HELIX Environmental Planning

One Alexandria Square Project

Air Quality Technical Report

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TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

ADT	average daily trips
AQIA	Air Quality Impact Assessment
BMPs	best management practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CO	carbon monoxide
DPM	diesel particulate matter
g/L	grams per liter
H_2S	hydrogen sulfide
HRA	health risk assessment
HVAC	heating, ventilation, and air conditioning
LOS	Level of Service
MEI	maximally exposed individual
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
O_3	ozone
Pb	lead
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
R&D	research and development
RAQS	Regional Air Quality Strategy
ROG	reactive organic gas

ACRONYMS AND ABBREVIATIONS (cont.)

SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SF	square foot/feet
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
TAC	toxic air contaminant
UCP	University Community Plan
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality impacts during construction and operation of the proposed One Alexandria Square Project (project), located in the City of San Diego.

The project would result in emissions of air pollutants during both the construction phase and operational phase of the project. Construction best management practices (BMPs) would be implemented as part of the project, including measures to minimize fugitive dust control emissions, such as watering twice per day during grading and stabilizing storage piles. The project would comply with San Diego Air Pollution Control District (SDAPCD) Rule 55, which requires that no visible dust is emitted beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period, and would incorporate measures to minimize the track-out/carry-out of visible roadway dust. With the inclusion of these BMPs, emissions of all criteria pollutants would be below the daily thresholds during construction, and short-term construction impacts would be less than significant.

Operational emissions associated with the project would include vehicular traffic and area sources such as energy use, landscaping, and the use of consumer products. The project would incorporate energy-efficiency features that would meet the 2019 California Title 24 Energy Efficiency Standards. Criteria pollutant emissions would not exceed the daily screening level thresholds during project operation.

Development of the project would be consistent with the SDAPCD Regional Air Quality Strategy (RAQS) and *2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County* (Attainment Plan) and would not result in cumulatively considerable emissions of nonattainment air pollutants that would exceed the screening level thresholds.

Project-generated traffic would not result in a carbon monoxide (CO) hot spot. Construction and operation of the project also would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants (TACs). In addition, evaluation of potential odors from the project indicated that associated impacts would be less than significant.

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1.0 INTRODUCTION

1.1 PROJECT LOCATION

The One Alexandria Square Project (project) is located on an approximately 22-acre property at 10933 North Torrey Pines Road in the City of San Diego (Figures 1 and 2, *Regional Location*, and *Project Vicinity*, respectively). The project site is currently developed with four buildings and multiple parking lots. The building uses include research and development (R&D), office space, and other supporting uses. The site is bounded by Callan Road, North Torrey Pines Road, Torreyana Road, and Science Park Road, excluding the southeast quadrant of the block, which contains the Sanford Burnham Prebys Medical Discovery Institute. Surrounding uses include a restaurant and industrial uses to the north, hotels, restaurants, a spa, and a golf course to the west, and medical laboratories and research centers to the east and south.

1.2 PROJECT DESCRIPTION

The project entails the reconfiguration and expansion of the existing site to add research and development (R&D) office/lab space (including underground parking), a parking structure, and an amenity village that would include accessory supporting uses such as food and beverage and retail. The project proposes to retain two of the existing four buildings and some parking areas, while redeveloping the remainder of the site (Figure 3, *Site Plan*). Specifically, the two buildings at the western portion of the site, located at 10931/10933 North Torrey Pines Road and 10975 North Torrey Pines Road, would be demolished. The two remaining buildings located on the eastern portion of the site would be retained and are labeled as buildings B1 and B2 by the project. The project proposes to construct eight additional buildings and one parking garage. Three of the proposed buildings (buildings B3, B4, and B5) would also include subterranean parking. The square footages of the two buildings that will be retained, the eight proposed buildings, the proposed parking garage, and the total combined subterranean parking space for the three new buildings are listed below:

- B1: 67,266 square feet (SF)
- B2: 75,720 SF
- B3: 85,865 SF
- B4: 78,311 SF
- B5: 68,456 SF
- B6: 37,042 SF
- B7: 3,017 SF
- B8: 2,473 SF
- B9: 2,735 SF
- B10: 7,275 SF
- Parking Garage: 261,547 SF
- New Subterranean Parking: 110,518 SF

In total, the project would retain 142,986 SF in existing building space and would construct 657,239 SF, consisting of 285,174 SF of new building space, a 261,547 SF parking garage, and 110,518 SF of new subterranean parking space. Buildings B1 and B2 would continue to support existing uses, including R&D uses in both buildings in addition to retail and restaurant space in B1. Buildings B3, B4, B5, and B6 would be constructed to support R&D uses. Buildings B7, B8, B9, and B10 would serve as the Amenity Village, consisting of retail and restaurant uses.

