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

Intergovernmental Panel on Climate Change (IPCC), Fourth Assessment Report (AR4), 2007.

South Coast Air Quality Management District (SCAQMD), GHG Threshold Working Group Meeting #13 Minutes, 2009. Available online at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-13/ghg-meeting-13-minutes.pdf

Table 4-6
Trips and VMT for Project Operations
Suisun Logistics Center
Suisun, California

Fleet Type	Average Trip Length	Daily Trip Rates[1]	Annual Trips[3]	Daily VMT[2]	Annual VMT[3]
	Miles/Trip	Trips/day	Trips/yr	Miles/day	Miles/yr
Trucks[4]	39.5	473	172,645	18,684	6,819,478
Passenger Cars	13.20	3,253	1,187,345	42,940	15,672,954

Notes:

1. Daily Project trip rates and average trip length were provided by the Project's Traffic Impact Study.
2. Daily VMT is calculated by multiplying the number of trips by the average trip length.
3. Annual trips and VMT are calculated assuming 365 days per year of operation for all fleets.
4. Truck trip length in this calculation is conservatively chosen to be the higher among the two: 39.5 miles per trip for medium and heavy trucks, and 35.9 miles per trip for heavy trucks.

Abbreviations:

VMT - Vehicle miles traveled

yr - year

References:

Fehr and Peers. 2024. Big Data Passenger Vehicle and Light Duty Truck Trip Lengths and Project-Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California. January 17, 2024.

Table 4-7
Summary of Project Fleet Mix
Suisun Logistics Center
Suisun, California

Fleet Type	Description	EMFAC2007 Category[1]	Fuel[1,2]
Trucks[3]	Semi-trucks	HHDT	Diesel
Passenger Cars[4]	Passenger Vehicles	LDA, LDT1, LDT2, MDV	EMFAC Default Mix

Notes:

1. EMFAC2007 categories and fuel types were chosen to match the Project's vehicle type descriptions.
2. The EMFAC default fuel mix for the Passenger fleet consists of Gasoline, Diesel, Plug-in Hybrid, and Electric vehicles.
3. Even though the truck trip length is based on trip length for medium-duty and heavy-duty trucks, the emission factors are conservatively chosen based on the assumption that all trucks are heavy-duty.
4. The proportion of LDA, LDT1, LDT2, and MDV within the passenger vehicles fleet is estimated using EMFAC2021 default population estimates for the passenger vehicle categories. Using EMFAC2021 population estimates, the passenger vehicle fleet is comprised of approximately 57.9% LDA, 4.6% LDT1, 22.1% LDT2, and 15.4% MDV.

Abbreviations:

HHDT - heavy-heavy duty trucks
LDA - light duty auto (passenger cars)
LDT- light duty trucks
MDV - medium duty trucks
EMFAC - EMission FACtor estimator model

References:

California Air Resources Board. EMFAC2021. Available at:

Table 4-8
Unmitigated Project Fleet Emission Factors
Suisun Logistics Center
Suisun, California

Fleet Type[1]	Calendar Year	GHG Emission Factors[2]												
		CO_2			CH_4			N_2O			HFC	CO_2e		
		RUNEX	STREX	IDLEX	RUNEX	STREX	IDLEX	RUNEX	STREX	IDLEX	RUNEX	RUNEX	STREX	IDLEX
		g/mile	g/trip		g/mile	g/trip		g/mile	g/trip		g/mile	g/mile	g/trip	
Passenger Cars	2026	296	76	0	0.0024	0.078	0	0.0053	0.035	0	3.6E-04	298	88	0
Trucks	2026	1,553	0	802	7.1E-04	0	0.016	0.24	0	0.13	0.0010	1,628	0	840

Notes:

1. Emission factors for each passenger cars were developed by creating weighted emission factors based on the EMFAC 2021 default mixture of LDA/LDT1/LDT2/MDV within the passenger vehicle fleet. Trucks are equivalent to diesel HHDT emission factors. EMFAC2021 v1.0.2 for Solano (SF) sub-area and operational year 2026 were used.
2. HFC emission factors shown were provided by CalEEMod staff for EMFAC2007 vehicle types. HFC emitted by vehicles is assumed to be HFC-134a, which has a global warming potential of 1,430.

Abbreviations:

MY - model year
CO2 - Carbon dioxide
CH_4 - Methane
N_2O - Nitrous oxide
HFC - hydrofluorocarbon
RUNEX - Running exhaust emissions
STREX - Start exhaust tailpipe emissions
IDLEX - Idle exhaust emissions
GHG - Greenhouse gases
CO_2e - carbon dioxide equivalents

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 4-9
Unmitigated TRU Operations and Emission Factors
Suisun Logistics Center
Suisun, California

TRU Usage

TRU Usage Estimates		Value
Percent of time TRU engine is running during TRU operation [--][1]		62.5%
Operational Days [days/year]		365
Average Truck Round Trip Length [miles/trip]		79.0
Average Truck Travel Speed [miles/hour]		50
TRU Equipped Truck Population[2] [# trucks]		237
On-Site Loading and Unloading	Daily loading and unloading time[3] [hrs/day/truck]	4
	Annual loading and unloading time[3] [hrs/year]	346,020
	Daily On-Site TRU Usage[1,3] [hrs/day]	2.5
	Annual On-Site TRU Usage[1,3] [hrs/year]	216,263
Off-Site Travel	Daily Travel Time[3] [hrs/day/truck]	1.6
	Annual Travel Time[3] [hrs/year]	136,678
	Daily Off-Site TRU Usage[1,3] [hrs/day]	1.0
	Annual Off-Site TRU Usage[1,3] [hrs/year]	85,424

TRU Emission Factors

Source	Operational Year[4]	Model Year[5]	Fuel	Emission Factor (g/hr)[6]
				CO_2
TRU Aggregate	2026	ALL	Diesel	6,905

Notes:

1. According to Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units, TRU engines are generally running about 62.5% of time that a TRU unit is turned on.
2. The TRU truck population was assumed to equal to the number of round trips per day rounded up, or 237 trucks, assuming 100% of trucks in the cold storage scenario will be equipped with TRUs.
3. Approximate on-site TRU usage represents 4 hours of TRU idling when truck is loading and unloading at the dock under the unmitigated scenario.
4. Emissions from TRUs decrease over time, but the earliest possible year was chosen to calculate criteria air pollutant emissions from TRUs.
5. Emission factors based on default model year composition for TRUs.
6. Emission factors aggregated based on OFFROAD2021 for Transportation Refrigeration Unit vehicle classes for Solano (SF) sub-area in 2026. TRU vehicle classes include Instate Gensets, Instate Trailers, Instate Trucks, Out-Of-State Gensets, and Out-Of-State Trailers. Emission factors were calculated by dividing the total TRU emissions by total TRU operation.

Abbreviations:

ARB - [California] Air Resources Board
g - gram
CO_2 - carbon dioxide
hr - hour
mi - mile

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inve

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Table 4-10
Unmitigated Yard Equipment Operations and Emission Factors
Suisun Logistics Center
Suisun, California

Yard Equipment Usage

Yard Equipment Usage Estimates		Value
Operational Days [days/year]		365
Number of Buildings [# buildings]		6
Yard Trucks (Terminal Tractors)	Yard Trucks at Site[1] [yard trucks/building]	1
	Yard Truck Trips per Day[1] [trips/day/truck]	473
	Yard Truck Trip Length[1] [miles/trip]	0.55
	Daily Yard Truck Travel[1] [miles/day]	1,547
	Annual Yard Truck Travel[1] [miles/year]	564,551
Forklifts	Forklifts at Site[2] [forklift/building]	1
	Forklift Usage Rate[2] [hrs/forklift/day]	24
	Daily Forklift Usage[2] [hrs/day]	144
	Annual Forklift Usage[2] [hrs/year]	52,560

Yard Equipment Emission Factors

Source	Year[3]	Fuel Type	EF Unit	Emission Factor [4,5]
				CO_2e
Yard Trucks	2026	Diesel	g/mile	1,190
Forklifts	2026	Diesel	g/hr	10,724

Notes:

1. The Project Developer expects to operate one yard truck in each of the six buildings. Each yard truck is assumed to be used 365 days per year for emissions estimation purposes. It is assumed that each truck trip will generate one yard truck trip within the site. An average yard truck trip length of 0.55 miles was estimated by estimating the average trip length to each of the six warehouse buildings, weighted by the approximate size of each building.

2. The Project Developer expects to operate one forklift in each of the six buildings. Each forklift is conservatively assumed to run 24 hours per day, 365 days per year for emissions estimation purposes.

3. Emissions from heavy equipment decrease over time, but the earliest possible year was chosen to calculate criteria air pollutant emissions.

4. Emission factors for yard trucks assume default gram per mile EMFAC2021 emission factors for diesel MHDT vehicles.

5. Emission factors for forklifts were aggregated based on OFFROAD2021 for industrial forklifts for Bay Area Air Quality Management District in 2026. Emission factors were calculated by dividing the total forklift emissions by total forklift operation from OFFROAD2021.

Abbreviations:

ARB - [California] Air Resources Board

g - gram

CO_2e - carbon dioxide equivalents

hr - hour

mi - mile

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inventory/.

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Table 4-11
Warehouse Energy Use
Suisun Logistics Center
Suisun, California

Cold Storage Scenario

Land Use Type	CalEEMod Land Use Subtype	Size	Default Electricity Use[1]	Electricity to Replace Natural Gas[2]	Project Electricity Use
		ksf	kWh/yr	kWh/yr	kWh/yr
Industrial	Refrigerated Warehouse-No Rail	2,059	50,369,989	4,210,655	54,580,644
Parking	Parking Lot	2,169	1,900,467	--	1,900,467
Total Cold Storage Buildout Energy Usage			52,270,456	4,210,655	56,481,111

Dry Storage Scenario

Land Use Type	CalEEMod Land Use Subtype	Size	Default Electricity Use[1]	Electricity to Replace Natural Gas[2]	Project Electricity Use
		ksf	kWh/yr	kWh/yr	kWh/yr
Industrial	Unrefrigerated Warehouse-No Rail	2,059	21,481,535	4,210,655	25,692,190
Parking	Parking Lot	2,169	1,900,467	--	1,900,467
Total Dry Storage Buildout Energy Usage			23,382,002	4,210,655	27,592,657

Notes:

[1] Default Electricity and Natural Gas usage rates were estimated using CalEEMod.

[2] Because the Project has committed to installing no natural gas infrastructure, electricity usage to replace natural gas usage is estimated based on the method developed in Table A-9 of the SMAQMD Greenhouse Gas Threshold Report.

Abbreviations:

ksf - thousand square feet
kWh - kilowatt hours
yr - year
CalEEMod - California Emissions Estimator Model

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at: http://www.caleemod.com/

Table 4-12
Emergency Engine and Fire Pump Emissions during Project Operations
Suisun Logistics Center
Suisun, California

Emergency Engine Emission Factors for Diesel Engines

Fuel	Engine Tier	Engine Size Range (hp)		Engine Emission Factor[1] (g/bhp-hr)
		Minimum	Maximum	CO_2e
Diesel	Tier 2	25	50	523

Emergency Engine Information[2]

Scenario	Engine Type	Engine Control	Annual Operation[3]
			hr/yr
Project Operation	Generator	Tier 2	150
	Fire Pump	Tier 2	150

Emergency Engine Emissions

Scenario	Engine Type	Size (hp)	Quantity	Annual Emissions (MT/yr)
				CO_2e
Project Operation	Generator	50	6	24
	Fire Pump	50	6	24
Total Emissions				47
BAAQMD Thresholds[4]				10,000

Notes:

1 The emission factors for CO_2e are based on CalEEMod User's Guide Appendix G.

2 Engine numbers, size, and fuel type of emergency engines are Project-specific estimates.

3 Operation for routine maintenance and testing was conservatively assumed to be 50 hours per year, the maximum allowable by the Airborne Toxics Control Measure (ATCM) for Stationary Compression Ignition Engines (17 CCR 93115). Operation for nontesting and nonmaintenance purposes was conservatively assumed to be 100 hours per year, per 2022 BAAQMD CEQA Guidelines, Appendix E.

4 Thresholds are from BAAQMD's CEQA Air Quality Guidelines for stationary sources.

Abbreviations:

ARB - [California] Air Resources Board
BAAQMD - Bay Area Air Quality Management District
CalEEMod - CALifornia Emissions Estimator MODel
CO_2e - carbon dioxide equivalent
EPA - US Environmental Protection Agency
g/bhp-hr - grams per brake horsepower hour
GWP - global warming potential
hp - horsepower
kW - kilowatt
MT - metric ton
NMHC - non-methanic hydrocarbons
NO_X - oxides of nitrogen
PM_{10} - PM less than 10 microns in aerodynamic diameter
$PM_{2.5}$ - PM less than 2.5 microns in aerodynamic diameter
ROG - reactive organic gases
yr - year
hr - hour

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

California Air Resources Board. Non-road Diesel Engine Certification Tier Chart. Available online at: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart

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BAAQMD. 2004. CARB Emission Factors for CI Diesel Engines - Percent HC in Relation to NMHC + NOx. Available at: https://www.baaqmd.gov/~/media/files/engineering/policy_and_procedures/engines/emissionfactorsfordieselengines.pdf

BAAQMD. 2023. California Air Quality Act Air Quality Guidelines Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

6. Emission factors aggregated based on OFFROAD2021 for Transportation Refrigeration Unit vehicle classes for Solano (SF) sub-area in 2026. TRU vehicle classes include Instate Gensets, Instate Trailers, Instate Trucks, Out-Of-State Gensets, and Out-Of-State Trailers. Emission factors were calculated by dividing the total TRU emissions by total TRU operation.

Abbreviations:

ARB - [California] Air Resources Board

g - gram

CO_2 - Carbon dioxide

hr - hour

mi - mile

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inv

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Thermo King. Trailer Electrification Position Paper. 2021. Available at: https://www.thermoking.com/content/dam/thermoking/documents/marketing/Trailer-electrification-position-paper-Thermo-King.pdf

Table 4-13
Unmitigated GHG Emissions from Proposed Project Operations
Suisun Logistics Center
Suisun, California

Source Category	Emission Sources	Cold Storage Scenario	Dry Storage Scenario
		CO_2e (MT/yr)	
Area	Landscaping Equipment (Gasoline)	30	30
Buildings	Electricity[1]	1,435	701
On-Road Mobile Vehicles	Trucks[2]	13,665	13,665
	Passenger Vehicles[2]	5,798	5,798
	TRU[2]	2,531	--
On-Site Mobile Equipment[6]	Yard Trucks	816	816
	Forklifts (Diesel)	685	685
Water[3]	--	727	727
Solid Waste[3]	--	604	604
Refrigerants[4]	--	5,095	--
Stationary Equipment[5]	Emergency Generators	24	24
	Fire Pumps	24	24
Total Unmitigated Emissions[7]		**31,433**	**23,050**

Notes:

[1] Operational natural gas usage rates are expected to be zero. Operational electricity emissions were calculated in Table 4-11 based on CalEEMod default electricity usage and CalEEMod default natural gas usage converted to electricity.

[2] Mobile emissions for Project operations were calculated using CalEEMod methodology, EMFAC2021 emission factors, and trip data provided by the Project Applicant as shown in and GHG.

[3] Water and solid waste emissions for operations were calculated using CalEEMod 2022.1.

[4] Refrigerant emissions were calculated with default CalEEMod methodolgy and scaled down to reflect the maximum global warming potential (GWP) allowed under SB-1206 (2022) which prohibits the sale of refrigerants with GWP greater than 2,200 beginning in 2025.

[5] Emergency engine emissions were calculated using ARB emission factors for diesel emergency engines, as shown in Table 4-12.

[6] Yard equipment includes yard trucks and forklifts. Emissions were calculated using OFFROAD2021 and EMFAC2021 emission factors, as shown in Table 4-8.

[7] The term "unmitigated" refers to GHG emissions in the absence of any air quality mitigation measures. No mitigation measures are proposed for reducing GHG emissions.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2e - carbon dioxide equivalent
GHG - Greenhouse Gases
MT - metric ton
TRU - transportation refrigeration unit
yr - year

References:

California Emissions Estimator Model (CalEEMod). 2022.1. CAPCOA. 2022. Available online at: http://www.caleemod.com
SB-1206 Hydrofluorocarbon gases: sale or distribution. Available online at: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB1206

Table 4-14

Estimated GHG Emissions from Electricity Consumption of Electric Landscaping Equipment

Suisun Logistics Center
Suisun, California

Land Use Type	Warehouse Area[1]	Electricty Consumption[2]	CO_2e Emission Factor[3]	CO_2e
	sqft	MWh/yr	lb CO_2e/MWh	(MT/yr)
Landscaping Equipment	2,058,670	40	56	1.0

Notes:

1. Project square footage is used to generate landscaping equipment activities for non-residential land uses based on the CalEEMod's default methodology.
2. Landscape emissions are calculated assuming all landscaping equipment is electric. The energy demand is determined using CalEEMod default equipment horsepower converted to kilowatt hours.
3. The CO_2e intensity factor is obtained from PG&E 2022 Power Content Label.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2e - carbon dioxide equivalents
MT - metric tons
MWh - megawatt hour
PG&E - Pacific Gas and Electric
$PM_{2.5}$ - PM less than 2.5 microns in diameter
sqft - square feet
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

PG&E, 2022. 2022 Power Content Label. Available at: https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf. Accessed: December 2023.

Table 4-15
Mitigated Project Fleet Emission Factors
Suisun Logistics Center
Suisun, California

Fleet Type	Calendar Year	GHG Emission Factors[2]												
		CO_2			CH_4			N_2O			HFC	CO_2e		
		RUNEX	STREX	IDLEX	RUNEX	STREX	IDLEX	RUNEX	STREX	IDLEX	RUNEX	RUNEX	STREX	IDLEX
		g/mile	g/trip		g/mile	g/trip		g/mile	g/trip		g/mile	g/mile	g/trip	
Passenger Cars	2026	296	76	0	0.0024	0.078	0	0.0053	0.035	0	3.6E-04	298	88	0
MY 2014+ Trucks	2026	1,527	0	817	5.0E-04	0	0.017	0.24	0	0.13	0.0010	1,600	0	855

Notes:

1. Emission factors for each passenger cars were developed by creating weighted emission factors based on the EMFAC 2021 default mixture of LDA/LDT1/LDT2/MDV within the passenger vehicle fleet. Mitigated trucks will be equipped with 2014 or newer engines. Mitigated trucks are equivalent to diesel HHDT emission factors from model years 2014 to 2026 using EMFAC2021 v1.0.2 for Solano (SF) sub-area and calendar year 2026.

2. HFC emission factors shown were provided by CalEEMod staff for EMFAC2007 vehicle types. HFC emitted by vehicles is assumed to be HFC-134a, which has a global warming potential of 1,430.

Abbreviations:

MY - model year
CO2 - Carbon dioxide
CH_4 - Methane
N_2O - Nitrous oxide
HFC - hydrofluorocarbon
RUNEX - Running exhaust emissions
STREX - Start exhaust tailpipe emissions
IDLEX - Idle exhaust emissions
GHG - Greenhouse gases
CO_2e - carbon dioxide equivalents

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 4-16
Mitigated Electric Equipment Greenhouse Gas Emissions and Energy Consumption
Suisun Logistics Center
Suisun, California

Electric Equipment Operation

Fleet Type	Fuel	Electric Power Consumption Rate[1,2] (kW)	Annual Usage[3]	CO_2e Emission Factor[4] (lb CO2e/MWh)	Annual Electricity Consumption (MWh)	CO_2e
						MT/yr
Electric TRU	Electric	20	207,252	56	4,145	105
Forklifts	Electric	28	52,560		1,472	37
Total - Electric Equipment Operation					**5617**	**143**

Notes:

1. Under the mitigated scenario, TRUs will plug in and be powered by electricity while loading or unloading. Based on Thermo King's Trailer Electrification Position Paper, electric TRUs can be expected to consume around 15-20 kW of electricity during steady-state running conditions, therefore an electric power consumption rate of 20 kW was used to estimate energy consumption.