The project proposes to retain 371 existing parking spaces, occurring at building B1, at building B2, and in Lot A. The breakdown of existing parking spaces that would be retained is listed below:

- B1: 49 subterranean spaces, 138 surface spaces
- B2: 68 subterranean spaces, 15 surface spaces
- Lot A: 101 surface spaces
- (254 surface spaces)
- (117 subterranean spaces)
- (371 total existing parking spaces to be retained)

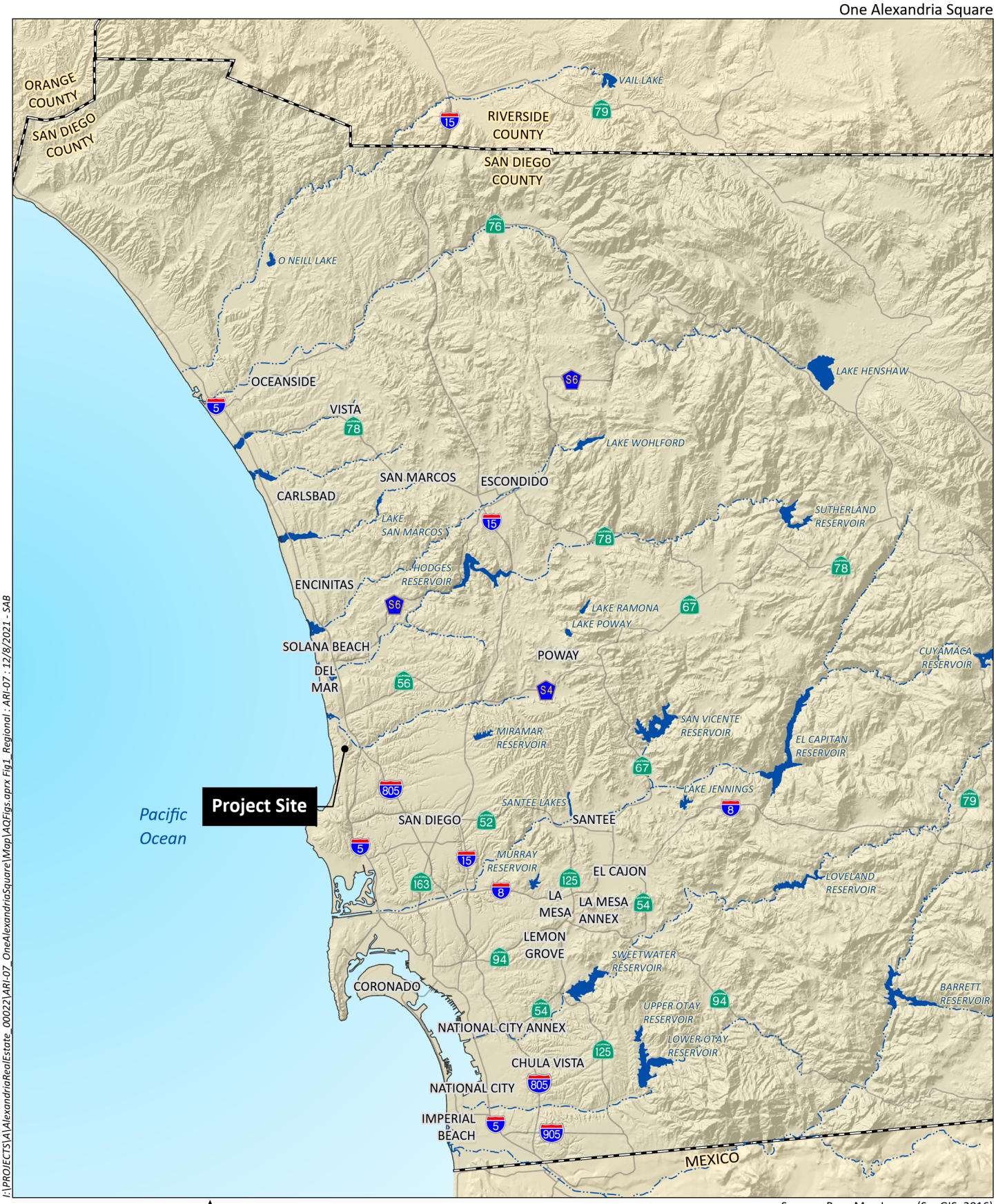
The project proposes to construct 1,116 parking spaces. The proposed parking would occur in a parking garage and at buildings B3, B4, and B5. The breakdown of the proposed parking spaces is listed below:

- B3: 60 subterranean spaces
- B4: 65 subterranean spaces
- B5: 23 subterranean spaces
- (148 subterranean spaces)
- (265 total subterranean spaces)
- Parking Garage: 968 spaces

Therefore, a total of 1,487 parking spaces would be present during project operation. Table 1, *Building Areas and Parking*, shows a summary of changes.

Table 1
BUILDING AREAS AND PARKING

Building	Use	Total Building Ground Floor Area	Parking Spaces Provided
B1 (Existing)	R&D	67,266	49 (In-Building) 138 (surface)
B2 (Existing)	R&D	75,720	68 (In-Building) 15 (surface)
	R&D Existing Remodeled Total	**142,986**	
B3 (New)	R&D	85,865	60 (In-Building)
B4 (New)	R&D	78,311	65 (In-Building)
B5 (New)	R&D	68,456	23 (In-Building)
B6 (New)	R&D	37,042	-
	R&D Total	**269,674**	
B7 (New)	R&D Food and Amenity Village	3,017	-
B8 (New)	R&D Food and Amenity Village	2,473	-
B9 (New)	R&D Food and Amenity Village	2,735	-
B10 (New	R&D Food and Amenity Village	7,275	-
	R&D Amenity Village Total	**15,500**	
CUP	Central Utility Plant Yard Maintenance	-	-
Lot A	Surface Parking	-	101 (surface)
P-1 (New)	Parking Structure	-	968 (In-Building)
	TOTAL	**428,160**	**1,487**



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Source: Base Map Layers (SanGIS, 2016)

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Regional Location

Figure 1

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0 250 Feet

Source: Aerial (SanGIS, 2017)