2. Under the mitigated scenario, forklifts will be electrified. An electric power consumption rate was estimated based on the specifications for an electric forklift referenced in OFFROAD documentation for advanced clean equipment, Socma 25 ton electric forklifts, which have a power consumption rate of 15-28 kW, therefore 28 kW was used to estimate energy consumption.

3. The annual usage of electric TRUs in the mitigated scenario was calculated assuming TRUs spend 4 hour idling at the dock during loading and unloading and the TRUs take approximately 5 minutes to plug in or plug out, amounting to 3 hours and 50 minutes of electricity use for the TRUs per truck per day.

4. The CO2e intensity factor is obtained from PG&E 2022 Power Content Label.

Abbreviations:

lb - pound	MT - metric tons
VMT- vehicle miles traveled	MWh - megawatt hour
yr - year	CO_2e - carbon dioxide equivalents

References:

Thermo King. Trailer Electrification Position Paper. 2021. Available at: https://www.thermoking.com/content/dam/thermoking/documents/marketing/Trailer-electrification-position-paper-Thermo-King.pdf

CARB. List of Zero-Emission Off-Road Equipment. August 2023. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/ZEE/2023%20ZEE%20List%2008182023%20CORE%20TRL%20No%20Hybrid.pdf

SOCMA. Socma 25 Ton compact electric forklift. Available at: https://www.socma-forklift.com/heavy-duty-forklift/12-ton-16-ton-20-ton-25-ton-electric-heavy.html

PG&E, 2022. 2022 Power Content Label. Available at: https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf. Accessed: December 2023.

6. Emission factors aggregated based on OFFROAD2021 for Transportation Refrigeration Unit vehicle classes for Solano (SF) sub-area in 2026. TRU vehicle classes include Instate Gensets, Instate Trailers, Instate Trucks, Out-Of-State Gensets, and Out-Of-State Trailers. Emission factors were calculated by dividing the total TRU emissions by total TRU operation.

Abbreviations:

ARB - [California] Air Resources Board

g - gram

CO_2 - Carbon dioxide

hr - hour

mi - mile

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inv

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Thermo King. Trailer Electrification Position Paper. 2021. Available at: https://www.thermoking.com/content/dam/thermoking/documents/marketing/Trailer-electrification-position-paper-Thermo-King.pdf

Table 4-17
Mitigated TRU Operations and Emissions Factors
Suisun Logistics Center
Suisun, California

TRU Usage

TRU Usage Estimates		Value
Percent of time TRU engine is running during TRU operation [--][1]		62.5%
Operational Days [days/year]		365
Average Truck Round Trip Length [miles/trip]		79.0
Average Truck Travel Speed [miles/hour]		50
TRU Equipped Truck Population[2] [# trucks]		237
On-Site Loading and Unloading	Daily loading and unloading time[3] [hrs/day/truck]	0.167
	Annual loading and unloading time[3] [hrs/year]	14,418
	Daily On-Site TRU Usage[1,3] [hrs/day]	0.10
	Annual On-Site TRU Usage[1,3] [hrs/year]	9,011
Travel	Daily Travel Time[3] [hrs/day/truck]	1.6
	Annual Travel Time[3] [hrs/year]	136,678
	Daily Off-Site TRU Usage[1,3] [hrs/day]	1.0
	Annual Off-Site TRU Usage[1,3] [hrs/year]	85,424

TRU Emission Factors

Source	Year[4]	Model Year[5]	Fuel	Emission Factor (g/hr)[6]
				CO_2
TRU Aggregate	2026	ALL	Diesel	6,905

Notes:

1. According to Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units, TRU engines are generally running about 62.5% of time that a TRU unit is turned on.
2. The TRU truck population was assumed to equal to the number of round trips per day rounded up, or 237 trucks, assuming 100% of trucks in the cold storage scenario will be equipped with TRUs.
3. Approximate TRU idling usage under the mitigated scenario represents 5 minutes of operations during plugging in and plugging out. The TRU is assumed to be plugged in to electric outlets for the rest of the docking time of trucks. Truck travel was approximated assuming an average travel speed of 50 miles per hour and an average round-trip distance of 71.8 miles, assuming each Truck equipped with a TRU completes one round trip per day.
4. Emissions from TRUs decrease over time, but the earliest possible year was chosen to calculate criteria air pollutant emissions from TRUs.
5. Emission factors based on default model year composition for TRUs.

6. Emission factors aggregated based on OFFROAD2021 for Transportation Refrigeration Unit vehicle classes for Solano (SF) sub-area in 2026. TRU vehicle classes include Instate Gensets, Instate Trailers, Instate Trucks, Out-Of-State Gensets, and Out-Of-State Trailers. Emission factors were calculated by dividing the total TRU emissions by total TRU operation.

Abbreviations:

ARB - [California] Air Resources Board

g - gram

CO_2 - Carbon dioxide

hr - hour

mi - mile

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inv

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Thermo King. Trailer Electrification Position Paper. 2021. Available at: https://www.thermoking.com/content/dam/thermoking/documents/marketing/Trailer-electrification-position-paper-Thermo-King.pdf

Table 4-18
Mitigated GHG Emissions from Proposed Project Operations
Suisun Logistics Center
Suisun, California

Source Category	Emission Sources	Cold Storage Scenario	Dry Storage Scenario
		CO_2e (MT/yr)	
Area	Landscaping Equipment (Electric)[1]	1	1
Buildings	Electricity[2]	1,435	701
On-Road Mobile Vehicles	Trucks[3]	13,439	13,439
	Passenger Vehicles[3]	5,798	5,798
	TRU[4] (Diesel)	792	--
	TRU[4] (Electric)	105	--
On-Site Mobile Equipment[5]	Yard Trucks	816	816
	Forklifts (Electric)	37	37
Water[6]	--	727	727
Solid Waste[6]	--	604	604
Refrigerants[7]	--	5,095	--
Stationary Equipment[8]	Emergency Generators	24	24
	Fire Pumps	24	24
	Total Mitigated Emissions[9]	**28,873**	**22,147**

Notes:

[1] Mitigated GHG emissions from landscaping activities were calculated assuming all-electric landscaping equipment, as shown in Table 4-14.

[2] Operational natural gas usage rates are expected to be zero. Operational electricity emissions were calculated in Table Table 4-11 based on CalEEMod default electricity usage and CalEEMod default natural gas usage converted to electricity.

[3] Mobile emissions for Project operations were calculated using CalEEMod methodology, EMFAC2021 emission factors, and trip data provided by the Project Applicant and mitigated GHG emission factors in Table 4-15.

[4] Under the mitigated scenario, TRUs are assume to be plugged in while docked, except for 5 minutes before and after each truck docking event, where the diesel engines are assumed to be running. Direct GHG emissions from diesel use during on-road traveling and before/after docking are calculated, as well as the indirect GHG emissions from electricity consumption while the TRUS are plugged in.
The assumptions for the TRUs electricity consumption is shown in Table 4-17.

[5] Yard equipment includes yard trucks and forklifts. Emissions were calculated using ARB emission factors for yard trucks, as shown in Table 4-8, and assuming electrification for fork lifts, as shown in Table 4-16.

[6] Water and solid waste emissions for operations were calculated using CalEEMod 2022.1.

[7] Refrigerant emissions were calculated with default CalEEMod methodolgy and scaled down to reflect the maximum global warming potential (GWP) allowed under SB-1206 (2022) which prohibits the sale of refrigerants with GWP greater than 2,200 beginning in 2025.

[8] Emergency engine emissions were calculated using ARB emission factors for diesel emergency engines, as shown in Table 4-12.

[9] The term "mitigated" refers to GHG emissions accounting for emission reductions from Mitigation Measures AIR-4 through Mitigation Measures AIR-7. No mitigation measures are proposed for reducing GHG emissions.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2e - carbon dioxide equivalent
GHG - Greenhouse Gases
MT - metric ton
TRU - transportation refrigeration unit
yr - year

References:

California Emissions Estimator Model (CalEEMod). 2022.1. CAPCOA. 2022. Available online at: http://www.caleemod.com

SB-1206 Hydrofluorocarbon gases: sale or distribution. Available online at: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB1206

Table 5-1
Project VMT Compared to Regional Averages
Suisun Logistics Center
Suisun, California

Fleet Type	Trip Length[1]		Daily Trip Rates[1]	Daily VMT[3]		Percent of Project VMT Compared to Regional Average[4,5]
	Project	Regional Average		Project	Regional Average	
	Miles/Trip	Miles/Trip	Trips/day	Miles/day	Miles/day	
Employee Trips	13.2	11.5	3,253	42,940	37,410	**115%**
Truck Trips	39.5	58.2	473	18,684	27,529	68%
Project-Generated Total VMT				61,623	64,938	**95%**

Notes:

1. Daily Project trip lengths and average trip rates were provided by the Project's Traffic Study by Fehr and Peers.
2. Regional average trip lengths were included in the Project's Traffic Study update by Fehr and Peers and represents the Nine-County Bay Area average values for trip length.
3. Daily VMT is calculated by multiplying the average Project or Regional trip length by the daily project trip rates.
4. These values compare the total Project VMT to the Regional averaged VMT using the same trip rates for both employee trips and truck trips, respectively.
5. The BAAQMD's design element for evaluating GHG impacts from transportation sources is 15% below the existing VMT per employee for office projects. **Bold and underlined** numbers represent exceedances of the criterion (15% below the existing regional average).

Abbreviations:

VMT - Vehicle miles traveled

yr - year

References:

Fehr and Peers. Big Data Passenger Vehicle and Light Duty Truck Trip Lengths and Project Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California. January 17, 2024.

Table 5-2
Project's Mobile GHG Emissions Compared to Regional Averages
Suisun Logistics Center
Suisun, California

Mobile Sources	Scenario	CO_2e Emission Factor[2,3]		Daily CO_2e Emissions				Percent of Project compared to Regional Average[5]
				Project	Regional Average	85% of Regional Average[4]	Difference between Project and 85% of Regional Average	
		g/trip	g/mile	MT/day				%
Employee Trips	Both	88	298	13	11	9.7	+3.4	**114%**
Truck Trips	Unrefrigerated Warehouse	840	1,628	31	45	38	-7.6	68%
	Refrigerated warehouse		1,766	33	49	42	-8.3	68%
Total	Unrefrigerated Warehouse	--	--	44	57	48	-4.3	77%
	Refrigerated warehouse	--	--	46	60	51	-4.9	77%

Notes:

1. Both the unrefrigerated warehouse scenario and refrigerated warehouse scenario are considered for this evaluation. Emission factors for employee trips do not differ for these two scenarios.
2. CO_2e emission factors for employee trips were developed by creating weighted emission factors based on the Solano County EMFAC 2021 default mixture of LDA/LDT1/LDT2/MDV within the passenger vehicle fleet. CO_2e emission factors for unrefrigerated truck trips are obtained from Solano County EMFAC 2021 default for 100% HHDT diesel trucks. Refrigerated truck trips include the Solano County EMFAC 2021 default for 100% HHDT diesel trucks and the default g/hr emission factor for TRU travel converted to g/mile assuming average travel speed of 50 mph. Conservatively, CO_2e emission factors from the unmitigated scenario are used in this calculation.
3. The mileage-based emission factor under the refrigerated warehouse scenario includes emissions factors from trucks and TRUs. TRU travel emission factor is based on Table 4-9, converted from grams per hour to grams per mile based on average truck travel speed.
4. 85% of regional average corresponds to the BAAQMD's design element for evaluating GHG impacts, which is 15% below the existing VMT per employee for office projects.
5. **Bold and underlined** numbers represent exceedances of the criterion (15% below the existing regional average).

Abbreviations:

CO_2e - carbon dioxide equivalent
g - gram
GHG - greenhouse gas
LDA - light duty auto (passenger cars)
LDT- light duty trucks
MT - Metric Ton
MDV - medium duty trucks
mph - mile per hour
TRU - transportation refrigeration unit
VMT - Vehicle miles traveled
yr - year

References:

Fehr and Peers. Big Data Passenger Vehicle and Light Duty Truck Trip Lengths and Project Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California. January 17, 2024.

Table 6-1
Consistency with MTC/ABAG Regional Transportation Plan/Sustainable Communities Strategy
Suisun Logistics Center
Suisun, California

Strategy	Goal	Objective	Consistency Analysis
Housing Strategies	Protect and Preserve Affordable Housing	**H1. Further strengthen renter protections beyond state law**. Building upon recent tenant protection laws, limit annual rent increases to the rate of inflation, while exempting units less than 10 years old.	**Not Applicable.** The Project would not include any residential uses.
		H2. Preserve existing affordable housing. Acquire homes currently affordable to low and middle-income residents for preservation as permanently deed-restricted affordable housing.	
	Spur Housing Production for Residents of All Income Levels	**H3. Allow a greater mix of housing densities and types in Growth Geographies.** Allow a variety of housing types at a range of densities to be built in Priority Development Areas, select Transit-Rich Areas and select High-Resource Areas.	
		H4. Build adequate affordable housing to ensure homes for all. Construct enough deed-restricted affordable homes to fill the existing gap in housing for the unhoused community and to meet the needs of low-income households.	
		H5. Integrate affordable housing into all major housing projects. Require a baseline of 10-20% of new market-rate housing developments of five units or more to be affordable to low-income households.	
		H6. Transform aging malls and office parks into neighborhoods. Permit and promote the reuse of shopping malls and office parks with limited commercial viability as neighborhoods with housing for residents at all income levels.	
	Create Inclusive Communities	**H7. Provide targeted mortgage, rental and small business assistance to Equity Priority Communities.** Provide assistance to low-income communities and communities of color to address the legacy of exclusion and predatory lending, while helping to grow locally owned businesses.	
		H8. Accelerate reuse of public and community-owned land for mixed-income housing and essential services. Help public agencies, community land trusts and other non-profit landowners accelerate the development of mixed-income affordable housing.	
Economic Strategies	Improve Economic Mobility	**EC1. Implement a statewide universal basic income.** Provide an average $500 per month payment to all Bay Area households to improve family stability, promote economic mobility and increase consumer spending	**Not Applicable.** This measure is directed at the jurisdictions instead of individual private developments.
		EC2. Expand job training and incubator programs. Fund assistance programs for establishing new businesses, as well as job training programs, primarily in historically disinvested communities	**Consistent.** Although this goal is not applicable to an individual commercial development project, the Project would generate new jobs for the surrounding community and is accessible via nearby public transit, which provides a low-cost option for commuting.
		EC3. Invest in high-speed internet in underserved low-income communities. Provide direct subsidies and construct public infrastructure to ensure all communities have affordable access to high-speed internet.	**Not Applicable.** This measure is directed at the jurisdictions

Table 6-1
Consistency with MTC/ABAG Regional Transportation Plan/Sustainable Communities Strategy
Suisun Logistics Center
Suisun, California

Strategy	Goal	Objective	Consistency Analysis
Economic Strategies (Cont.)	Shift the Location of Jobs	**EC4. Allow greater commercial densities in Growth Geographies.** Allow greater densities for new commercial development in select Priority Development Areas and Transit-Rich Areas to encourage more jobs to locate near public transit.	**Not Applicable.** The strategy and objective is directed towards City prioritization of commerical development and not a requirement for warehouse projects. Nevertheless, the Project is ideally and strategically located to address the VMT of the trucks transporting goods as discussed in Section 5.
		EC5. Provide incentives to employers to shift jobs to housing-rich areas well served by transit. Provide subsidies to encourage employers to relocate offices to housing rich areas near regional rail stations.	**Consistent.** Although the vicinity is not categorized as a priority development area, the Project would create new jobs near housing rich areas and is located less than 0.5 miles away from public transit stops. Therefore, the Project would create jobs that are accessible via public transit.
		EC6. Retain and invest in key industrial lands. Implement local land use policies to protect key industrial lands, identified as Priority Production Areas, while funding key infrastructure improvements in these areas	**Not Applicable.** The strategy and objective is directed towards City prioritization and not a requirement for warehouse projects. Nevertheless, the Project is a development for a key logistical function for the City and surrounding areas.
Transportation Strategies	Maintain and Optimize the Existing System	**T1. Restore, operate and maintain the existing system.** Commit to operate and maintain the Bay Area's roads and transit infrastructure while reversing pandemic-related cuts to total transit service hours.	**Not Applicable.** The strategy and objectives are directed towards City efforts on addressing the transit system and not a requirement for warehouse projects. The Project is located less than 0.5 miles from a public transit stop.
		T2. Support community-led transportation enhancements in Equity Priority Communities. Provide direct funding to historically marginalized communities for locally identified transportation needs.	
		T3. Enable a seamless mobility experience. Eliminate barriers to multi-operator transit trips by streamlining fare payment and trip planning while requiring schedule coordination at timed transfer hubs.	
		T4. Reform regional transit fare policy. Streamline fare payment and replace existing operator-specific discounted fare programs with an integrated fare structure across all transit operators.	
		T5. Implement per-mile tolling on congested freeways with transit alternatives. Apply a per-mile charge on auto travel on select congested freeway corridors where transit alternatives exist, with discounts for carpoolers, low-income residents, and off-peak travel; and reinvest excess revenues into transit alternatives in the corridor.	
		T6. Improve interchanges and address highway bottlenecks. Rebuild interchanges and widen key highway bottlenecks to achieve short- to medium-term congestion relief.	
		T7. Advance other regional programs and local priorities. Fund regional programs like motorist aid and 511 while supporting local transportation investments on arterials and local streets.	

Table 6-1
Consistency with MTC/ABAG Regional Transportation Plan/Sustainable Communities Strategy
Suisun Logistics Center
Suisun, California

Strategy	Goal	Objective	Consistency Analysis
Transportation Strategies (Cont.)	Create Healthy and Safe Streets	**T8. Build a Complete Streets network.** Enhance streets to promote walking, biking and other micro-mobility through sidewalk improvements, car-free slow streets, and 10,000 miles of bike lanes or multi-use paths.	**Consistent.** The Project would provide sidewalk improvements on the Petersen Road frontage.
	Create Healthy and Safe Streets	**T9. Advance regional Vision Zero policy through street design and reduced speeds.** Reduce speed limits to between 20 and 35 miles per hour on local streets and 55 miles per hour on freeways, relying on design elements on local streets and automated speed enforcement on freeways.	**Not Applicable.** This strategy and objective is directed towards the City regulation. Nevertheless, the Project will have speed limits as required by the City.
	Build a Next-Generation Transit Network	**T10. Enhance local transit frequency, capacity and reliability.** Improve the quality and availability of local bus and light rail service, with new bus rapid transit lines, South Bay light rail extensions, and frequency increases focused in lower-income communities	**Not Applicable.** The strategy and objectives are directed towards City efforts on addressing the transit system and not a requirement for warehouse projects. The Project is located less than 0.5 miles from a public transit stop.
		T11. Expand and modernize the regional rail network. Better connect communities while increasing frequencies by advancing the Link21 new transbay rail crossing, BART to Silicon Valley Phase 2, Valley Link, Caltrain Downtown Rail Extension and Caltrain/High-Speed Rail grade separations, among other projects.	
		T12. Build an integrated regional express lanes and express bus network. Complete the buildout of the regional express lanes network to provide uncongested freeway lanes for new and improved express bus services, carpools and toll-paying solo drivers.	
Environmental Strategies	Reduce Risks from Hazards	**EN1. Adapt to sea level rise.** Protect shoreline communities affected by sea level rise, prioritizing low-cost, high-benefit solutions and providing additional support to vulnerable populations.	**Not Applicable.** The Project is not located in a community affected by sea level rise. The Project would not include any existing residential, commercial, or public buildings.
		EN2. Provide means-based financial support to retrofit existing residential buildings. Adopt building ordinances and incentivize retrofits to existing buildings to meet higher seismic, wildfire, water and energy standards, providing means-based subsidies to offset associated costs.	
		EN3. Fund energy upgrades to enable carbon neutrality in all existing commercial and public buildings. Support electrification and resilient power system upgrades in all public and commercial buildings.	

Table 6-1
Consistency with MTC/ABAG Regional Transportation Plan/Sustainable Communities Strategy
Suisun Logistics Center
Suisun, California

Strategy	Goal	Objective	Consistency Analysis
Environmental Strategies (Cont.)	Expand Access to Parks and Open Space	**EN4. Maintain urban growth boundaries.** Using urban growth boundaries and other existing environmental protections, focus new development within the existing urban footprint or areas otherwise suitable for growth, as established by local jurisdictions.	**Consistent.** The Project would preserve approximately 47 acres of open space. Part of the open space is a conservation easement contains wetlands and is suitable for livestock grazing.
		EN5. Protect and manage high-value conservation lands. Provide strategic matching funds to help conserve and maintain high-priority natural and agricultural lands, including but not limited to, Priority Conservation Areas and wildland-urban interface areas.	
		EN6. Modernize and expand parks, trails and recreation facilities. Invest in quality parks, trails and open spaces that provide inclusive recreation opportunities for people of all backgrounds, abilities and ages to enjoy.	
	Reduce Climate Emissions	**EN7. Expand commute trip reduction programs at major employers.** Set a sustainable commute target for major employers as part of an expanded Bay Area Commuter Benefits Program, with employers responsible for funding incentives and disincentives to shift auto commuters to any combination of telecommuting, transit, walking and/or bicycling.	**Consistent.** The Project is required to prepare a transportation demand management (TDM) plan, which would reduce commute trips through various measures, such as establishing vanpool programs and providing on-site infrastructures for bikers and pedestrians.
		EN8. Expand clean vehicle initiatives. Expand investments in clean vehicles, including more fuel-efficient vehicles and electric vehicle subsidies and chargers.	**Consistent.** The Project will meet CALGreen Tier 2 electric vehicle charging requirements.
		EN9. Expand transportation demand management initiatives. Expand investments in programs like vanpools, bikeshare, carshare and parking fees to discourage solo driving.	**Consistent.** The Project is required to prepare a TDM plan.

Sources:

Association of Bay Area Governments Metropolitan Transportation Commission. 2021. Plan Bay Area 2050. October, 2021.

Table 6-2
Consistency with Solano County Climate Action Plan
Suisun Logistics Center
Suisun, California

Strategy Sector	Title	Measure	Consistency Analysis
Agriculture	Soil Management and Carbon Sequestration	**AG-1:** Develop a program that provides outreach, technical assistance, and incentives to promote soil management techniques that reduce nitrous oxide emissions and increase carbon sequestration within agricultural operations.	**Not Applicable.** The Project does not propose any agricultural land uses or activities for the site.
	Field Equipment Outreach Porgram	**AG-2:** Develop an outreach program aimed at reducing field equipment emissions and fuel costs.	
	Methane Emission Control and Biogas Power Generation	**AG-3:** Encourage confined livestock operations within the County to develop biogas control systems and biogas power-generation systems.	
	Fumigant Alternatives	**AG-4:** Encourage the use of alternatives to the fumigant and potent greenhouse gas Methyl Bromide and other fumigants with high global warming potential.	
	Local Markets	**AG-5:** Assist agricultural producers and processors in efforts to increase the sale of locally grown-products to local/regional markets	
	Agriculture Ombudsman	**AG-6:** Allocate financial resources towards the position of a County Agricultural Ombudsman.	
Energy and Efficiency	Community Choice Aggregation	**E-1:** Investigate the potential to establish a countywide community choice aggregation program and increase the community's use of locally produced renewable energy.	**Consistent.** Although this measure does not apply to individual developments, the Project's electricity would be provided by the Community Choice Aggregation Program of Solano County, the Marin Clean Energy Joint Powers.
	Comprehensive Renewable Energy Program	**E-2**: Develop a comprehensive renewable energy program that provides outreach, financing, and other forms of assistance to residential, commercial, agricultural, and industrial uses.	**Not Applicable.** This measure is directed at the local governments.
	Comprehensive Renewable Energy Program	**E-3**: Develop a comprehensive energy efficiency program that provides outreach, financing, and other forms of assistance to residential, commercial, agricultural, and industrial uses.	**Consistent.** Although these measures do not apply to individual developments, the proposed buildings of the Project are subject to the energy efficiency standards in the most recent (2022) Title 24 Energy Code.
	Greem Building and Energy Efficiency	**E-4:** Adopt green building and energy efficiency ordinances to require green building practices, programs and design elements.	
	Food Waste-to-Energy Biomass Facility	**E-5:** Work with Cal Recycle, Bay Area waste agencies, other jurisdictions, and interested private sector parties to develop an agricultural and food waste-to-energy biomass facility in Solano County.	**Not Applicable.** The Project is not a biomass facility.
	Industrial and Process Energy Efficiency	**E-6:** Partner with Solano Economic Development Corporation, Pacific Gas & Electric, and agricultural processing and industrial energy businesses to increase building and process energy efficiency.	**Not Applicable.** The Project would not include any industrial processes.
	Eco-Agriculture and Food Processing Park	**E-7:** Work with Solano Economic Development Corporation and cities to establish an eco-agriculture and food processing park that incorporates industrial ecology, renewable energy generation, and zero-waste practices.	**Not Applicable.** The Project does not propose any agricultural or food processing land uses or activities for the site.
Transportation and Land Use	Rideshare Infrastructure	**TC-1:** Solano County will work with STA to enhance countywide rideshare infrastructure and services.	**Consistent.** Although these measures do not apply to individual developments, the Project will implement a transportation demand management (TDM) plan, which would reduce commute trips through various measures, such as establishing vanpool programs and providing on-site infrastructures for bikers and pedestrians.
	Public Transit	**TC-2:** Work with STA to increase public transit ridership by expanding express bus service and improving transit stop amenities and transit connections.	
	Bus and Pedestrian Connections	**TC-3:** Work with cities and STA to improve bicycle and pedestrian connectivity in the county.	
	Fuel Efficiency Public Outreach	**TC-4:** Educate residents and businesses about options to reduce motor vehicle emissions.	**Consistent.** Although these measures do not apply to individual developments, the Project will implement various air quality mitigation measures that reduce motor vehicle emissions.

Table 6-2
Consistency with Solano County Climate Action Plan
Suisun Logistics Center
Suisun, California

Strategy Sector	Title	Measure	Consistency Analysis
Transportation and Land Use (Cont.)	Live-Work Uses	**LU-1:** Update the zoning ordinance to allow live-work uses in residential zones as long as such uses are compatible with existing community character.	**Not Applicable.** The Project would not include any residential uses.
	Land Conservation	**LU-2:** Protect and preserve forested areas, agricultural lands, wildlife habitat, and wetlands that provide carbon sequestration.	**Consistent.** The Project would preserve approximately 47 acres of open space. Part of the open space is a conservation easement contains wetlands and is suitable for livestock grazing.
	Tree Planting	**LU-3:** Protect oak woodlands and heritage trees and encourage the planting of native tree species in new developments and along road rights-of-way. Require the planting of shade and roadside trees in development projects.	**Consistent.** The Project would provide landscape areas with shrubs and trees on and around the site. There are no oaks or other trees of heritage status on the site.
Waste Reduction and Recycling	Zero-Waste Plan	**W-1:** Work with the Local Task Force and other organizations to create a zero-waste plan and provide public education regarding zero-waste strategies and implementation.	**Not Applicable.** This measure is directed at the County.
	Construction and Demolition Ordinance	**W-2:** Adopt a Construction and Demolition Ordinance to require 65% of construction and demolition debris to be recycled or reused by 2020.	**Consistent.** Construction of the Project is subject to the City's ordinance, which requires compliance with CALGreen recycling requirements, including the 65% recycling and reuse rate of construction debris.
	Commercial Recycling Program	**W-3:** Work with State agencies to provide free audits to commercial generators and recommend strategies to reduce waste and increase recycling and composting.	**Not Applicable.** These measures are directed at the County.
	Methane Capture	**W-4:** Facilitate CalRecycle and the State Air Resources Board's (ARB) implementation of the Landfill Methane Capture Strategy by requiring landfills to capture methane to the greatest extent feasible.	
Water Conservation	Agricultural Water Management	**WC-1:** Work with the Agricultural Water Conservation Committee of the Solano Water Advisory Commission to promote efficient irrigation and agricultural water management.	**Not Applicable.** The Project would not include any residential uses or landscaping area more than 2,500 square feet. It would also not require substantial water volume for irrigation. The Project would employ all applicable water efficient plumbing fixtures as required by Plumbing Code, and comply with the City's water efficient landscaping requirements.
	Water Conservation Outreach and Incentives	**WC-2:** Work with Solano County water providers, including representatives for well users that share water with their neighbors for residential water use, to expand and promote outreach programs and incentives for water conservation.	
	Water Efficiency in Major Landscape Projects	**WC-3:** Increase water-efficiency requirements for major (>2,500 square feet) landscape projects in new construction and remodels.	

Sources:

County of Solano. 2021. Climate Action Plan. June.

APPENDIX A
TRAFFIC INFORMATION

Memorandum

Date: January 17, 2024

To: Joe Livaich, Buzz Oates

From: Grace Chen and Ian Barnes, PE, Fehr & Peers

Subject: Big Data Passenger Vehicle and Light Duty Truck Trip Lengths and Project-Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California

WC23-4048

This memorandum summarizes a Big Data-based passenger vehicle and light duty truck trip length assessment for sample sites in Fairfield and Suisun City, California. This memorandum also provides a comparison of project-generated VMT estimates for the Suisun Logistics Center project against similar sites considering Bay Area regional trip length averages for passenger vehicle and light duty truck trips as well as trip Bay Area regional length averages for medium and heavy truck trips. The aggregated total vehicle-miles traveled (VMT) was analyzed based on the Suisun Logistics Center project trip generation. This work is built off the data collected and summarized in the *Big Data Truck Trip Length Assessment for Sample Sites in Fairfield and Suisun City, California* memorandum completed by Fehr & Peers in September 2023.

The purpose of the assessment was to provide more direct observation measurements of travel patterns for passenger vehicle and light duty truck trips to supplement trip length assumptions used in the environmental documentation for the Suisun Logistics Center project in eastern Suisun City, California.

Trip Length Data Collection

Fehr & Peers previously obtained data from the StreetLight Data database to establish trip lengths associated with medium and heavy truck trips at sites similar to the proposed project in Suisun City. The Big Data pull included three aggregated industrial areas around Fairfield and Suisun City with similar uses. For this analysis, Fehr & Peers used the same Big Data pull setup while switching the focus of the pull to analyzing trips made by automobiles and light duty trucks. The data was then summarized using an approach similar to the medium and heavy duty truck trip analysis method.

The Big Data pull included approximately 16,548 observations over the three area for passenger vehicles and light duty trucks. The weekday daily average trip length data is summarized in **Table 1**. Medium and heavy truck average trip length from Fehr & Peers's previous work are also included for comparison purposes.

Table 1: Fairfield-Suisun City Big Data Average Trip Length

Vehicle Type	Total Sample Count*	Average Trip Length (miles)
Passenger Vehicles and Light Duty Trucks	16,548	13.2
Medium and Heavy Trucks	3,981	39.5
Total	**20,529**	**18.3**

Note: StreetLight Data's sample count are the counts of all trips in the StreetLight sample for all days in the data period.
Source: Fehr & Peers, January 2024.

Total Project-Generated VMT

Based on the Transportation Chapter of the *Suisun Logistics Center Project Draft EIR*, the proposed project is expected to generate an average of 3,726 trips per day, including 3,253 passenger vehicle or light duty truck trips and 473 medium and heavy duty truck trips. **Table 2** (located on the next page) presents a comparison between project-generated VMT estimate calculations using two data sources:

- Bay Area regional trip length data consisting of (1) data representing automobile and light duty truck commute trip lengths per the Draft EIR for the project and (2) a regional Big Data-based study of warehouse truck trips throughout the Bay Area
- Big Data-based trip length data for local sample sites in Fairfield and Suisun City

Table 2: Weekday Daily Project-Generated VMT Estimates

Vehicle Type	Project Trip Generation	Bay Area Average		Big Data	
		Trip Length (One-Way)	VMT	Trip Length (One-Way)	VMT
Passenger Vehicles and Light Duty Trucks	3,253	11.5[1]	37,410	13.2	42,940
Medium and Heavy Trucks	473	58.2[2]	27,529	39.5	18,684
Total	**3,726**	**-**	**64,938**	**-**	**61,623**

Notes:
1. Nine-County Bay Area Average VMT per employee is 23 miles per employee, which is around 11.5 miles one-way. See Appendix H, *Traffic Impact Study for the Giovannoni Logistics* W-Trans, July 2021.
2. See Appendix A, *Big Data Truck Trip Length Assessment for Sample Sites in Fairfield and Suisun City, California.* Fehr & Peers, September 2023.

The analysis presented in **Table 2** suggests that the proposed project would generate less total project-generated VMT than a similar site generally in the Bay Area. The difference in project-generated VMT using the Big Data samples is about 5.1% lower than the calculation using the Bay Area averages.

This concludes our assessment of Big Data passenger vehicle trip and light duty truck lengths and project-generated VMT for the proposed Suisun Logistics Center. Please call Grace Chen or Ian Barnes at (925) 930-7100 with any questions.

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B.3 - Energy Technical Report

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Prepared for
Buzz Oates

Prepared by:
Ramboll Americas Engineering Solutions, Inc.
Irvine, California

Project Number
1690029367

Date
March 2024

SUISUN LOGISTICS CENTER ENERGY TECHNICAL REPORT

SUISUN CITY, CALIFORNIA

RAMBOLL

CONTENTS

CONTENTS *(CONTINUED)*

TABLES

ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACC	Advanced Clean Cars
ATCM	Airborne Toxic Control Measure
CalEEMod	California Emissions Estimator Model
CAFE	Corporate Average Fuel Economy
CalGreen	California Green Building Standards Code
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
CVRP	Clean Vehicle Rebate Project
DOT	U.S. Department of Transportation
EIR	Environmental Impact Report
EMFAC	The California Air Resources Board EMission FACtors model
EO	Executive Order
EISA	Energy Independence and Security Act
EPA	U.S. Environmental Protection Agency
EV	Electric vehicle
GHG	greenhouse gas
GWh	gigawatt hours
hp	horsepower
HOV	high-occupancy vehicle
HVAC	Heating, Ventilation and Air Conditioning
IEPR	Integrated Energy Policy Report
ISTEA	Intermodal Surface Transportation Efficiency Act
kWh	kilowatt hours
LCFS	Low Carbon Fuel Standard
LEV	new low emission vehicles
LPG	liquefied petroleum gas
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
MWh	megawatt hours
NHTSA	National Highway Traffic Safety Administration
NO_X	oxides of nitrogen
PG&E	Pacific Gas and Electric Company
PM	particulate matter
Ramboll	Ramboll Americas Engineering Solutions, Inc.
RPS	Renewables Portfolio Standard
RTPs	regional transportation plans
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill

Acronym	Definition
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SDG&E	San Diego Gas & Electric
TDV	time dependent valuation
TEA	Transportation Efficiency Act
VDECS	Verified Diesel Emission Control Strategies
VMT	vehicle miles traveled
VW	Volkswagen
ZEV	zero emission vehicle
ZNE	zero net energy

1. INTRODUCTION

Ramboll Americas Engineering Solutions, Inc. (Ramboll) was retained to prepare an Energy Technical Report for the proposed Suisun Logistics Center (Project).

This Energy Technical Report analyzes the Project's energy impacts from construction and operations. In particular, this report describes the existing setting of the Project site, describes the relevant regulatory background, discusses the methodology used to evaluate energy impacts related to the Project, and evaluates potential impacts related to energy that would be consumed as a result of implementation of the Project.

1.1 Existing Conditions

The 167.43-acre Project site is located in unincorporated Solano County, within the existing Suisun City (the City) Sphere of Influence. The Project site is bounded by a service station and Walters Road to the west, Petersen Road to the north, grazing land to the east, and State Route (SR) 12 to the south. Travis Air Force Base (TAFB) is located approximately 0.5 mile to the east. The existing site is designated "Agricultural" by the Solano County General Plan and is zoned "Exclusive Agricultural 160 acres (A-160)" by the Solano County Zoning Ordinance. The land is currently used for cattle grazing and contains grassy vegetation. The Project site is currently designated "Special Planning Area" by the Suisun City General Plan, which is a non-binding designation anticipated to be superseded if and when the City approves the project site for development. The Project site would be annexed into the City's limit as a result of the Project.

1.2 Project Analysis

The Project consists of 2.1 million square feet of warehouse uses on approximately 120 acres. The Project would construct six buildings ranging from approximately 145,000 to 645,000 square feet in size. Each building would be equipped with docks, grade-level roll-up doors, and trailer parking stalls as well as associated passenger vehicle parking areas, driveways, and other supporting infrastructure. The facility would be enclosed with a secure perimeter and access would be restricted to authorized users via three main hauling and passenger entrances on along Petersen Road and one passenger entrance along Walters Road.

The rest of the Project site, totaling approximately 47 acres, would be preserved as open space. In addition to warehouse construction, the project would also include storm drainage installation, roadway and sidewalk improvements, and installation of utilities, such as the extension of service laterals to the proposed buildings.

Peterson Road would be widened to include three full access unsignalized driveways intended for trucks and an additional eastbound lane. The existing Petersen Road westbound lane and Class I bike/pedestrian facility would also be improved by the Project. Some of these Peterson Road improvements are in furtherance of a project objective of increasing the capacity of that roadway Road beyond what is necessary to mitigate Project impacts in order to provide a net benefit for Travis Air Force Base (TAFB).

2. ENERGY ENVIRONMENTAL AND REGULATORY OVERVIEW

2.1 General Setting

2.1.1 Energy Production and Distribution

In 2022, California ranked seventh in the nation in production of crude oil, 15th in production of natural gas, fourth in generation of hydroelectric power, and first as a producer of electricity from biomass, geothermal, and solar energy.[1] California produces less than 10% of the natural gas used in the state; over 90% of the natural gas used in California is imported from Canada, the Southwest, and the Rocky Mountains region of the United States. Nearly half of the crude oil refined in California is from foreign countries, including Saudi Arabia, Iraq, Ecuador, and Colombia. Additional crude oil is imported from Alaska. Between one-fifth and one-third of California's electricity is imported from out-of-state.[2]

Electricity Supply

The production of electricity requires the combustion, consumption, or conversion of other energy resources, including water, wind, oil, natural gas, coal, solar, geothermal, and nuclear. Of the electricity that is generated within the state in 2021, 50.2% is generated by natural gas-fired power plants, 17.1% by solar, 7.4% by hydroelectric, 8.5% by nuclear power plants, 7.8% by wind, and a remaining 8.5% by other renewables.[3]

For Solano County and the City of Suisun City, Pacific Gas and Electric Company (PG&E) is the primary distributor of electricity to businesses and residents of the area. PG&E's 70,000-square-mile service area covers both Northern and Central California. By the end of 2022, about 40 percent of the energy delivered to PG&E's customers came from eligible renewable energy-related projects.[4]

Transportation Fuels Supply

Most petroleum fuel refined in California is for use in on-road motor vehicles and is refined within California to meet state-specific formulations required by the California Air Resources Board (CARB). The major categories of petroleum fuels are gasoline and diesel for passenger vehicles, transit, and rail vehicles; and fuel oil for industry and emergency electrical power generation. Other liquid fuels include kerosene, jet fuel, and residual fuel oil for marine vessels.

California's oil fields make it the seventh -largest petroleum-producing state in the United States. Crude oil is moved from area to area within California through a network of pipelines that carry it from both onshore and offshore oil wells to the refineries that are located in the San Francisco Bay Area, the Los Angeles area, and the Central Valley. Currently, 14

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1 U.S. Energy Information Administration. 2023. California State Profile and Energy Estimates: Profile Overview. Available online at: http://www.eia.gov/state/?sid=CA. Accessed: December 2023.

2 U.S. Energy Information Administration. 2022. California State Profile and Energy Estimates: Profile Analysis. Available online at: https://www.eia.gov/state/analysis.cfm?sid=CA. Accessed: December 2023.