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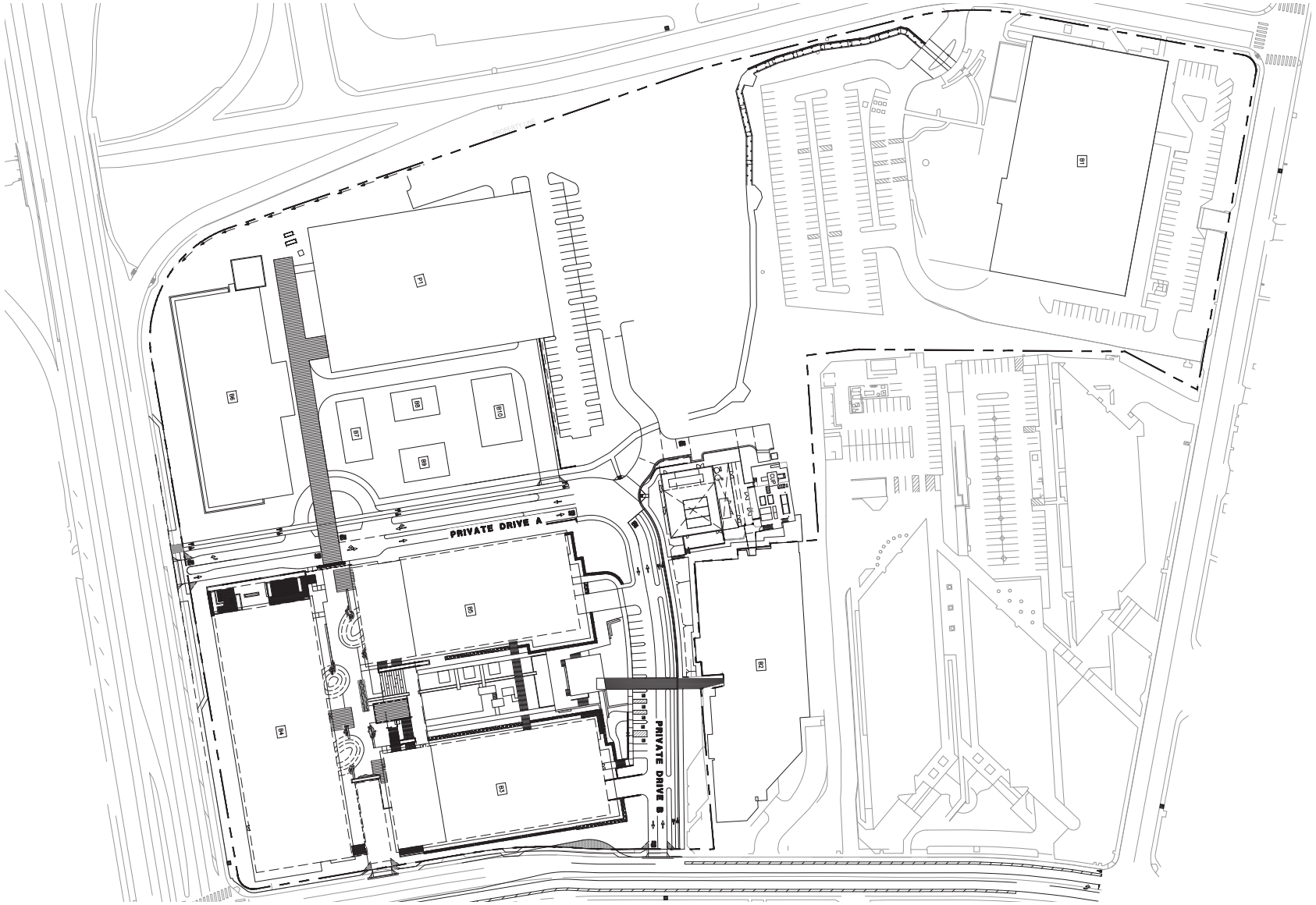
Project Vicinity

Figure 2



Source: Rick Engineering (2021)

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Site Plan

Figure 3

1.3 CONSTRUCTION BEST MANAGEMENT PRACTICES

The project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. San Diego Air Pollution Control District (SDAPCD) Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line. SDAPCD Rule 55 requires the following:

1) **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2) **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:

    a) be minimized using any of the following or equally effective track-out/carry-out and erosion control measures that apply to the project or operation:

        i) track-out grates or gravel beds at each egress point,

        ii) wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks;

        iii) using secured tarps or cargo covering, watering, or treating of transported material; and

    b) be removed at the conclusion of each workday when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/carry-out, only PM_{10}-efficient (particulate matter less than 10 microns) street sweepers certified to meet the most current South Coast Air Quality Management District (SCAQMD) Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

The project would implement the BMP control measures listed below:

- A minimum of two applications of water during grading between dozer/scraper passes;
- Paving, chip sealing, or chemical stabilization of internal roadways after completion of grading;
- Termination of grading if winds exceed 25 miles per hour (mph);
- Maintenance of a minimum soil moisture of 12 percent in all exposed surfaces;
- Stabilization of dirt storage piles by chemical binders, tarps, fencing, or other erosion control;
- Vehicle speeds would be limited on unpaved roads to 15 mph; and
- Construction fleet may use of any combination of diesel catalytic converters, diesel oxidation catalysts, and diesel particulate filters as well as California Air Resources Board (CARB)/U.S. Environmental Protection Agency (USEPA) Engine Certification Tier 4, or other equivalent methods approved by the CARB to meet standards.

1.4 PROJECT DESIGN FEATURES

1.4.1 Area Source Reductions

- Use of low-volatile organic compound (VOC) coating exceeding the requirements of SDAPCD Rule 67.
    - All interior and exterior coatings are to be less than or equal to a VOC content of 50 grams per liter (g/L).