3 California Energy Commission. 2023. 2021 Total System Electric Generation. Available online at: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation. Accessed: December 2023.

4 Pacific Gas and Electric Company. 2021. Corporate Responsibility and Sustainability Report 2021. Executive Summary. Available online at:https://www.pgecorp.com/sustainability/corporate-sustainability.html. Accessed: December 2023.

petroleum refineries operate in California, processing approximately 1.8 million barrels per day of crude oil.[5]

Other transportation fuel sources are alternative fuels, such as methanol and denatured ethanol (alcohol mixtures that contain no less than 70% alcohol), natural gas (compressed or liquefied), liquefied petroleum gas (LPG), hydrogen, and fuels derived from biological materials (i.e., biomass).

2.1.2 Energy Consumption

Electricity Consumption

Californians consumed 287,826 gigawatt hours (GWh) of electricity in 2020.[6] Of this total, Solano County consumed 3,255 GWh.[7]

Transportation Sector Fuels Consumption

The transportation sector is a major end-use of energy in California, accounting for approximately 41.2% of total state-wide energy consumption in 2021, the most recent year for which data is available.[8] In addition, energy is consumed in connection with construction and maintenance of transportation infrastructure, such as streets, highways, freeways, rail lines, and airport runways. California's 28.5 million vehicles consume more than 15.4 billion gallons of gasoline and more than 3.7 billion gallons of diesel each year.[9]

2.2 Regulatory Overview

2.2.1 Federal Programs

2.2.1.1 Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 was established in response to the oil crisis of 1973, which increased oil prices due to a shortage of reserves. The Act requires that all vehicles sold in the U.S. meet certain fuel economy goals, known as the Corporate Average Fuel Economy standards. The National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation (DOT) administers the Corporate Average Fuel Economy program, and the U.S. Environmental Protection Agency (EPA) provides the fuel economy data.

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[5] U.S. Energy Information Administration. 2021. Petroleum & Other Liquids. Number and Capacity of Petroleum Refineries. Available online at: https://www.eia.gov/dnav/pet/PET_PNP_CAP1_DCU_SCA_A.htm. Accessed: December 2023.

[6] A watt hour is a unit of energy equivalent to one watt of power expended for one hour. For example, a typical light bulb is 60 watts, meaning that if it is left on for one hour, 60-watt hours have been used. One kilowatt equals 1,000 watts. The consumption of electrical energy by homes and businesses is usually measured in kilowatt hours (kWh). Some large businesses and institutions also use megawatt hours (MWh), where one MWh equals 1,000 kWh. One gigawatt equals one thousand (1,000) megawatts, or one million (1,000,000) kilowatts. The energy output of large power plants over long periods of time, or the energy consumption of jurisdictions, can be expressed in gigawatt hours (GWh).

[7] Electricity data for Solano County and the State of California in 2022 are obtained from the California Energy Commission, electricity consumption by county. Available at: https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed: December 2023.

[8] U.S. Energy Information Administration. 2023. California State Profile and Energy Estimates: California Energy Consumption by End-Use Sector, 2021. Available online at: http://www.eia.gov/state/?sid=CA#tabs-2. Accessed: December 2023.

[9] CARB. EMFAC2021. Emissions Inventory - State-wide for Calendar Year 2021. Available online at: https://arb.ca.gov/emfac/. Accessed: December 2023.

In April 2010, the EPA and NHTSA issued a final rulemaking establishing new federal fuel economy standards for model years 2012 to 2016 passenger cars and light-duty trucks. For model year 2012, the fuel economy standards for passenger cars, light trucks, and combined cars and trucks were 33.3 miles per gallon (mpg), 25.4 mpg, and 29.7 mpg, respectively.[10] These standards increase progressively up to 37.8 mpg, 28.8 mpg, and 34.1, respectively, for model year 2016. In subsequent rulemakings, the agencies extended the national program of fuel economy standards to passenger vehicles and light-duty trucks of model years 2017-2025, culminating in fuel economy of 54.5 mpg by model year 2025,[11] as well as to medium- and heavy-duty vehicles of model years 2014-2018, including large pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses. [12]

In August 2016, the EPA and NHTSA adopted the next phase (Phase 2) of the fuel economy and GHG standards for medium- and heavy-duty trucks, which apply to vehicles with model year 2018 and later.[13] In response to the EPA's adoption of the Phase 2 standards, CARB staff brought a proposed California Phase 2 program before its Board in 2017; and the Board approved the program in March 2018.[14]

In 2018, the EPA and NHTSA proposed to amend certain existing Corporate Average Fuel Economy standards for passenger cars and light trucks and establish new standards, covering model years 2021-2026. Compared to maintaining the post-2020 standards now in place, the proposal would increase U.S. fuel consumption.[15]

In 2019, the EPA and NHTSA announced the One National Program Rule, which allows the federal government to set the standard for uniform fuel economy and greenhouse gas (GHG) emissions of automobiles and light-duty trucks. This rule pre-empts state and local programs from setting the national standard, which includes California's GHG and zero-emission vehicle (ZEV) programs.[16]

[10] United States Environmental Protection Agency (EPA) and United States Department of Transportation (DOT). 2010. *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*. Final Rule. 75 Fed. Reg. 25324-25728.

[11] United States Environmental Protection Agency (EPA) and United States Department of Transportation (DOT). 2012. *2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards*; Final Rule. 77 Fed. Reg. 62623.

[12] United States Environmental Protection Agency (EPA) and United States Department of Transportation (DOT). 2011. *Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles.* 76 Fed. Reg. 57106.

[13] USEPA. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-greenhouse-gas-emissions-and-fuel-efficiency. Accessed: December 2023.

[14] CARB. CA Phase 2 GHG webpage: https://ww2.arb.ca.gov/our-work/programs/greenhouse-gas-standards-medium-and-heavy-duty-engines-and-vehicles/phase2. Accessed: December 2023.

[15] Federal Register. 2018. *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*. Available at: https://www.federalregister.gov/documents/2018/08/24/2018-16820/the-safer-affordable-fuel-efficient-safe-vehicles-rule-for-model-years-2021-2026-passenger-cars-and. Accessed: December 2023.

[16] EPA. 2019. *Trump Administration Announces One National Program Rule on Federal Preemption of State Fuel Economy Standards*. Available at: https://www.epa.gov/newsreleases/trump-administration-announces-one-national-program-rule-federal-preemption-state-fuel. Accessed: December 2023.

On Day One of the Biden Administration, the President signed Executive Order 13990[17], which directed NHTSA and EPA to immediately review and consider suspending or rescinding the SAFE I Rule. On April 28, 2021, EPA published a notice regarding reconsideration of a prior action that withdrew a waiver of pre-emption for California's ZEV mandate and greenhouse gas emission standards. On May 12, 2021, the NHTSA published a notice of proposed rulemaking, proposing to repeal key portions of the SAFE Rule Part I. A virtual public hearing for EPA's Notice of Reconsideration of SAFE I was held on June 2, 2021. The NHTSA finalized the Corporate Average Fuel Economy Pre-emption rulemaking to withdraw its portions of the SAFE I Rule on December 21, 2021.[18] On March 9, 2022, USEPA reinstated California's authority under the Clean Air Act to implement its own GHG emission standards and ZEV sales mandate and entirely rescinded the SAFE Rule (Part One). On July 28, 2023, the NHTSA announced a new proposal for Corporate Average Fuel Economy (CAFE) and heavy-duty pickup truck and van standards. The proposal set new standards for model years 2027-2032 for CAFE and model years 2030-2035 for heavy-duty pickup trucks and vans.[19]

In December 2021, EPA finalized revised national greenhouse gas emissions standards for passenger cars and light trucks for Model Years 2023-2026.[20] These standards are the strongest vehicle emissions standards established for the light-duty vehicle sector and will result in avoiding more than 3 billion tons of GHG emissions through 2050.

In August 2021, USEPA proposed to revise existing national GHG emissions standards for passenger cars and light trucks for Model Years 2023- 2026 to make the standards more stringent. On August 5, 2021, USEPA announced plans to reduce GHG emissions and other harmful air pollutants from heavy-duty trucks through a series of rulemakings over the next three years. The first rulemaking, signed in December 2022, focuses on reducing emissions that form smog and soot from heavy-duty vehicles in model year 2027 and beyond.[21] Since this first rulemaking, two additional rulemakings have been proposed. One focuses on smog and soot forming emissions and greenhouse gas emissions from light- and medium-duty vehicles starting with model year 2027, and later models of commercial pickup trucks and vans. The other focuses on greenhouse gas emissions from heavy-duty vehicles for model year 2027 and later.

2.2.1.2 Energy Policy Act of 2005 and Energy Independence and Security Act of 2007

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Energy Policy Act, consumers and businesses can attain federal tax credits for purchasing

[17] Executive Office of the President. Executive Order 13990. 2021. Available at: https://www.federalregister.gov/documents/2021/01/25/2021-01765/protecting-public-health-and-the-environment-and-restoring-science-to-tackle-the-climate-crisis. Accessed: December 2023.

[18] NHTSA. 2023. Corporate Average Fuel Economy. Available at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy. Accessed: December 2023.

[19] Ibid.

[20] United States Environmental Protection Agency. 2021. Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-passenger-cars-and. Accessed: December 2023.

[21] USEPA. 2021. Clean Trucks Plan. https://www.epa.gov/regulations-emissions-vehicles-and-engines/clean-trucks-plan. August. Accessed: December 2023.

fuel-efficient appliances and products. Because driving fuel-efficient vehicles and installing energy-efficient appliances can provide many benefits, such as lower energy bills, increased indoor comfort, and reduced air pollution, businesses are eligible for tax credits for buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are given for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

The Energy Policy Act of 2005 also established the first renewable fuel volume mandate in the United States. The original Renewable Fuel Standard program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012.

The Energy Independence and Security Act of 2007 facilitates the reduction of national energy demand by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014.
- Requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020.
- While superseded by the USEPA and NHTSA actions described above (see section 2.2.1.1 [Energy Policy and Conservation Act]), (i) establishing miles-per-gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of 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."

2.2.1.3 American Recovery and Reinvestment Act

The American Recovery and Reinvestment Act of 2009 was passed in response to the economic crisis of the late 2000s, with the primary purpose of maintaining existing jobs and creating new jobs. Among the secondary objectives of the American Recovery and Reinvestment Act was investment in "green" energy programs, including funding the following through grants, loans, or other mechanisms: private companies developing renewable energy technologies; local and state governments implementing energy efficiency and clean energy programs; research in renewable energy, biofuels, and carbon capture; and development of high efficiency or electric vehicles. [22]

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[22] United States Environmental Protection Agency (EPA). 2009. *Recovery: EPA Gets Involved.* Available at: https://archive.epa.gov/recovery/web/html/. Accessed: December 2023.

2.2.1.4 Intermodal Surface Transportation Efficiency Act

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 promotes the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. The Intermodal Surface Transportation Efficiency Act contains factors that metropolitan planning organizations (MPO), such as the Metropolitan Transportation Commission (MTC), are to address in developing transportation plans and programs, including some energy-related factors. To meet the ISTEA requirements, MPOs have adopted explicit policies defining the social, economic, energy, and environmental values that guide transportation decisions in their respective metropolitan areas. The planning process for specific projects would then address these policies. Another requirement of the ISTEA is to consider the consistency of transportation planning with federal, state, and local energy goals. Through this requirement, energy consumption is expected to be a decision criterion, along with cost and other values to determine the best transportation solution.

2.2.1.5 Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century ("TEA-21") was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

2.2.2 State Programs

2.2.2.1 AB 32, SB 32, and AB 1279 (State-wide GHG Reductions with Energy Co-Benefits)

The California Global Warming Solutions Act of 2006 (AB 32) was signed into law in September 2006.[23] The law instructed CARB to develop and enforce regulations for the reporting and verification of state-wide GHG emissions. The bulk of GHG emissions in California are carbon dioxide molecules that result from fossil fuel consumption. Therefore, a reduction in GHG emissions typically translates into reduced fuel and increased energy efficiency. The bill directed CARB to set a state-wide GHG emission limit based on 1990 levels, to be achieved by 2020.

AB 32 requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. In December 2008, CARB adopted its Climate Change Scoping Plan: A Framework for Change (Scoping Plan), which included the state's strategies for achieving AB 32's reduction targets. These strategies are implemented with additional rules and regulations of relevance to energy analysis, such as the Advanced Clean Cars Program, the low carbon fuel standard (LCFS),

[23] CARB. Assembly Bill 32 Overview. 2006. Available at: http://www.arb.ca.gov/cc/ab32/ab32.htm. Accessed: December 2023.

Title 24 building efficiency standards, and the Renewables Portfolio Standard (RPS). These are discussed further below.

Enacted in 2016, Senate Bill (SB) 32 (Pavley, 2016) codifies a 2030 GHG emissions reduction goal and requires CARB to ensure that state-wide GHG emissions are reduced to 40 percent below 1990 levels by 2030. Similar to AB 32, a reduction in GHG emissions typically corresponds with a reduction in energy usage as the bulk of GHGs result from the combustion of fossil fuel.

In November 2017, CARB published California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), which identifies CARB's strategy for achieving the State's 2030 GHG target as established in SB 32.[24] The strategy includes continuation of the Cap-and-Trade Program through 2030, a Mobile Source Strategy that includes strategies targeted to increase ZEV fleet penetration, and a more stringent target for the Low Carbon Fuel Standard by 2030. The Plan also incorporates approaches to cutting short-lived climate pollutants (SLCPs), acknowledges the need for reducing emissions in agriculture, and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon.

Enacted in 2022, AB 1279 declares the policy of the state to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter. Additionally, the bill requires that by 2045, state-wide anthropogenic GHG emissions be reduced to at least 85% below 1990 levels.

2.2.2.2 2022 Scoping Plan Update

In November 2022, CARB approved California's 2022 Scoping Plan for Achieving Carbon Neutrality (Third Update). This update extends the previous Scoping Plans and lays out a path to achieve carbon neutrality no later than 2045, as directed by AB 1279. The previous 2017 Scoping Plan identified a technologically feasible and cost-effective path to achieve the 2030 GHG reduction target by leveraging existing programs such as the Renewables Portfolio Standard, Advanced Clean Cars, Low Carbon Fuel Standard, Short-Lived Climate Pollutant (SLCP) Reduction Strategy, Cap-and-Trade Program, and a Mobile Source Strategy that included strategies targeted to increase ZEV fleet penetration. The 2022 Scoping Plan looks toward the 2045 climate goals and the deeper GHG reductions needed to meet the state's statutory carbon neutrality target specified in AB 1279 and Executive Order (EO) B-55-18. The 2022 Scoping Plan provides a sector-by-sector roadmap for achieving these goals, focusing on technological feasibility, cost-effectiveness and equity. The Plan's Appendix D makes non-binding suggestions that local agencies, such as the City of Suisun, may consider as they identify significance thresholds and mitigation measures for GHG impacts. The 2022 Scoping Plan suggests, but does not mandate, measures related to renewable energy, the low carbon fuel standard, cleaner vehicles and fuels, short-lived climate pollutants, and natural and working lands that could be relevant to the proposed project.

2.2.2.3 2023 Integrated Energy Policy Report

The Draft 2023 Integrated Energy Policy Report (IEPR) provides an assessment of major energy trends and issues for a variety of energy sectors, as well as policy

[24] CARB. 2017. California's 2017 Climate Change Scoping Plan. November. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed: December 2023.

recommendations.[25] Prepared by the California Energy Commission (CEC), this report details the key energy issues facing California and develops potential strategies to address these issues. The Draft 2023 IEPR includes a discussion of electricity resources and demand, accelerating and enhancing the energy grid, and potential use of hydrogen. The assessments and forecasted energy demand within this report will be used by the CEC to develop future energy policies.

2.2.2.4 Title 24 Building Energy Efficiency Standards

The California Green Building Standards Code, as specified in Title 24, Part 11 of the California Code of Regulations, commonly referred to as CalGreen Building Standards (CalGreen), establishes voluntary and mandatory standards to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. The provisions of this code apply to the planning, design, operation, construction, replacement, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout California. Examples of CalGreen provisions include reducing indoor water use, moisture sensing irrigation systems for landscaped areas, construction waste diversion goals, and energy system inspections. CalGreen is updated on a triennial basis.

The Energy Efficiency Standards for Residential and Non-residential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations, were established 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 efficiency technologies and methods for building features such as space-conditioning, water-heating, lighting, and whole envelope. The 2005, 2008, and 2013 updates to the efficiency standards included provisions such as cool roofs on commercial buildings, increased use of skylights, and higher efficiency lighting, heating, ventilation and air conditioning (HVAC), and water-heating systems. Additionally, some standards focused on larger energy-saving concepts such as reducing loads at peak periods and seasons and improving the quality of such energy-saving installations. Past updates to the Title 24 standards have proven very effective in reducing building energy use, with the 2013 update estimated to reduce energy consumption in residential buildings by 25% and energy consumption in commercial buildings by 30%, relative to the 2008 standards.[26] The 2016 updates included additional high efficiency lighting requirements, high performance attic and walls, and higher efficiency water and space heaters. The 2016 standards were expected to reduce residential electricity consumption by 28% and non-residential electricity by 5%.[27] The 2019 standards included requirements for photovoltaic systems for new homes, solar

[25] California Energy Commission. 2023. Draft 2023 Integrated Energy Policy Report. Available at:https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report. Accessed: December 2023.

[26] CEC. 2012. Energy Commission Approves More Efficient Buildings for California's Future. Available at: https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C17.pdf. Accessed: December 2023.

[27] CEC. 2015. 2016 Building Energy Efficiency Standards Adoption Hearing. Available at: https://web.archive.org/web/20190602115405/http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2015-06-10_hearing/2015-06-10_Adoption_Hearing_Presentation.pdf. Accessed: December 2023.

readiness, high efficiency lighting, high performance attics and walls, high efficiency water and space heaters, and high efficiency air filters. The 2019 standards were expected to reduce high-rise residential and non-residential electricity consumption by 10.7% and natural gas consumption by 1%.[28]

The CEC's 2022 Building Energy Efficiency Standards, which became effective January 1, 2023, are the currently applicable version of these standards. The 2022 update aims to expand solar standards, promote on-site energy storage to lower utility costs and strengthen the grid, strengthen ventilation standards to improve indoor air quality, and encourage the use of heat pump technology.[29] Specific to non-residential land uses, the CEC's 2022 standards prescribe requirements for the design and installation of building envelopes, ventilation, space-conditioning and service water-heating systems and equipment.[30] Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

As the Project phasing schedule anticipates build-out as late as 2026 further reductions may be anticipated from future Title 24 code cycles. Thus, this analysis represents a conservative estimate of energy-related emissions.

The California Public Utilities Commission, CEC, and CARB also have a shared, established goal of achieving Zero Net Energy (ZNE) for new construction in California. The key policy timelines include: (1) all new residential construction in California will be ZNE by 2020, and (2) all new commercial construction in California will be ZNE by 2030. The ZNE goal generally means that new buildings must use a combination of improved efficiency and renewable energy generation to meet 100 percent of their annual energy need, as specifically defined by the CEC:

> "A ZNE Code Building is one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building, at the level of a single 'project' seeking development entitlements and building code permits, measured using the [CEC]'s Time Dependent Valuation (TDV) metric. A ZNE Code Building meets an Energy Use Intensity value designated in the Building Energy Efficiency Standards by building type and climate zone that reflect best practices for highly efficient buildings."[31]

2.2.2.5 Renewables Portfolio Standard

SB 1078 (2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to obtain at least 20 percent of their energy supply from renewable sources by 2017. SB 107 (2006) changed that target date to 2010. In November 2008, then-Governor Schwarzenegger signed Executive Order S-14-08, which expanded the state's Renewables Portfolio Standard to 33 percent renewable power by 2020. In April 2011, then-Governor Brown signed SB 2X, which legislated the prior Executive Order

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[28] CEC. 2018. 2019 Title 24 Impact Analysis. June. Available at: https://web.archive.org/web/20190601203553/https://www.energy.ca.gov/title24/2019standards/post_adoption/documents/2019_Impact_Analysis_Final_Report_2018-06-29.pdf. Accessed: December 2023.

[29] CEC. 2022. 2022 Building Energy Efficiency Standards. Available at: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency. Accessed: December 2023.

[30] CEC. 2022. 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: https://www.energy.ca.gov/sites/default/files/2022-12/CEC-400-2022-010_CMF.pdf. Accessed: January 2024.

[31] CEC, 2015 Integrated Energy Policy Report (2015), p. 41.

S-14-08 renewable standard. And SB 100 (2018) accelerated and extended again the RPS – requiring achievement of a 50 percent RPS by 2026 and a 60 percent RPS by 2030. SB 100 also established a state policy goal to achieve 100 percent carbon-free electricity by 2045.

In 2015, the Clean Energy and Pollution Reduction Act (SB 350) increased California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This bill requires the State Energy Resources Conservation and Development Commission to establish annual targets for state-wide energy efficiency savings and demand reduction that will achieve a cumulative doubling of state-wide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030.

SB 100 (September 2018) further accelerated and extended the RPS by requiring California electricity utility providers to supply all in-state end users with electricity sourced from renewable or carbon-free sources by 2045. Specifically, SB 100 accelerates previously established RPS goals and requires that the program achieve 50 percent of electricity sourced from renewables by December 31, 2026, 60 percent by December 31, 2030, and 100 percent of electricity sourced from carbon-free sources by December 31, 2045. For clarification, renewable sources, as described herein, includes all renewable sources (e.g., solar, small hydro, wind) but notably omits large-scale hydroelectric and nuclear electricity generation; carbon-free sources include all renewable sources as well as large-scale hydroelectric and nuclear electricity generation.

In March 2021, CEC, the California Public Utilities Commission (CPUC) and CARB released a joint-agency report evaluating the current feasibility of achieving the energy resource and GHG reductions goals of SB 100. The report finds that SB 100 is technically feasible when analyzed under scenarios of varying timelines, advancements in energy generation technology, and energy source portfolios. Under the SB 100 Core Scenario, it is anticipated that California will need to triple its current electricity power capacity.[32]

In September 2022, SB 1020 revised the standards from SB 100, requiring the following percentage of retail sales of electricity to California end-use customers to come from eligible renewable energy resources and zero-carbon resources: 90% by December 31, 2035, 95% by December 31, 2040, and 100% by December 31, 2045.

2.2.2.6 Mobile Source Regulations

SB 743 (Transportation Analysis under CEQA)

Public Resources Code Section 21099(c)(1), as codified through enactment of SB 743, was enacted with the intent to change the focus of transportation analyses conducted under the California Environmental Quality Act (CEQA). SB 743 reflects a legislative policy to balance the needs of congestion management with state-wide goals related to infill development, promotion of public health through active transportation, and reduction of GHG emissions. As finalized in December 2018, a new State CEQA Guidelines Section 15064.3, adopted in furtherance of SB 743, establishes vehicle miles traveled (VMT), in lieu of level of service, as the new metric for transportation analysis. Implementation of Section 15064.3 is anticipated to improve the efficiency of transportation fuels consumption.

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[32] CEC. 2021. 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment. March 15. Available at: https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity. Accessed: December 2023.

SB 375 (Land Use Planning)

SB 375 (Steinberg, 2008), the Sustainable Communities and Climate Protection Act, coordinates land use planning, regional transportation plans, and funding priorities to reduce GHG emissions from passenger vehicles through better-integrated regional transportation, land use, and housing planning that provides easier access to jobs, services, public transit, and active transportation options. SB 375 specifically requires the Metropolitan Planning Organization relevant to the Project area (here, the Metropolitan Transportation Commission/Association of Bay Area Governments [MTC/ABAG]) to include a Sustainable Communities Strategy (SCS) in its Regional Transportation Plan (RTP) that, if implemented, will achieve GHG emission reduction targets set by CARB by reducing vehicle miles traveled from light-duty vehicles through the development of more compact, complete, and efficient communities.

For the area under MTC/ABAG's jurisdiction, including the Project site, CARB originally adopted regional targets for reduction of mobile source-related GHG emissions of 7 percent for 2020 and 15 percent for 2035. The targets are expressed as a percentage change in per capita passenger vehicle GHG emissions relative to 2005 emissions levels. These original targets were in place through September 30, 2018. In March 2018, CARB approved updated regional targets of 10% for 2020 and 19% for 2035 for MTC/ABAG, which apply to future RTP/SCS planning cycles beginning October 1, 2018.[33]

California's Advanced Clean Cars

In 2012, CARB approved the Advanced Clean Cars (ACC I) program, a new emissions-control program for non-commercial passenger vehicles and light-duty truck for model years 2015-2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZEVs. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions. In 2022, the Advanced Clean Cars II (ACC II) regulations were adopted, imposing new low emission vehicles (LEV) and ZEV standards for model years 2026-2035 with the goal that by 2035 all new passenger cars, trucks, and SUVs sold in California with be zero-emissions.[34] ACC II integrates stricter emission standards for gasoline vehicles for gasoline vehicles, and require higher penetration rate of electric and hydrogen fuel cell vehicles. The annual carbon dioxide emission reduction benefits are estimated to be 65 million metric tons in 2040, combined with other air quality and community co-benefits.[35]

Commercial Motor Vehicle Idling Regulation

In July 2004, CARB initially adopted an Airborne Toxic Control Measure (ATCM) to limit idling of diesel-fueled commercial motor vehicles (idling ATCM) and subsequently amended it in October 2005, October 2009, and December 2013. This ATCM is set forth in Title 13, California Code of Regulations, Section 2485, and requires, among other things, that drivers of diesel-fueled commercial motor vehicles with gross vehicle weight ratings greater than 10,000 pounds, including buses and sleeper berth equipped trucks, not idle the vehicle's

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[33] CARB. 2022. Regional Plan Targets. Available at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets. Accessed: December 2023.

[34] CARB. Advanced Clean Cars II Program. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii. Accessed: November 2023.

[35] CARB. 2022. Advanced Clean Cars II, Proposed Amendments to the Low Emissions, Zero Emissions, and Associated Vehicle Regulations, Standardized Regulatory Impact Assessment (SRIA). Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appc1.pdf. Accessed November 2023.

primary diesel engine longer than five minutes at any location. This anti-idling regulation helps to reduce fuel consumption by reducing engine usage. The ATCM also requires owners and motor carriers that own or dispatch these vehicles to ensure compliance with the ATCM requirements. The regulation consists of new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck's main engine. Under the new engine requirements, 2008 and newer model year heavy-duty diesel engines need to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling or optionally meet a stringent oxides of nitrogen idling emission standard.

In-Use Off-Road Diesel-Fueled Fleets Regulation

In May 2008, CARB approved the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation), which was later amended in December 2009, July 2010, and December 2011. The overall purpose of the Off-Road Regulation is to reduce emissions of oxides of nitrogen (NO_X) and particulate matter (PM) from off-road diesel vehicles operating within California. The regulation applies to all self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles. The Off Road Regulation:

- Imposes limits on idling (i.e., fleets must limit unnecessary idling to 5 minutes), requires a written idling policy, and requires a disclosure when selling vehicles;
- Requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System, DOORS) and labeled;
- Restricts the adding of older vehicles into fleets starting on January 1, 2014; and
- Requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (VDECS) (i.e., exhaust retrofits).

The anti-idling component of this Off-Road Regulation helps to reduce fuel consumption by reducing engine usage.

Tractor-Trailer Greenhouse Gas Regulation

CARB's Tractor-Trailer Greenhouse Gas regulation reduces the energy consumption of large trucks. CARB developed this regulation to make heavy-duty tractors more fuel-efficient. Fuel efficiency is improved by requiring the use of aerodynamic tractors and trailers that are also equipped with low rolling resistance tires. The tractors and trailers subject to this regulation must either use EPA's SmartWay (SmartWay) certified tractors and trailers or retrofit their existing fleet with SmartWay verified technologies. The SmartWay certification process is part of their broader voluntary program called the SmartWay Transport Partnership Program. The regulation applies primarily to owners of 53-foot or longer box-type trailers, and owners of the heavy-duty tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low rolling resistance tires. All owners regardless of where their vehicle is registered must comply with the regulation when they operate their affected vehicles on California highways. Besides the owners of these vehicles, drivers, motor carriers, California-based brokers and California-based shippers that operate or use them also share in the responsibility for compliance with the regulation.

Zero Emission Vehicles

ZEVs include hydrogen fuel cell electric vehicles and plug-in electric vehicles, such as battery electric vehicles and plug-in hybrid electric vehicles.

In 2012, Governor Brown issued EO B-16-2012, which calls for the increased penetration of ZEVs into California's vehicle fleet in order to help California achieve a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of that state-wide target for the transportation sector, the EO also calls upon CARB, the CEC and the California Public Utilities Commission to establish benchmarks that will: (1) allow over 1.5 million ZEVs to be on California roadways by 2025, and (2) provide the State's residents with easy access to ZEV infrastructure. EO B-16-2012 specifically directed California to "encourage the development and success of ZEVs to protect the environment, stimulate economic growth, and improve the quality of life in the State."[36]

In 2018, Governor Brown also issued EO B-48-18, which launched an eight-year initiative to accelerate the sales of ZEVs through a mix of rebate programs and infrastructure improvements. The EO also sets a new target of five million ZEVs in California by 2030 and includes funding for multiple state agencies to increase electric vehicle (EV) charging infrastructure and provide purchase rebates/incentives.

In furtherance of the State's ZEV penetration goals, in February 2013, the Governor's Interagency Working Group on Zero-emission Vehicles issued the *2013 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California* roadways *by 2025*.[37] The 2013 ZEV Action Plan identifies four broad goals for State government to advance ZEVs: 1) Complete needed infrastructure and planning; 2) Expand consumer awareness and demand; 3) Transform fleets; and 4) Grow jobs and investment in the private sector. As part of these goals, some highlighted strategies and actions include: i) supporting ZEV infrastructure planning and investment by private entities; ii) enabling universal access to ZEV infrastructure for California drivers; iii) reducing up-front purchase costs for ZEVs; iv) promoting consumer awareness of ZEVs; and v) helping to expand ZEVs in bus fleets. The Action Plan discusses the challenges of ZEV expansion, which include the need to enable electric vehicle chargers in homes, increase consumer awareness, address up-front costs and operational limitations, and address that ZEVs are not commercially available for all categories of vehicles.

In October 2016, the Governor's Interagency Working Group on Zero-emission Vehicles issued the *2016 ZEV Action Plan: A roadmap toward 1.5 million zero-emission vehicles on California* roadways *by 2025*.[38] This report provides an update on progress toward achieving the 2013 goals and highlights the following four top priorities for the upcoming years: 1) Raise consumer awareness and education about ZEVs; 2) Ensure ZEVs are accessible to a broad range of Californians; 3) Make ZEV technologies commercially viable in targeted applications in the medium-duty, heavy-duty, and freight sectors; and 4) Aid ZEV market growth beyond California. The broad goals to advance ZEV adoption are: i) achieve

[36] Executive Order B-16-2012. Available at: https://www.ca.gov/archive/gov39/2012/03/23/news17472/. Accessed: December 2023.

[37] Governor's Interagency Working Group on Zero-emission Vehicles. 2013. Available at: http://opr.ca.gov/docs/Governors_Office_ZEV_Action_Plan_(02-13).pdf. Accessed: December 2023.

[38] Governor's Interagency Working Group on Zero-emission Vehicles. 2016. Available at: https://www.ca.gov/archive/gov39/wp-content/uploads/2018/01/2016_ZEV_Action_Plan-1.pdf. Accessed: December 2023.

mainstream consumer awareness of ZEV options and benefits; ii) make ZEVs an affordable and attractive option for drivers; iii) ensure convenient charging and fueling infrastructure for greatly expanded use of ZEVs; iv) maximize economic and job opportunities from ZEV technologies; v) bolster ZEV market growth outside of California; and vi) lead by example by integrating ZEVs into State government. The goals and strategies proposed in the 2013 Action Plan will continue to be implemented; however, additional strategies are proposed to help achieve the new goals, including setting targets to increase home charging stations in multiunit dwellings and disadvantaged communities and for public transit and school bus electrification. The 2016 Action Plan describes challenges toward achieving the 2025 goal of 1.5 million ZEVs in California, such as that most consumers are still not aware of the benefits of passenger ZEVs and that over 1,000,000 charge points will be needed at homes, workplaces, and public locations but only 11,000 non-home charge points are installed as stated in the 2016 ZEV Action Plan.

In September 2018, the Governor's Interagency Working Group on Zero-Emission Vehicles published the 2018 ZEV Action Plan Priorities Update.[39] This update is the result of Governor Brown's directive to update the 2016 Zero-Emission Vehicle Action Plan to help expand private investment in ZEV infrastructure, particularly in low income and disadvantaged communities. The 2018 Priorities Update serves three fundamental purposes: 1) Provide direction to state agencies on the most important actions to be executed in 2018 to enable progress toward the 2025 targets and 2030 Vision; 2) Give stakeholders transparency into the actions state agencies plan to take (or are taking) this year to further the ZEV market; and 3) Create a platform for stakeholder engagement, feedback, and collaboration. As of July 2018, over 410,000 ZEVs have been sold in California, which is approximately 150,000 ZEVs since the publication of the 2016 Action Plan in October 2016.

In July 2020, CARB prepared an Assessment of CARB's Zero-Emission Vehicles Programs Per Senate Bill 498. In this report, CARB staff reviews its programs that affect the adoption of light, medium, and heavy-duty ZEVs, including identifying each program's goals and status in meeting those goals, performing a cost-benefit analysis where data are available, and comparing CARB's ZEV programs with those of other jurisdictions. Additionally, pursuant to SB 498, CARB provides policy recommendations for increasing the use of ZEVs in the State, as well as recommendations for vehicle fleet operators to increase the use of ZEVs.[40]

The California Zero-Emission Vehicle Market Development Strategy was published in February 2021.[41] This strategy was prepared to meet the targets identified by Governor Newsom in Executive Order N-79-20, which include the following ZEV targets for California:

- 100% of in-state sales of new passenger cars and light-duty trucks will be zero-emission by 2035;

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[39] Governor's Interagency Working Group on Zero-emission Vehicles. 2018. Available at: https://static.business.ca.gov/wp-content/uploads/2019/12/2018-ZEV-Action-Plan-Priorities-Update.pdf. Accessed: December 2023.

[40] CARB. 2020. Assessment of CARB's Zero-Emission Vehicles Programs Per Senate Bill 498. Available at: https://ww2.arb.ca.gov/sites/default/files/2019-12/SB%20498%20Report%20Draft%20121719.pdf. Accessed: December 2023.

[41] CARB. 2021. California Zero-Emission Vehicle Market Development Strategy. Available at: https://static.business.ca.gov/wp-content/uploads/2021/02/ZEV_Strategy_Feb2021.pdf. Accessed: December 2023.

- 100% zero-emission medium- and heavy-duty vehicles in the state by 2045 where feasible and by 2035 for drayage trucks; and
- 100% zero-emission off-road vehicles and equipment operations by 2035, where feasible.

A document prioritizing near-term actions for the next year was prepared in August 2021 called the ZEV Pillar Priorities.[42] This annual implementation document identifies the near-term actions to create market opportunity, remove barriers, and further collective understanding.

In June 2020, CARB approved the Advanced Clean Trucks regulation, which has requirements for manufacturer ZEV sales and a one-time reporting requirement for large entities and fleets.[43] The Advanced Clean Truck Regulation is part of a holistic approach to accelerate a large-scale transition of zero-emission medium- and heavy-duty vehicles from Class 2b to Class 8. Manufacturers who certify Class 2b-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% of Class 2b – 3 truck sales, 75% of Class 4 – 8 straight truck sales, and 40% of truck tractor sales. Large employers, including retailers, manufacturers, brokers, and others, are required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, are required to report about their existing fleet operations. This information helps to identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

California is incentivizing the purchase of ZEVs through implementation of the Clean Vehicle Rebate Project (CVRP), which is administered by a non-profit organization (The Center for Sustainable Energy) for CARB and currently subsidizes the purchase of passenger near-zero and ZEVs as follows:

- Hydrogen Fuel Cell Electric Vehicles: $5,000;
- Battery Electric Vehicles: $2,500;
- Plug-In Hybrid Electric Vehicles: $1,500; and
- Neighborhood Electric Vehicles and Zero Emission Motorcycles: $900.

In March 2017, CARB received Volkswagen's (VW) first 30-month ZEV Investment Plan (Plan).[44] This Plan is required by California's partial settlement with VW resulting from VW's use of illegal devices in its 2.0-liter (2.0L) diesel cars sold in the State from model years 2009 to 2015. The Plan describes how VW is proposing to spend the first $200 million in California on ZEV charging infrastructure (including the development and maintenance of ZEV charging stations), public awareness, increasing ZEV access, and a green city

[42] CARB. 2021. ZEV Pillar Priorities. Available at: https://static.business.ca.gov/wp-content/uploads/2021/08/ZEVPillarPriority.pdf. Accessed: December 2023.

[43] CARB. 2020. Advanced Clean Trucks. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks. Accessed: December 2023.

[44] VOLKSWAGEN, Group of America. 2017. California ZEV Investment Plan: Cycle 1, March 8, 2017. Available at: https://www.electrifyamerica.com/assets/pdf/California%20ZEV%20Investment%20Plan%20Cycle%201.3bc672a3.pdf. Accessed: December 2023.

demonstration. In June 2017, Electrify America (a subsidiary of VW) provided CARB with additional information on the Plan.[45] CARB approved the first of the four plans in July 2017.[46]

In its 2014 First Update, CARB recognized that the light-duty vehicle fleet "will need to become largely electrified by 2050 in order to meet California's emission reduction goals."[47] Accordingly, CARB's ACC program – summarized above – requires about 15 percent of new cars sold in California in 2025 to be a plug-in hybrid, battery electric or fuel cell vehicle.[48]

Other state-wide and regional initiatives that spur ZEV uptake include the following:

- CARB currently subsidizes the purchase of passenger near-zero and zero emission vehicles and provides access to high-occupancy vehicle (HOV) lanes to ZEV drivers.
- The VW settlement will result in $800 million in ZEV projects in California over the next ten years, with a focus on increasing public awareness and infrastructure in the first funding cycle.[49]
- The CalGreen standards require new residential and non-residential construction to be pre-wired to facilitate the future installation and use of electric vehicle chargers (see Section 4.106.4 and Section 5.106.5.3 of 2016 CalGreen standards for the residential and nonresidential pre-wiring requirements, respectively).

In January 2017, three of California's largest utilities submitted proposals to the California Public Utilities Commission (CPUC) to electrify the State's transportation sector through more than $1 billion in investments:

- Southern California Edison (SCE) filed an application to expand electric transportation in its service area. Some of SCE's proposals include monetary rewards to rideshare drivers who use an electric vehicle, additional fast charge infrastructure at targeted locations within the region, and rates that are designed to incentivize electric vehicle adoption.[50]
- Pacific Gas and Electric (PG&E) submitted an application that aims to expand the electrification of medium- and heavy-duty vehicle fleets, expand fast-charging stations that can refuel EVs in 20-30 minutes, and explore new uses for vehicle electrification.[51]

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[45] Electrify America. 2017. Supplement to the California ZEV Investment Plan, Cycle 1, June 29, 2017. Available at: https://www.electrifyamerica.com/assets/pdf/Cycle%201%20CA%20ZEV%20Invest%20Plan%20Supplement.a92e7705.pdf. Accessed: December 2023.

[46] CARB, 2017. CARB Approves $200 Million VW Zero-Emission Vehicle Investment in California, July, 27. Available at: https://ww2.arb.ca.gov/news/carb-approves-200-million-vw-zero-emission-vehicle-investment-california. Accessed: December 2023.

[47] CARB, First Update to the Climate Change Scoping Plan: Building on the Framework (May 2014), p. 48.