1.4.2 Energy Efficiencies

- New development under the project would be designed to meet the 2019 Title 24 energy efficiency standards. In accordance with the requirements of Title 24, the project would:
    - Install ceiling, attic, and wall insulation;
    - Install window glazing;
    - Have the installation of all heating, ventilation, and air conditioning (HVAC) units verified by a third party; and
    - Include roof anchors and pre-wiring to allow for the installation of photovoltaic systems.

2.0 REGULATORY SETTING

2.1 CRITERIA POLLUTANTS

2.1.1 Pollutants of Concern

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. In general, criteria air pollutants include the following compounds:

- Ozone (O_3)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Particulate matter (PM), which is further subdivided:
    - Coarse PM, 10 micrometers or less in diameter (PM_{10})
    - Fine PM, 2.5 micrometers or less in diameter ($PM_{2.5}$)
- Sulfur dioxide (SO_2)
- Lead (Pb)

Criteria pollutants can be emitted directly from sources (primary pollutants, e.g., CO, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants in the atmosphere (secondary pollutants; e.g., ozone, NO_2, PM_{10}, and $PM_{2.5}$). PM_{10} and $PM_{2.5}$ can be both

primary and secondary pollutants. The principal precursor pollutants of concern are reactive organic gases ([ROGs] also known as volatile organic compounds [VOCs])[1] and nitrogen oxides (NO_X).

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 2, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants*, based on information provided by the California Air Pollution Control Officers Association ([CAPCOA] 2021a). Specific adverse health effects on individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables such as cumulative concentrations, local meteorology and atmospheric conditions, and the number and characteristics of exposed individuals (e.g., age, gender). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO_2 are, therefore, the product of emissions generated by numerous sources throughout a region. Emissions of criteria pollutants from vehicles traveling to or from the project site (mobile emissions) are distributed nonuniformly in location and time throughout the region, wherever the vehicles may travel. As such, specific health effects from these criteria pollutant emissions cannot be meaningfully correlated to the incremental contribution from the project.

Table 2
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading, which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Pollutant	Major Man-Made Sources	Human Health Effects
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid, which can damage marble, iron, and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2021a

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for the criteria pollutants, which are discussed above. Table 3, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are "nonattainment areas" for that pollutant. Effective July 2, 2021, the San Diego Air Basin (SDAB) was classified as a Severe 15 nonattainment area for the 2015 8-hour NAAQS for ozone (USEPA 2021). The SDAB is an attainment area for the NAAQS for all other criteria pollutants including PM_{10} and $PM_{2.5}$. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$ (SDAPCD 2021).

Table 3
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
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)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
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)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–

Pollutant	Averaging Time	California Standards	Federal Standards Primary[1]	Federal Standards Secondary[2]
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	No Federal Standards	No Federal Standards
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	No Federal Standards
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	No Federal Standards	No Federal Standards
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	No Federal Standards

Source: CARB 2016

[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

[2] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Note: More detailed information of the data presented in this table can be found at the CARB website (www.arb.ca.gov).
O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM_{10}: large particulate matter;
AAM: Annual Arithmetic Mean; $PM_{2.5}$: fine particulate matter; CO: carbon monoxide; mg/m^3: milligrams per cubic meter;
NO_2: nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for the County. The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The County's Regional Air Quality Strategies (RAQS) was initially adopted in 1991 to address San Diego County's nonattainment status of the CAAQS for ozone and is updated on a triennial basis. The most recent version of the RAQS was adopted by the SDAPCD in 2016 (SDAPCD 2016). Following the USEPA's adoption of the 2015 NAAQS for ozone, the SDAPCD prepared the *2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County* (Attainment Plan). Approved by the SDAPCD Board on October 14, 2020, and CARB on November 19, 2020, the Attainment Plan was submitted by CARB on January 8, 2021 for USEPA's consideration as a revision to the California State Implementation Plan (SIP) for attaining the ozone standards. The local RAQS and Attainment Plan, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the SIP. The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and state attainment status for San Diego County is presented in Table 4, *San Diego Air Basin Attainment Status*.