[48] Id. at p. 47.

[49] CARB, Volkswagen Settlement – California ZEV Investments webpage, available at: https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/vw-zevinvest.htm. Accessed: December 2023.

[50] SCE, Application of Southern California Edison Company (U 338-E) for Approval of Its 2017 Transportation Electrification Proposals (January 20, 2017).

[51] PG&E, In the Matter of the Application of Pacific Gas and Electric Company for Approval of its Senate Bill 350 Transportation Electrification Program (January 20, 2017).

- San Diego Gas & Electric (SDG&E) submitted an application to install tens of thousands of charging stations in its service area to boost the transition to ZEVs, trucks, shuttles, and delivery fleets.[52]

On September 23, 2020, California Governor Gavin Newsom issued Executive Order N-79-20, which entails the following actions:

- All new passenger vehicles sold in California be zero-emission by 2035
- All medium- and heavy-duty vehicles be zero-emission where feasible by 2045
- All off-road vehicles and equipment be zero-emission where feasible by 2035

Governor Newsom ordered extensive interagency efforts to support the Executive Order, including evaluations of technological feasibility and cost-effectiveness, expansion of EV charging options and affordable fueling, as well as identification of near-term strategies to increase zero-emission public transportation options.

The Executive Order was generally aimed at transitioning away from fossil fuel dependence in the State, with emphasis on transportation initiatives. However, Governor Newsom addressed efforts to repurpose oil production facilities and extraction sites while continuing the State's existing goals to reduce the carbon intensity of fuels.[53]

Airborne Toxic Control Measure: Transport Refrigeration Unit

This airborne toxic control measure (ATCM) applies to transport refrigeration units (TRUs), which are commonly found on various transported containers, including truck vans, semi-truck trailers, shipping containers and railcars. TRUs are temperature control systems powered by small (typically 9 to 36 horsepower) diesel internal combustion engines. Despite their small individual size, TRUs are often active in dense congregations around distribution centers, truck stops, and other facilities, resulting in a significantly greater combined loading. This ATCM focused on the reduction of diesel particulate emissions as a toxic in order to improve air quality around these centers. Additionally, transitioning diesel TRUs to zero-emissions technologies is a priority because of Executive Order N-79-20, which set a goal of 100 percent zero-emission off-road vehicles and equipment in California by 2035.

2.2.3 Local Programs

2.2.3.1 Solano County Climate Action Plan

In 2011, Solano County created a countywide Climate Action Plan to address climate change locally and reduce greenhouse gas emissions within the county. The plan proposes 31 measures and 94 implementing actions that can be taken to reduce countywide emissions and contribution to global climate change. California cities and counties are encouraged and incentivized by the State to adopt climate action plans. Solano County's 2008 General Plan required the development of this Climate Action Plan along with a Sea Level Rise Strategic Program. Because the Project site is in unincorporated Solano County, this Climate Action Plan would apply to the Project site if it were developed under a scenario in which the site is

[52] SDG&E, Application of San Diego Gas & Electric Company (U902E) for Approval of SB 350 Transportation Electrification Proposals (January 20, 2017).

[53] State of California. 2020. Executive Order N-79-20. Available at: https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf. Accessed: December 2023.

annexed into Suisun City. If the site is annexed, the County Climate Action Plan would no longer apply.[54]

2.2.3.2 Suisun City 2035 General Plan

The City of Suisun City General Plan summarizes and plans for potential environmental impacts in its jurisdiction.[55] The General Plan Environmental Impact Report (EIR) provides possible mitigation strategies, and the regulatory structures that exist in concert with the General Plan. The plan identifies conversion of important farmland to non-agricultural use, increased demand for water, local mobile source carbon monoxide emissions, loss and degradation of habitat, and increased energy demand as key issues that will shape the city's growth. In addition, the General Plan notes strategies that can be employed to minimize these impacts, such as preserving and enhancing Suisun City's Historic Downtown, protecting open spaces and farmland, complying with existing air, water, and environmental regulations, and undertaking strategic land use change.

[54] County of Solano. 2011. Climate Action Plan. Available at: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080. Accessed: December 2023.

[55] City of Suisun City 2035 General Plan. Available at: https://www.suisun.com/Departments/Development-Services/Planning/General-Plan. Accessed: December 2023.

3. SIGNIFICANCE THRESHOLDS

The analysis provided in this report evaluates the significance of the Project's energy by reference to the following questions from Section VI, Energy, of Appendix G of the CEQA Guidelines:

Threshold 1. Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

Threshold 2. Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

While no quantitative thresholds related to energy are included in the CEQA Guidelines, Part I of Appendix F of the CEQA Guidelines states as follows:

"The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

1. decreasing overall per capita energy consumption,
2. decreasing reliance on fossil fuels such as coal, natural gas and oil, and
3. increasing reliance on renewable energy resources."

Appendix F of the CEQA Guidelines states that an Environmental Impact Report (EIR) should include a discussion of the potential energy impacts of a project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

For purposes of this analysis, impacts to energy resources will be considered to be significant if the project would result in the wasteful, inefficient or unnecessary consumption of fuel or energy, and conversely if the project would not incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation or other project features.

To determine whether a project would result in the wasteful, inefficient or unnecessary consumption of fuel or energy, and conversely whether the project would fail to incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation or other project features, Appendix F of the CEQA Guidelines identifies six categories of potential energy-related environmental impacts:

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate the energy intensiveness of materials may be discussed.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
3. The effects of the project on peak and base period demands for electricity and other forms of energy.
4. The degree to which the project complies with existing energy standards.
5. The effects of the project on energy resources.
6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

This report, relative to Threshold 1, assesses the Project's electricity, natural gas, and fossil fuel consumption during construction and operation by way of the six questions above. As part of this analysis, the report analyses whether the Project would incorporate feasible renewable energy or energy efficiency measures into building design, equipment use, transportation and other project features. This report, relative to Threshold 2, evaluates the Project for consistency with applicable State and local plans related to renewable energy and energy efficiency.

4. METHODOLOGY FOR ESTIMATING ENERGY CONSUMPTION

This section describes the methodology that Ramboll used to develop the regulatory compliance-based energy projections associated with the Project, which include one-time demand from construction and annual operational demand. This section also identifies the results of the energy projections for the Project based on compliance with applicable regulatory requirements.

Additional information regarding methodology can be found in the Greenhouse Gas Emissions Technical Report[56] and Air Quality Technical Report[57] for the Project; only the methodology specific to energy usage is discussed in this report. In addition, the Air Quality Technical Report presents a list of air quality mitigation measures, some of which would also affect energy consumption. To account for the differences in energy consumption with and without the implementation of these applicable air quality mitigation measures, the effects of these air quality mitigation measures are quantified and discussed in the relevant sections. The air quality mitigation measures that are excluded from this report are expected to have no impacts or negligible impacts on the Project's energy consumption. Additional details on the air quality mitigation measures are included in the Air Quality Technical Report.

4.1 Energy Used During Project Construction

Construction of the Project requires the use of transportation fuel, including gasoline and diesel use in construction equipment, material transport via hauling trucks, delivery via vendor trucks, and construction worker vehicles. Project construction is planned to begin in 2025, with full build-out expected in 2026. The applicant for the Project has informed the City that the Project is voluntarily foregoing the use of natural gas. For this reason, natural gas related to construction of the Project is not discussed further. Electricity would be consumed by some of the construction equipment. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, while VMT associated with the transportation of construction materials and construction worker commutes would also result in fuel consumption. Heavy-duty construction equipment associated with construction activities would primarily use diesel fuel. Construction workers would travel to and from the Project site throughout the duration of construction; this analysis assumed that construction workers would primarily use gasoline-powered passenger vehicles.

Heavy-duty construction equipment of various types would be used during each phase of construction. CalEEMod methodologies were used to estimate construction equipment usage. Energy use calculations associated with off-road construction equipment are based on the construction schedule, type and quantity of equipment and hours of operation for each piece of equipment based on Project-specific information provided by the Project Applicant. All off-road construction equipment is diesel-fueled based on Project-specific information except for the electric signal boards. Fuel use from off-road construction equipment is estimated using methodology consistent with EPA AP-42 Section 3.4 for Large Stationary and All Stationary Dual Fuel Engines. The estimated diesel fuel and electricity usage from off-road construction sources are shown in **Table 4-1**.

[56] Ramboll, 2024. Suisun Logistics Center Air Quality Technical Report. March.

[57] Ramboll, 2024. Suisun Logistics Center Greenhouse Gas Emissions Technical Report. March.

Energy consumption from on-road construction vehicles, in the form of fuel use, was calculated based on the number of trips and vehicle miles traveled (VMT) along with fuel efficiency data derived from The California Air Resources Board EMission FACtors model (EMFAC)2021. Fuel efficiency data for on-road construction vehicles was calculated by dividing fuel consumption by the VMT for each fleet, as reported by EMFAC2021. Passenger vehicles for construction workers are assumed to use gasoline. On-road construction vehicles such as vendors and trucks for demolition material, soil, and other material hauling are assumed to use diesel fuel. Construction trips and VMT used to calculate fuel consumption are shown in **Table 4-2**. Estimated fuel usage is also shown in **Table 4-2**.

4.2 Energy Use During Project Operation

Project operations would require long-term consumption of energy in the form of electricity, gasoline, and diesel fuel. The analysis has evaluated two scenarios: a 100% dry storage warehouse and a 100% cold storage warehouse. Unless specified otherwise, energy consumption described below are applicable to both scenarios. Sources of operational energy use include mobile energy use, on-site mobile equipment energy use from yard trucks and forklifts, building energy use, energy use from landscaping equipment, and on-site stationary source energy use. In addition, the 100% cold storage scenario would include energy use from transport refrigeration unit (TRU) operations.

4.2.1 Mobile Energy Use

Fuel usage for Project operations of mobile sources was estimated from on-road VMT by employees commuting to the Project site in passenger cars and truck trips associated with project operations. Fuel usage for Project operations was estimated using an average miles-per-gallon (mpg) obtained from EMFAC2021 for the fleet mix corresponding to the vehicle category and fuel type (gasoline, diesel, or electricity). **Table 4-3** shows detailed vehicle fuel usage estimates for the Project.

4.2.2 TRU Operations (Cold Storage Scenario Only)

For the cold storage scenario, it was assumed that 100% of the truck trips would be equipped with TRUs. The dry storage scenario is not anticipated to include TRU operations.

Fuel usage for Project operations of TRUs was estimated from the on-road VMT of TRUs and on-site TRU idling during loading and unloading. Fuel usage for Project operations was estimated using the fuel consumption rate (gal/hr) obtained from EMFAC2021 for the fleet mix corresponding to the vehicle category (TRUs) and fuel type (diesel). **Table 4-4a** shows detailed TRU fuel usage estimates for the Project, respectively, assuming diesel would be used for all TRU operations. As described in detail in the **Air Quality Technical Report**, Air Quality Mitigation Measure AIR-7 requires the TRUs to be off or plugged in and be powered by electricity while the trucks are loading and unloading at the docks. **Table 4-4b** presents diesel and electricity consumption of TRUs under the mitigation scenario.

4.2.3 On-site Mobile Equipment Operations

Energy consumption from on-site mobile equipment includes the energy consumption from yard trucks and forklifts. Fuel usage for Project operations of on-site mobile equipment was estimated from the VMT of the yard trucks and estimated daily hourly usage of forklifts for Project operations. **Table 4-5** shows detailed on-site mobile equipment fuel usage and electricity consumption estimates for the Project. Under the unmitigated scenario, both yard trucks and forklifts are assumed to be powered by diesel.

As described in detail in the Air Quality Technical Report, Air Quality Mitigation Measure AIR-6 requires all forklifts operating on the Project site to be electric. Energy consumption of electric forklifts was estimated using an electric power consumption rate specified from OFFROAD documentation for advanced clean equipment[58]. **Table 4-5** also presents the increased electricity consumption and reduced diesel consumption with the implementation of Air Quality Mitigation Measure AIR-6.

4.2.4 Building Energy Use

The proposed Project buildings would be all-electric, with no natural gas hook-ups. The default energy consumption from CalEEMod was adjusted to reflect an increase in electricity consumption consistent with the methodology presented in the Sacramento Air Quality Management District (SMAQMD) GHG Thresholds development.[59] Total electricity consumption from building use for the cold storage and dry storage scenario are summarized in **Table 4-6**.

4.2.5 Landscaping Equipment Energy Use

Energy consumption from landscaping equipment use was estimated using default CalEEMod methods for non-residential land uses. In CalEEMod default methodology, the landscaping equipment is assumed to be gasoline-powered. Gasoline consumption of landscaping equipment is summarized in **Table 4-7**.

As described in detail in the Air Quality Technical Report, Air Quality Mitigation Measure AIR-4 requires all landscaping equipment to be electric. With the implementation of Air Quality Mitigation Measure AIR-4, gasoline consumption by landscaping equipment would be replaced with electricity, which was calculated using CalEEMod default usages and kilowatt ratings. The electricity consumption under the mitigated scenario is also summarized in **Table 4-7**.

4.2.6 Stationary Source Energy Use

Diesel fuel usage from diesel combustion resulting from testing, maintenance and emergency use of emergency generators and fire pumps is included in this analysis. Project operation includes 6 emergency generators and 6 fire pumps. Operation for routine maintenance, testing, and emergency operation is conservatively assumed to be 150 hours per year for each existing emergency generator and fire pump assuming 50 hours per year of routine maintenance and testing and 100 hours per year of non-testing and non-maintenance purposes.[60,61] **Table 4-8** provides details on fuel usage estimates from emergency engines for the Project.

[58] SOCMA. Socma 25 Ton compact electric forklift. Available at: https://www.socma-forklift.com/heavy-duty-forklift/12-ton-16-ton-20-ton-25-ton-electric-heavy.html.

[59] Ramboll. 2020. GHG Thresholds for Sacramento County, Section 5.2. Available at: http://www.airquality.org/LandUseTransportation/Documents/SMAQMDGHGThresholds2020-03-04v2.pdf.

[60] CARB. 2023. Airborne Toxic Control Measures for Stationary Compression Ignition Engines. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf.

[61] BAAQMD. 2023. California Air Quality Act Air Quality Guidelines Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en.

5. PROJECT INVENTORY IN CONTEXT

This section assesses the significance of the Project's energy demand for purposes of CEQA. Project impacts – i.e., energy use beyond existing Baseline conditions – are assessed against the thresholds.

5.1 Threshold 1

Would the Project Result in a Potentially Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources, during Project Construction or Operation?

5.1.1 Energy Requirements and Energy Use Efficiencies

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

> *The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate the energy intensiveness of materials may be discussed.*

5.1.1.1 Construction

Construction of the proposed project would result in fuel usage as shown in **Table 5-1**. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies). State-wide and local requirements would also prevent Project construction activities from wasteful, inefficient, and unnecessary consumption of energy. For example, on-site construction equipment is subject to CARB's ATCM to limit idling to five minutes, and on-road heavy trucks used during Project construction are subject to CARB's drayage truck rules that require all trucks to be equipped with 2010 model year or newer engines.

5.1.1.2 Operations

Operation of the Project would result in electricity, gasoline, and diesel fuel usage, as shown in **Table 5-2**. There are no unusual project characteristics that would require consumption that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies).

CEQA Guidelines Section 15126.2(b) states that the energy impact analysis may include considerations, among others, on the project's size, location, orientation, equipment use, and any renewable energy features that could be incorporated. Below, an overview on how the Project would incorporate on-site renewable energy features is provided.

With the implementation of Project features and the mitigation measures described in **Section 4**, the Project would reduce its reliance on fossil fuels and increase its reliance on renewable energy resources. Specifically, the Project would construct all-electric buildings, provide electricity for TRUs idling at the site, and require on-site forklifts and landscaping equipment to be powered by electricity. These project features and mitigation measures would increase the Project's use of electricity provided from the grid by PG&E, 38% of which is sourced from renewable energy sources, 8% of which is sourced from large hydroelectric, and 49% of which is from nuclear power.[62] To accomplish the same functions of the Project (*e.g.,* maintaining TRU temperatures when docking), electrifying the Project's operations would rely more on renewable energy sources than using fossil fuels for the Project's operations.

Title 24 requires non-residential developments to be solar ready and/or install solar photovoltaic system if the developments meet certain requirements, such as land use types and solar access. However, installation of solar photovoltaics systems for this Project may be infeasible because it may create glint and glare hazards for TAFB, which would be then inconsistent with TAFB's Land Use Compatibility Plan. This feasibility determination cannot be reached at the current, relatively early stage of project planning but rather must be deferred until the design stage, at which time the applicant and City of Suisun can conduct modeling pursuant to the Solar Glare Hazard Analysis Tool (SGHAT) model developed by Sandia National Laboratories. Such modeling can ascertain whether solar photovoltaic systems in the project would create glint or glare either in an existing or planned Airport Traffic Control Tower cab at Travis AFB or within or along the final approach path for any existing landing threshold or future landing threshold (including any planned interim phases of the landing thresholds) as shown on the Layout Plan for Travis AFB.[63] The Project would include solar photovoltaic systems as a renewable energy feature if such facilities are determined at the design stage through SGHAT modeling not to create potential hazards for TAFB's operations. No commercial scale solar facilities may be installed, however, without review by the Solano County Airport Land Use Commission pursuant to Section 5.6 of the Travis Air Force Base's Land Use Compatibility Plan. The Project would also incorporate other energy efficiency features with the implementation of the air quality mitigation measures discussed in **Section 4** of this report, such as the electrification of the Project's operations. The Project would achieve energy efficiencies and avoid wasteful use of energy, with or without the incorporation of on-site solar photovoltaic systems.

In addition to the on-site electrification discussed above and potential incorporation of on-site solar energy generation, the Project's energy efficiency related to off-site vehicle travel is discussed. Warehouse land use is an appropriate and efficient use of the site's location. Warehouse developments generally generate substantial amounts of VMT, especially from heavy trucks. However, as discussed in detail in the GHG Technical Report, the Project's GHG impact related to VMT generation is less than significant because the Project is ideally located as a regional distribution center.[64] Furthermore, over the lifetime of the project, the fuel efficiency of the vehicles being used for Project operation is expected to improve. The amount of fuel consumption from vehicular trips to and from the Project site during operation would correspondingly decrease over time as vehicles become more efficient. Numerous regulations have been adopted that encourage, and require, increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles that combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The approach also includes efforts to support and accelerate the numbers of

[62] PG&E, 2022. 2022 Power Content Label. Available at: https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf. Accessed: December 2023.

[63] Environmental Science Associates, 2023. Suisun Logistics Center – Travis Air Force Base Land Use Compatibility Plan Consistency Evaluation. October 18.

[64] Ramboll, 2024. Suisun Logistics Center Greenhouse Gas Emissions Technical Report. March.

plug-in hybrids and ZEVs in California. As such, operation of the Project is expected to use decreasing amounts of fuel over time, due to advances in fuel economy.

5.1.2 Local and Regional Energy Supplies

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

> *The effects of the project on local and regional energy supplies and on requirements for additional capacity.*

5.1.2.1 Construction

The Project's fuel consumption during construction is discussed in **Section 4.1** and presented in **Table 5-1**. Relative to annual fuel production in Northern California region in 2022, Project construction would use less than 0.5% of gasoline and less than 0.4% of diesel fuel in any given year.[65] Therefore, the impact of the Project construction on local and regional fuel supplies would be temporary and minimal and would not require an increase in fuel production capacity. Additionally, the Project is not expected to cause any significant disruptions in local fuel supplies, nor will it require additional capacity to be constructed.

5.1.2.2 Operations

Electricity

The Project's electricity demand during operation is discussed in **Section 4.2** and summarized in **Table 5-2**. For comparison, based on 2022 consumption, operation of the Project under the mitigated cold storage scenario, which requires more electricity than the dry storage scenario, would equate to approximately 2% of the total electricity demand countywide. Therefore, the Project is not expected to have a significant impact on the local utility.

In 2022, total in-state electricity consumption was approximately 290 thousand GWh.[66] The mitigated Project's anticipated approximate electricity usage of 62 thousand MWh/year is approximately 0.02% of the state-wide demand in 2022. Given that the state is growing annually, the anticipated state-wide energy demand for the Project Operational build-out year of 2026 will likely be greater than that in 2020, and thus the project's relative percentage contribution to the state-wide energy demand would be even less.

The Project's electricity use projections also represent a small percentage of regional estimates for PG&E. The CEC estimates that PG&E energy demand will increase to about 126,000 GWh in 2026.[67] The project's anticipated electricity usage of approximately 62 thousand MWh/year is approximately 0.05% of the projected PG&E planning area demand in 2026 under the scenario with the highest electricity consumption.

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[65] California Energy Commission (CEC). 2023. Refinery Inputs and Production. Available: https://www.energy.ca.gov/sites/default/files/2024-01/WFW%20Data_Web_ADA.xlsx. Accessed January 3, 2024.

[66] California Energy Commission. 2022. Electricity consumption by county. Available at: https://ecdms.energy.ca.gov/elecbycounty.aspx Accessed: December 2023.

[67] California Energy Commission. 2018. Electricity and Natural Gas Demand Forecast. Available online at: https://www.energy.ca.gov/publications/2018/california-energy-demand-2018-2030-revised-forecast. Accessed: January 2024.

Overall, the Project's projected electricity demand is consistent with, and a small percentage of, state and regional projections. Therefore, the Project will not require additional generation capacity beyond more general state-wide expansion.

Natural Gas

The Project would not include any natural gas appliances or plumbing. Therefore, the Project is not expected to have an impact on the local natural gas resources.

Fuel Usage

The Project's fuel usage during operation is discussed in **Section 4.2** and presented in **Table 5-2**. As discussed in **Section 4.2.1**, the unmitigated Project gasoline consumption is approximately 540 thousand gallons/year, which is 0.02% of the gasoline produced in 2022 in Northern California.[68] Project operational diesel consumption is approximately 1.4 million gallons/year assuming none of the air quality mitigation measures are implemented, which is 0.08% of the diesel produced in 2022 in Northern California. These percentages would be lower with the implementation of the air quality mitigation measures.

5.1.2.3 Summary

As discussed above, the Project will not have a substantial impact on the local or regional energy supplies or require additional capacity to be constructed. The Project would not create any demand for natural gas because of building electrifications. Similarly, electrification of some of the Project's operations would result a negligible increase in demand for electricity, including those generated by renewable sources, and a decrease in demand for fossil fuels. The Project's fossil fuel usage by vehicle travel is also efficient due to the Project's location, as discussed in the GHG Technical Report. Overall, the Project's impacts related to energy supplies and capacity are less than significant.

5.1.3 Peak and Base Period Demands

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

> *The effects of the project on peak and base period demands for electricity and other forms of energy.*

5.1.3.1 Construction

The Project's base energy consumption compared to regional and state-wide energy consumption is discussed above in **Section 5.1.2**. The electricity demand associated with construction of the Project will be supplied by the existing grid if available. In the event of an emergency or during a power outage, the use of generator sets is permissible, which are comprised of a generator and diesel engine used to produce power off-grid. Therefore, relatively negligible impacts to energy demand are expected as a result of construction activities.

5.1.3.2 Operation

The Project Operation will not have a substantial impact on the peak and base period demands for electricity or other forms of energy. The Project's base energy consumption

[68] California Energy Commission (CEC). 2023. Refinery Inputs and Production. Available: https://www.energy.ca.gov/sites/default/files/2024-01/WFW%20Data_Web_ADA.xlsx. Accessed January 3, 2024.

compared to regional and state-wide energy consumption is discussed above in **Section 5.1.2**. Further details and reasoning on the peak demand are described below.

In 2022, California's peak grid demand was 52,061 MW.[69] In 2021, PG&E reached a maximum demand of 20,118 MW.[70] In comparison, the Project's maximum demand is expected to be approximately 14 MW in 2026.[71] This is a conservative estimate since it was derived by dividing the total electricity energy required for Project Operation by the annual number of working hours. Thus, the Project will have a relatively negligible effect on state-wide and PG&E peak demands.

5.1.3.3 Summary

As described above, the Project will not have a substantial impact on peak and base period demands for electricity and other forms of energy. The Project's impacts are less than significant.

5.1.4 Existing Energy Standards

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

The degree to which the project complies with existing energy standards.

5.1.4.1 Construction

Project construction requires use of on-road trucks for soil hauling and deliveries, and off-road equipment such as excavators, tractors/loaders/backhoes, forklifts, and graders. The construction activities would comply with state requirements designed to minimize idling and associated emissions, which also minimizes use of fuel. Specifically, idling of commercial vehicles and off-road equipment would be limited to five minutes in accordance with the Commercial Motor Vehicle Idling Regulation and the Off-Road Regulation, and the trucks used would be compliant with the requirements of the Tractor-Trailer Greenhouse Gas Regulation.

5.1.4.2 Operation

Electricity

The Project's anticipated electricity use is discussed in **Section 4.2** and summarized in **Table 5-2**. The Project complies with existing energy standards because the proposed buildings will comply with Title 24, and CALGreen. For transportation, the Project meets compliance with electric vehicle charging and parking requirements in the most recent adopted version of CALGreen Tier 2 electric vehicle charging requirements.

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[69] California ISO. 2023. 2022 Statistics. Available online at: https://www.caiso.com/Documents/2022Statistics.pdf. Accessed: January 2024.

[70] California ISO. 2022. 2021-2022 Transmission Plan. Available online at:http://www.caiso.com/Documents/ISOBoardApproved-2021-2022TransmissionPlan.pdf. Accessed: January 2024.

[71] Since the peak energy demand for the Proposed Project was not available, Ramboll used a factor of 2 to estimate the peak demand based on historic CAISO peak-to-average demand ratio. Peak-to-average electricity demand ratio rising in California. https://www.eia.gov/todayinenergy/detail.php?id=15051#tabs_SpotPriceSlider-7. Accessed: January 3, 2024.

Natural Gas

The Project does not anticipate any natural gas use. As discussed above, the Project would exceed the mandatory standards of CALGreen because it will not include any natural gas appliances or plumbing.

Fuel Usage

The Project's anticipated fuel use is discussed in **Section 4.2** and summarized in **Table 5-2**. There are no unusual project characteristics that would require the use of gasoline and diesel that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies).

Vehicle use for the proposed project also has been evaluated pursuant to the Technical Advisory the Governor's Office of Planning and Research published under SB 743, which created a process to change the methods used for transportation impacts analyses under CEQA from focusing on level of service to VMT. (See 14 California Code of Regulations (CCR) § 15064.3.) The Project was evaluated on VMT based on BAAQMD GHG operational thresholds and was deemed less than significant.

5.1.4.3 Summary

As described above, the Project will comply with all applicable energy standards, many of which are growing stronger over time, with the foreseeable result that the project's energy-related GHG emissions will be reduced over time as California's electricity-generating system moves away from natural gas to renewable sources such as solar power and as passenger vehicles and trucks are increasing are powered by electric batteries rather than gasoline and diesel fuel. The Project's impacts are less than significant.

5.1.5 Energy Resources

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

> *The effects of the project on energy resources.*

The Project's energy use is discussed in **Section 4** above, including electricity, natural gas, gasoline, and diesel consumption associated with on-site equipment, mobile operations, and construction activities. The Project's use of energy will not have a substantial effect on state-wide or regional energy resources. Total operational energy use requirements for the Project are summarized in **Table 5-2**. Programs and measures relevant to energy resources are discussed in detail above.

The Project will not significantly impact energy resources and the Project's impacts are less than significant.

5.1.6 Transportation Energy Use

This section addresses the following category of environmental impact described in Appendix F of the CEQA Guidelines:

> *The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.*

Conventional gasoline and diesel vehicles consume gasoline or diesel fuel, whereas EVs consume electricity that can be sourced by fossil fuels or renewables. EVs, including battery-electric vehicles and plug-in hybrid electric vehicles, comprise a growing fraction of the passenger vehicles on the roads in California. EV adoption is expected to increase over the upcoming decades due in part to improvements in battery technology and public initiatives and goals. This increase in EV adoption will decrease the fuel requirements due to transportation.

New state-wide regulations. such as Truck and Bus Rule (Title 13 CCR Section 2025), On-Road Heavy-Duty Vehicle Program (Title 13, CCR Section 1956.8), Pavley Clean Car Standards and the Advanced Clean Cars (ACC) program have been instated which reduce emissions and fuel requirements from trucks and cars.

Gasoline and diesel fuel usage for the Project from mobile sources shown in **Table 4-3** will decrease over time as fleets become more fuel-efficient and switch to more electric vehicles. In addition, diesel fuel usage for TRUs installed on the heavy-duty trucks accessing the Project site are subject to EO N-79-20 and the subsequent rulemaking to transition truck TRUs to zero-emission. Therefore, diesel fuel usage for TRUs will also decrease over time. The VMT-related GHG emissions were evaluated on VMT based on adapted BAAQMD GHG operational thresholds and was deemed less than significant. Because GHG emissions from VMT is a function of fuel usage, this significance determination demonstrates that siting a regional distribution center at the Project site is an efficient use of the site and supports efficient transportation alternatives.

5.1.7 Summary

The Project will not have a substantial impact on the local or regional energy supplies nor require additional capacity to be constructed and the Project will not have a substantial impact on peak and base period demands for electricity and other forms of energy. Additionally, the Project will comply with all applicable energy standards. Based on the above analysis of each of the environmental impact factors identified in CEQA Guidelines Appendix F, the potential for the Project to result in wasteful, inefficient, or unnecessary consumption of fuel or energy, and conversely to fail to incorporate energy efficiency measures into equipment use, transportation or other project features is less than significant.

5.2 Threshold 2

Would the Project Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency?

This analysis evaluates the Project relative to Threshold 2 using a consistency evaluation. Appendix G of CEQA Guidelines requires a Project to analyze whether it would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing environmental impacts related to energy. Several State and local plans General Plan include energy conservation and energy efficiency strategies intended to enable the State and the City to achieve GHG reduction and energy conservation goals. The Project is evaluated for consistency with the following plans, polices, and regulations specific to energy:

- Renewables Portfolio Standard
- California Code of Regulations Title 24, Part 6: Energy Efficiency Standards
- California Code of Regulations Title 24, Part 11: California Green Building Standards Code

- 2023 Integrated Energy Policy Report
- County of Solano Climate Action Plan City of Suisun City General Plan

Table 5-3 summarizes the Project consistency with each plan, policy, and regulation. Note that since the Project is seeking annexation of the site to the City of Suisun and is premised on a successful annexation, the County of Solano Climate Action Plan would not apply. Nevertheless, as shown in **Table 5-3**, the Project would be consistent with that county plan. The Project would not conflict with or obstruct any State or local plan for renewable energy or energy efficiency; this impact is less than significant.

TABLES

Table 4-1
Construction Off-road Equipment Energy Use
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Equipment Type[1]	Fuel[2]	Quantity[1]	Horsepower[1]	Hours/Day[1]	Number of Equipment Days	Gallons of Diesel[3]	Electricity Usage (MWh)
Warehouse Construction	Site Preparation	Rubber Tired Dozers	Diesel	8	367	8	12	5,759	--
		Tractors/Loaders/Backhoes	Diesel	10	84	8	12	1,524	--
Petersen Road Widening	Linear, Grubbing & Land Clearing	Signal Boards	Electric	1	6	8	3	--	0.088
		Crawler Tractors	Diesel	1	87	8	3	46	--
		Excavators	Diesel	2	36	8	3	34	--
	Linear, Grading & Excavation	Excavators	Diesel	3	36	8	14	235	--
		Crawler Tractors	Diesel	1	87	8	14	214	--
		Graders	Diesel	2	148	8	14	694	--
		Rollers	Diesel	2	36	8	14	157	--
		Scrapers	Diesel	2	423	8	14	2,323	--
		Rubber Tired Loaders	Diesel	1	150	8	14	309	--
		Signal Boards	Electric	1	6	8	14	--	0.41
		Tractors/Loaders/Backhoes	Diesel	4	84	8	14	711	--
	Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	3	84	8	9	343	--
		Signal Boards	Electric	1	6	8	9	--	0.26
		Scrapers	Diesel	1	423	8	9	747	--
		Rough Terrain Forklifts	Diesel	1	96	8	9	141	--
		Graders	Diesel	1	148	8	9	223	--
		Plate Compactors	Diesel	1	8	8	9	13	--
		Pumps	Diesel	1	11	8	9	30	--
		Air Compressors	Diesel	3	37	8	9	196	--
		Generator Sets	Diesel	1	14	8	9	38	--
	Linear, Paving	Rollers	Diesel	2	36	8	5	56	--
		Paving Equipment	Diesel	1	89	8	5	65	--
		Pavers	Diesel	1	81	8	5	70	--
		Tractors/Loaders/Backhoes	Diesel	3	85	8	5	193	--
		Signal Boards	Electric	1	6	8	5	--	0.15
Warehouse Construction	Grading	Excavators	Diesel	5	36	8	31	867	--
		Graders	Diesel	3	148	8	31	2,306	--
		Rubber Tired Dozers	Diesel	3	367	8	31	5,579	--
		Scrapers	Diesel	5	423	8	31	12,861	--
		Tractors/Loaders/Backhoes	Diesel	5	84	8	31	1,969	--
	Building Construction	Cranes	Diesel	3	367	7	305	34,823	--
		Forklifts	Diesel	8	82	8	305	16,353	--
		Generator Sets	Diesel	3	14	8	305	3,874	--
		Tractors/Loaders/Backhoes	Diesel	8	84	7	305	27,118	--
		Welders	Diesel	3	46	8	305	7,740	--
	Paving	Pavers	Diesel	5	81	8	23	1,599	--
		Paving Equipment	Diesel	5	89	8	23	1,506	--
		Rollers	Diesel	5	36	8	23	643	--
	Architectural Coating	Air Compressors	Diesel	3	37	8	23	501	--

Notes:

[1] Equipment lists were based on Project-specific estimates. All equipment were conservatively assumed to operate at all times for the duration of use.

[2] All equipment is conservatively assumed to be diesel-fueled except for signal boards.

[3] Off-road equipment diesel fuel usage was calculated using a fuel usage rate of 0.051 gallons of diesel per horsepower (hp)-hour, consistent with diesel conversion factors given in USEPA AP-42 Table 3.4.1.

Abbreviations:

CalEEMod - CALifornia Emissions Estimator MODel
MWh - megawatt-hour

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/

RAMBOLL

Table 4-2
Estimated Energy Consumption by On-Road Construction Vehicles
Suisun Logistics Center
Suisun, California

Construction Phase	Construction Subphase	Year	Construction Days	Worker Trip Rates[1] (one-way trips/day)	Vendor Trip Rates[1] (one-way trips/day)	Hauling Trip Number[2] (one-way trips/phase)	Annual VMT			Gallons of Fuel Consumption		
							Worker (miles)	Vendor (miles)	Hauling (miles)	Worker (Gasoline)	Vendor (Diesel)	Hauling (Diesel)
Warehouse Construction	Site Preparation	2025	12	45	0	0	6,318	0	0	168,732	0	0
	Grading	2025	31	83	1.3	6,625	30,245	336	132,500	807,728	2,464	812,167
	Building Construction	2025	218	865	338	0	2,206,269	618,946	0	58,921,978	4,538,148	0
		2026	87	865	338	0	880,484	247,010	0	23,514,734	1,811,096	0
	Paving	2026	23	38	0	0	10,226	0	0	273,097	0	0
	Architectural Coating	2026	23	173	0	0	46,554	0	0	1,243,308	0	0

EMFAC Data[4]

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	Solano County Calendar Years 2025-2026 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	25% LDA, 50% LDT1, 25% LDT2	Gasoline
Vendor		50% MHDT, 50% HHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

[1] Worker and vendor trip rates are based on CalEEMod defaults and include trips from the Petersen Road widening.
[2] Hauling Trips are estimated using CalEEMod methodology assuming 106,000 cubic yards of soil imported and 16 cubic yards of material per truck trip.
[3] Trip lengths obtained from CalEEMod Appendix D defaults for Solano County.
[4] Fuel consumption were calculated using mile per gallon fuel consumption values from EMFAC2021 Emissions Inventory with the specified settings and fleet and fuel assumptions.

Abbreviations:

CalEEMod - California Emissions Estimator Model
EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light-duty automobiles
LDT - light-duty trucks

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at http://www.caleemod.com/
California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 4-3
Estimated Energy Consumption from Mobile Fuel Consumption
Suisun Logistics Center
Suisun, California

Year	Fleet Type	Annual VMT[1]	Percent Gasoline Vehicle Miles[2]	Gasoline Miles per Gallon[2]	Percent Diesel Vehicle Miles[2]	Diesel Miles per Gallon[2]	Percent Natural Gas Vehicle Miles[2]	Natural Gas Miles per DEG[2]	Percent Electric Vehicle Miles[2]	Miles per Electric kWh[3]	Percent Plug-in Hybrid Electric Vehicle Miles[2]	Plug-in Hybrid Miles per Electric kWh[2]	Percent Plug-in Hybrid Gasoline Vehicle Miles[2]	Plug-in Hybrid Gasoline Miles per Gallon[2]	Annual Fuel Consumption[3]			
		VMT/year													Gallons of Gasoline	Gallons of Diesel	DEG of CNG	kWh
2026	Passenger Cars	15,672,954	94%	28	0.40%	37	0.00%	0	3.71%	2.6	1.18%	3.3	1.06%	32	536,283	1673	0	280,375
2026	Trucks	6,819,478	0%	0	100.00%	6.13	0.00%	0	0.00%	0.0	0.00%	0.0	0.00%	0	0	1,112,555	0	0
														Total Fuel Consumption	**536,283**	**1,114,228**	**0**	**280,375**

Notes:

1. The VMT and fleet mixes are based on data provided by The Transportation Engineer, for detailed VMT calculations see Air Quality/Health Risk Technical Report.
2. The percent of each fuel type for a given fleet and the fuel efficiency (miles per gallon, diesel miles per gallon, natural gas miles per DEG) were calculated based on EMFAC2021 for Solano (SF) sub-area and operational year 2026. Plug-in hybrid vehicles are calculated into gasoline and electric fuel percentages by fleet and fuel economy by considering both fuel and energy consumption from plug-in hybrids. Fuel efficiency for electric and gas employees fleets are weighted by the plug-in hybrid electric or combustion VMT against the VMT from all electric or all gasoline vehicles in the employees fleet.
3. Fuel consumption is calculated by multiplying the VMT by the fuel efficiency and percent of vehicles for each fuel type.

Abbreviations:

CNG- Compressed natural gas
DEG - Diesel equivalent gallon
kWh - kilowatt-hour
VMT - Vehicle miles traveled

References:

California Air Resources Board. EMFAC2021. Available at: https://arb.ca.gov/emfac/

Table 4-4a
Unmitigated Energy Consumption from TRU Operations
Suisun Logistics Center
Suisun, California

TRU Usage

TRU Usage Estimates		Value
Percent of time TRU engine is running during TRU operation [--][1]		62.5%
Operational Days [days/year]		365
Average Truck Round Trip Length [miles/trip]		79.0
Average Truck Travel Speed [miles/hour]		50
TRU Equipped Truck Population[2] [# trucks]		237
On-Site Loading and Unloading	Daily loading and unloading time[3] [hrs/day/truck]	4
	Annual loading and unloading time[3] [hrs/year]	346,020
	Daily On-Site TRU Usage[1,3] [hrs/day]	2.5
	Annual On-Site TRU Usage[1,3] [hrs/year]	216,263
Off-Site Travel	Daily Travel Time[3] [hrs/day/truck]	1.6
	Annual Travel Time[3] [hrs/year]	136,678
	Daily Off-Site TRU Usage[1,3] [hrs/day]	1.0
	Annual Off-Site TRU Usage[1,3] [hrs/year]	85,424

TRU Fuel Consumption

Source	Operational Year[4]	Model Year[5]	Fuel	Fuel Consumption (gal/hr)[6]	Annual Fuel Consumption (gal/yr)[7]
TRU Aggregate	2026	ALL	Diesel	0.68	204,644

Notes:

1. According to Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units, TRU engines are generally running about 62.5% of time that a TRU unit is turned on.
2. The TRU truck population was assumed to equal to the number of round trips per day rounded up, or 237 trucks, assuming 100% of trucks in the cold storage scenario will be equipped with TRUs.
3. Approximate on-site TRU usage represents 4 hours of TRU idling when truck is loading and unloading at the dock under the unmitigated scenario.
4. Fuel consumption from TRUs decrease over time, but the earliest possible year was chosen to calculate fuel consumption from TRUs.
5. Fuel consumption is based on default model year composition for TRUs.
6. Fuel consumption is based on OFFROAD2021 for Transportation Refrigeration Unit vehicle classes for Solano (SF) sub-area in 2026. TRU vehicle classes include Instate Gensets, Instate Trailers, Instate Trucks, Out-Of-State Gensets, and Out-Of-State Trailers. Fuel Consumption is calculated by dividing the total TRU fuel use by total TRU operation.
7. Annual fuel consumption is calculated by multiplying the hourly fuel consumption rate by the total number of TRU operational hours per year for both on-site loading and unloading and off-site travel.

Abbreviations:

ARB - [California] Air Resources Board
CO_2 - carbon dioxide
g - gram
gal - gallon
hr - hour
mi - mile
TRU - transportation refrigeration unit

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inventory/.

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Table 4-4b
Mitigated Energy Consumption from TRU Operations
Suisun Logistics Center
Suisun, California

TRU Usage

TRU Usage Estimates		Value
Percent of time TRU engine is running during TRU operation [--][1]		62.5%
Operational Days [days/year]		365
Average Truck Round Trip Length [miles/trip]		79.0
Average Truck Travel Speed [miles/hour]		50
TRU Equipped Truck Population[2] [# trucks]		237
On-Site Loading and Unloading	Daily loading and unloading time[3] [hrs/day/truck]	0.167
	Annual loading and unloading time[3] [hrs/year]	14,418
	Daily On-Site TRU Usage[1,3] [hrs/day]	0.10
	Annual On-Site TRU Usage[1,3] [hrs/year]	9,011
Travel	Daily Travel Time[3] [hrs/day/truck]	1.6
	Annual Travel Time[3] [hrs/year]	136,678
	Daily Off-Site TRU Usage[1,3] [hrs/day]	1.0
	Annual Off-Site TRU Usage[1,3] [hrs/year]	85,424

TRU Emission Factors

Source	Year[4]	Model Year[5]	Fuel	Energy Consumption Rate (gal/hr) or (kW)[6,7]	Annual Energy Consumption (gal/yr) or (MWh/yr)[8]
TRU Aggregate	2026	ALL	Diesel	0.68	64,058
TRU Aggregate	2026	ALL	Electricity	20	4,145

Notes:

1. According to Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units, TRU engines are generally running about 62.5% of time that a TRU unit is turned on.
2. The TRU truck population was assumed to equal to the number of round trips per day rounded up, or 237 trucks, assuming 100% of trucks in the cold storage scenario will be equipped with TRUs.
3. Approximate TRU idling usage under the mitigated scenario represents 5 minutes of operations during plugging in and plugging out. The TRU is assumed to be plugged in to electric outlets for the rest of the docking time of trucks. Truck travel was approximated assuming an average travel speed of 50 miles per hour and an average round-trip distance of 71.8 miles, assuming each Truck equipped with a TRU completes one round trip per day.
4. Fuel consumption from TRUs decrease over time, but the earliest possible year was chosen to calculate fuel consumption from TRUs.
5. Fuel consumption is based on default model year composition for TRUs.
6. Fuel consumption is based on OFFROAD2021 for Transportation Refrigeration Unit vehicle classes for Solano (SF) sub-area in 2026. TRU vehicle classes include Instate Gensets, Instate Trailers, Instate Trucks, Out-Of-State Gensets, and Out-Of-State Trailers. Fuel Consumption is calculated by dividing the total TRU fuel use by total TRU operation.
7. Under the mitigated scenario, TRUs will plug in and be powered by electricity while loading or unloading. Based on Thermo King's Trailer Electrification Position Paper, electric TRUs can be expected to consume around 15-20 kW of electricity during steady-state running conditions, therefore an electric power consumption rate of 20 kW was used to estimate energy consumption. The annual energy consumption rate is calculated by multiplying the power consumption rate by the total number of plug-in hours, which assumes TRUs spend 4 hour idling at the dock during loading and unloading and the TRUs take approximately 5 minutes to plug in or plug out, amounting to 3 hours and 50 minutes of electricity use for the TRUs per truck per day.
8. Annual diesel fuel consumption is calculated by multiplying the hourly fuel consumption rate by the total number of TRU operational hours per year for both on-site loading and unloading and off-site travel.

Abbreviations:

ARB - [California] Air Resources Board	hr - hour
CO2 - carbon dioxide	mi - mile
g - gram	TRU - transportation refrigeration unit
gal - gallon	yr - year

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inventory/.

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Table 4-5
Energy Consumption from On-Site Mobile Equipment
Suisun Logistics Center
Suisun, California

Yard Equipment Usage

Yard Equipment Usage Estimates		Value
Operational Days [days/year]		365
Number of Buildings [# buildings]		6
Yard Trucks (Terminal Tractors)	Yard Trucks at Site[1] [yard trucks/building]	1
	Yard Truck Trips per Day[1] [trips/day/truck]	473
	Yard Truck Trip Length[1] [miles/trip]	0.55
	Daily Yard Truck Travel[1] [miles/day]	1,547
	Annual Yard Truck Travel[1] [miles/year]	564,551
Forklifts	Forklifts at Site[2] [forklift/building]	1
	Forklift Usage Rate[2] [hrs/forklift/day]	24
	Daily Forklift Usage[2] [hrs/day]	144
	Annual Forklift Usage[2] [hrs/year]	52,560

Unmitigated Yard Equipment Fuel Consumption

Source	Year[3]	Fuel Type	Fuel Consumption Rate (gal/mi) or (gal/hr)	Annual Fuel Consumption (gal/yr)[4,5]
Yard Trucks	2026	Diesel	0.16	92,103
Forklifts	2026	Diesel	1.1	55,313

Mitigated Yard Equipment Fuel Consumption

Source	Year[3]	Fuel Type	Fuel Consumption Rate (gal/mi or kW)[6]	Annual Fuel Consumption (gal/yr) or (MWh/yr)[4,5]
Yard Trucks	2026	Diesel	0.16	92,103
Forklifts	2026	Electricity	28	1,472

Notes:

1. The Project Developer expects to operate one yard truck in each of the six buildings. Each yard truck is assumed to be used 365 days per year for emissions estimation purposes. It is assumed that each truck trip will generate one yard truck trip within the site. An average yard truck trip length of 0.55 miles was estimated by estimating the average trip length to each of the six warehouse buildings, weighted by the approximate size of each building.

2. The Project Developer expects to operate one forklift in each of the six buildings. Each forklift is conservatively assumed to run 24 hours per day, 365 days per year for estimation purposes.

3. Fuel consumption from heavy equipment decrease over time, but the earliest possible year was chosen to calculate annual fuel consumption.

4. Unmitigated fuel consumption rate for yard trucks assumes the inverse of default EMFAC2021 fuel efficiency for diesel MHDT vehicles for trucks. Mitigated fuel consumption assumes the truck model years are between 2014 to 2026.

5. Fuel consumption for forklifts were aggregated based on OFFROAD2021 for industrial forklifts for Bay Area Air Quality Management District in 2026. Fuel consumption rate was calculated by dividing the total forklift emissions by total forklift operation from OFFROAD2021. The mitigated scenario assumes all forklifts are electric.

6. Under the mitigated scenario, forklifts will be electrified. An electric power consumption rate was estimated based on the specifications for an electric forklift referenced in OFFROAD documentation for advanced clean equipment, Socma 25 ton electric forklifts, which have a power consumption rate of 15-28 kW, therefore 28 kW was used to estimate energy consumption.

Abbreviations:

ARB - [California] Air Resources Board
g - gram
CO_2e - carbon dioxide equivalents
hr - hour
mi - mile
NO_X - oxides of nitrogen
ROG - reactive organic gases
TRU - transportation refrigeration unit
yr - year

References:

California Air Resources Board. 2021 OFFROAD database. Available at: https://arb.ca.gov/emfac/emissions-inventory/.

California Air Resources Board. Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/tru2021/apph.pdf

Table 4-6
Estimated Electricity Consumption from Building Energy Use
Suisun Logistics Center
Suisun, California

Cold Storage Scenario

Land Use Type	CalEEMod Land Use Subtype	Size	Default Electricity Use[1]	Electricity to Replace Natural Gas[2]	Project Electricity Use
		ksf	kWh/yr	kWh/yr	kWh/yr
Industrial	Refrigerated Warehouse-No Rail	2,059	50,369,989	4,210,655	54,580,644
Parking	Parking Lot	2,169	1,900,467	--	1,900,467
Total Cold Storage Buildout Energy Usage			52,270,456	4,210,655	56,481,111

Dry Storage Scenario

Land Use Type	CalEEMod Land Use Subtype	Size	Default Electricity Use[1]	Electricity to Replace Natural Gas[2]	Project Electricity Use
		ksf	kWh/yr	kWh/yr	kWh/yr
Industrial	Unrefrigerated Warehouse-No Rail	2,059	21,481,535	4,210,655	25,692,190
Parking	Parking Lot	2,169	1,900,467	--	1,900,467
Total Dry Storage Buildout Energy Usage			23,382,002	4,210,655	27,592,657

Notes:

[1] Default Electricity and Natural Gas usage rates were estimated using CalEEMod.

[2] Because the Project has committed to installing no natural gas infrastructure, electricity usage to replace natural gas usage is estimated based on the method developed in Table A-9 of the SMAQMD Greenhouse Gas Threshold Report.

Abbreviations:

ksf - thousand square feet
kWh - kilowatt hours
yr - year
CalEEMod - California Emissions Estimator Model

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at: http://www.caleemod.com/

Table 4-7
Energy Consumpton from Landscaping Equipment
Suisun Logistics Center
Suisun, California

Land Use Type	Warehouse Area[1]	Unmitigated Energy Consumption[2]	Mitigated Energy Consumption[3]
	sqft	(gal gasoline/yr)	MWh/yr
Landscaping Equipment	2,058,670	4,896	40

Notes:

1. Project square footage is used to generate landscaping equipment activities for non-residential land uses based on the CalEEMod's default methodology.
2. Unmitigated landscaping energy consumption is calculated assuming all landscaping equipment is gasoline powered. The energy demand is determined by multiplying the CalEEMod default equipment horsepower by annual usage and CalEEMod default CO_2 emission factors for landscaping equipment and divided by the carbon dioxide emission coefficient for motor gasoline, obtained from the U.S. Energy Information Administration.
3. Mitigated landscaping energy consumption is calculated assuming all landscaping equipment is electric. The energy demand is determined using CalEEMod default equipment horsepower converted to kilowatt hours and multiplying by the annual usage and converting to megawatts.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CO_2 - carbon dioxide equivalents
gal - gallon
MWh - megawatt hour
sqft - square feet
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator

PG&E, 2022. 2022 Power Content Label. Available at:

U.S. Energy Information Administration. 2023. Carbon Dioxide Emissions Coefficients. Available at:

Table 4-8
Diesel Consumption from On-Site Stationary Sources
Suisun Logistics Center
Suisun, California

Emergency Engine Emission Factors for Diesel Engines

Fuel	Engine Tier	Engine Size Range (hp)		Engine Emission Factor for CO_2[1]	CO_2 Emission Coefficent for Diesel Fuel[2]
		Minimum	Maximum	(g/bhp-hr)	lb/gal
Diesel	Tier 2	25	50	522	22.45

Emergency Engine Information[3]

Scenario	Engine Type	Engine Control	Number of Engines	Size	Size	Fuel Type	Annual Operation[4]
				kW	hp		hr/yr
Project Operation	Generator	Tier 2	6	37	50	Diesel	150
	Fire Pump	Tier 2	6	37	50	Diesel	150

Emergency Engine Emissions

Scenario	Engine Type	Size (hp)	Quantity	Annual Energy Consumption[5]
				gal diesel/yr
Project Operation	Generator	50	6	2,305
	Fire Pump	50	6	2,305
Total Energy Consumption				**4,611**

Notes:

[1] The emission factors for CO_2 are based on CalEEMod User's Guide Appendix G.

[2] The carbon dioxide emission coefficient for diesel, obtained from the US Energy Information Administration, is used to determine the annual diesel consumption.

[3] Engine numbers, size, and fuel type of emergency engines are Project-specific estimates.

[4] Operation for routine maintenance and testing was conservatively assumed to be 50 hours per year, the maximum allowable by the Airborne Toxics Control Measure (ATCM) for Stationary Compression Ignition Engines (17 CCR 93115). Operation for nontesting and nonmaintenance purposes was conservatively assumed to be 100 hours per year, per 2022 BAAQMD CEQA Guidelines, Appendix E.

[5] Annual energy consumption is calculated by multiplying CO_2 emission factor for stationary source engines by the annual hours of operation and divided by the carbon dioxide emission coefficient for diesel.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CalEEMod - CALifornia Emissions Estimator MODel
CO_2 - carbon dioxide
gal - gallon
g/bhp-hr - grams per brake horsepower hour
hp - horsepower
kW - kilowatt
lb - pound
yr - year
hr - hour

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

California Air Resources Board. Non-road Diesel Engine Certification Tier Chart. Available online at: https://ww2.arb.ca.gov/resources/documents/non-road-diesel-engine-certification-tier-chart

CARB. 2023. Airborne Toxic Control Measures for Stationary Compression Ignition Engines. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf

USEPA. 2010. Conversion Factors for Hydrocarbon Emission Components, NR-002d. EPA-420-R-10-015. July. Available online at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P10081RP.PDF?Dockey=P10081RP.PDF

BAAQMD. 2004. CARB Emission Factors for CI Diesel Engines - Percent HC in Relation to NMHC + NOx. Available at: https://www.baaqmd.gov/~/media/files/engineering/policy_and_procedures/engines/emissionfactorsfordieselengines.pdf

BAAQMD. 2023. California Air Quality Act Air Quality Guidelines Appendix E: Recommended Methods for Screening and Modeling Local Risks and Hazards. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/appendix-e-recommended-methods-for-screening-and-modeling-local-risks-and-hazards_final-pdf.pdf?la=en

U.S. Energy Information Administration. 2023. Carbon Dioxide Emissions Coefficients. Available at: https://www.eia.gov/environment/emissions/co2_vol_mass.php

Table 5-1
Summary of Construction Energy Consumption
Suisun Logistics Center
Suisun, California

Source		Units	Project Construction Usage
Electricity	Off-Road Construction Equipment[1]	MWh	0.91
Diesel	On-Road Construction Trips[2]	gallons	7,163,875
	Off-Road Construction Equipment[1]	gallons	131,859
Gasoline	On-Road Construction Trips[2]	gallons	84,929,577

Notes:

1. See Table 4-1 for more details on the methodology of energy consumption from off-road construction equipment.
2. See Table 4-2 for more details on the methodology of fuel consumption from on-road construction trips.

Abbreviations:

MWh - megawatt-hour

References:

USEPA. 1996. AP 42. Compilation of Air Pollutant Emission Factors, Volume 1. Fifth Edition. Chapter 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines. Available online at: http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s04.pdf. Accessed March 2019.

Table 5-2
Summary of Operational Energy Consumption
Suisun Logistics Center
Suisun, California

Summary of Cold Storage Operational Energy Usage

Operational Energy Use[1]	Unmitigated Project Enery Use			Mitigated Project Energy Use		
	Electricity	Gasoline	Diesel	Electricity	Gasoline	Diesel
	MWh	gallons	gallons	MWh	gallons	gallons
Mobile Energy Use	280	536,283	1,114,228	280	536,283	1,114,228
TRU Operations Energy Use	--	--	204,644	4,145	--	64,058
On-site Mobile Equipment Energy Use	--	--	147,416	1,472	--	92,103
Cold Storage Building Energy Use	56,481	--	--	56,481	--	--
Landscaping Equipment Energy Use	--	4,896	--	40	--	--
Stationary Source Energy Use	--	--	4,611	--	--	4,611
Total	**56,761**	**541,178**	**1,470,899**	**62,418**	**536,283**	**1,275,000**

Summary of Dry Storage Energy Usage

Operational Energy Use[1]	Unmitigated Project Enery Use			Mitigated Project Energy Use		
	Electricity	Gasoline	Diesel	Electricity	Gasoline	Diesel
	MWh	gallons	gallons	MWh	gallons	gallons
Mobile Energy Use	280	536,283	1,114,228	280	536,283	1,114,228
On-site Mobile Equipment Energy Use	--	--	147,416	1,472	--	92,103
Dry Storage Building Energy Use	27,593	--	--	27,593	--	--
Landscaping Equipment Energy Use	--	4,896	--	40	--	--
Stationary Source Energy Use	--	--	4,611	--	--	4,611
Total	**27,873**	**541,178**	**1,266,255**	**29,384**	**536,283**	**1,210,942**

Notes:

1. Detailed Energy Use calculations are shown in Tables 4-3 through 4-8.

Abbreviations

MWh - Megawatt-hour
TRU - transportation refrigeration unit
yr - year

References:

California Air Pollution Control Officers Association (CAPCOA). California Emissions Estimator Model (CalEEMod), Version 2022.1.0. Available online at http://www.caleemod.com/

Table 5-3
Project's Consistency with Applicable Energy Plans
Suisun Logistics Center
Suisun, California

Renewable Energy or Energy Efficiency Plan	Project Consistency
Renewables Portfolio Standard	**Consistent.** The Project obtains electricity from PG&E who has committed to meeting the standards from Senate Bill 1078.
California Code of Regulations Title 24, Part 6: Energy Efficiency Standards	**Consistent.** The Project will comply with the building energy efficiency standards in Title 24.
California Code of Regulations Title 24, Part 11: California Green Building Standards Code	**Consistent.** The Project will meet or exceed the applicable green building standards in Title 24. The Project will comply with the voluntary CalGreen Tier 2 electric vehicle charging standards, and will not include any natural gas appliances or plumbing.
2023 Integrated Energy Policy Report	**Consistent.** The project will facilitate decarbonization of buildings by excluding any natural gas use and meeting building energy efficiency standards for new buildings.
County of Solano Climate Action Plan	**Consistent.** The energy and efficiency measures of the Climate Action Plan include the establishment of a community choice aggregation program, developing outreach, financing and other assistance on renewable energy and energy efficiency, and adopting green building and energy efficiency ordinances. The Project complies with the goals of these measures, because the Project will not include any natural gas appliances or plumbing, meet or exceed Title 24 requirements, and reduce energy-related emissions by the use of electric equipment for Project operations.
Suisun City General Plan	**Consistent.** The General Plan outlines goals, policies, and programs related to energy efficiency, renewable energy generation (Goal OSC-8, Policies OSC-8.1 to OSC-8.12, and Program OSC 8.1-OSC-8.2). The Project incorporates several features that support the energy-related goals of Suisun City General Plan, including but not limited, installation of on-site photovoltaics for renewable energy generation in compliance with Title 24 solar requirements, designing all-electric buildings, and providing electric vehicle charging infrastructures.

Sources:

California Energy Commission, 2024. Renewables Portfolio Standard - RPS. Available at: https://www.energy.ca.gov/programs-and-topics/programs/renewables-portfolio-standard. Accessed on: January 3, 2024.

Cal. Code Regs., Title 24.

California Energy Commission. 2023. Draft 2023 Integrated Energy Policy Report. Available at:https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report. Accessed: December 2023.

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City of Suisun City 2035 General Plan. Available at: https://www.suisun.com/Departments/Development-Services/Planning/General-Plan. Accessed: December 2023.

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