Table 4
SAN DIEGO AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Moderate Nonattainment	Nonattainment
CO	Attainment	Attainment
PM_{10}	Unclassifiable	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility	(No federal standard)	Unclassifiable

Source: SDAPCD 2021

2.2 TOXIC AIR CONTAMINANTS

The Health and Safety Code (§39655, subd. (a).) defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Clean Air Act (CAA) (42 United States Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter (CARB 2021a). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a notable effect on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2021a).

2.3 ODORS

The State of California Health and Safety Code Sections 41700 and 41705 and SDAPCD Rule 51 (commonly referred to as public nuisance law) prohibits emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a "considerable" number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

The San Diego Municipal Code also addresses odor impacts at Chapter 14, Article 2, Division 7 paragraph 142.0710, "Air Contaminant Regulations," which states:

> Air contaminants including smoke, charred paper, dust, soot, grime, carbon, noxious acids, toxic fumes, gases, odors, and particulate matter, or any emissions that endanger human health, cause damage to vegetation or property, or cause soiling, shall not be permitted to emanate beyond the boundaries of the premises upon which the use emitting the contaminants is located.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The climate in southern California, including the SDAB, is controlled largely by the large-scale meteorological condition that dominates the west coast of the Undated States: a seasonally semi-permanent high-pressure cell centered over the northeastern Pacific Ocean, called the Pacific high, which keeps most storms from affecting the California coast. Areas within 30 miles of the coast in the San Diego region, including the project site, experience moderate temperatures and comfortable humidity.

Temperature inversion layers (inversions; layers of warmer air over colder air) affect air quality conditions significantly because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). The highest air pollutant concentrations in the SDAB generally occur during inversions. During the summer, air quality problems in the SDAB are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons (VOCs) and NO_X react under the strong, abundant sunlight in the San Diego region, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to CO and NO_X emissions. High NO_X levels usually occur during autumn or winter, on days with summer-like conditions.

The predominant wind direction in the vicinity of the project site is from the northwest and the average wind speed is approximately 6.6 mph (Iowa Environmental Mesonet [IEM] 2021). The annual average maximum temperature in the project area is approximately 70 degrees Fahrenheit (°F), and the annual average minimum temperature is approximately 57°F. Total precipitation in the project area averages approximately 10 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2016).

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1.1 and Table 3. The SDAB is classified as a Severe-15 nonattainment area for the 8-hour NAAQS for ozone. The SDAB is currently classified as a

nonattainment area under the CAAQS for ozone (serious nonattainment), PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for all other criteria pollutants.

3.2.1.2 Monitored Air Quality

The SDAPCD operates a network of ambient air monitoring stations throughout the county. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient monitoring station to the project site is the Del Mar-Mira Costa College monitoring station located along Camino Del Mar in the City of Del Mar, approximately 3.5 miles north of the project site; however, because the San Diego-Kearny Villa Road monitoring station, which is located approximately 7.8 miles southeast of the project site, includes more recent and comprehensive data, monitoring data from this station are used. Air quality data for the San Diego-Kearny Villa Road monitoring station are shown in Table 5, *Air Quality Monitoring Data.*

From 2016 to 2018, monitoring data at the San Diego-Kearny Villa Road station show acceptable levels of $PM_{2.5}$. More current $PM_{2.5}$ data is not available. From 2018 to 2020 the State 8-hour ozone standard was violated five time in 2018, and once in 2019, and ten times in 2020. The Federal 8-hour ozone standard was violated once in 2018, none in 2019, and six times in 2020. The 1-hour ozone standard was violated once in 2018, none in 2019, and twice in 2020.

Table 5
AIR QUALITY MONITORING DATA

Pollutant	2018	2019	2020
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.102	0.083	0.123
Days above 1-hour state standard (>0.09 ppm)	1	0	2
Maximum 8-hour concentration (ppm)	0.077	0.076	0.102
Days above 8-hour state standard (>0.070 ppm)	5	1	10
Days above 8-hour federal standard (>0.075 ppm)	1	0	6
Carbon Monoxide (CO)			
Maximum 8-hour concentration (ppm)	*	*	*
Days above state or federal standard (>9.0 ppm)	*	*	*
Respirable Particulate Matter (PM_{10}) (2016-2018, more current data has not been processed yet)			
Maximum 24-hour concentration (µg/m^3)	36.0	46.0	38.0
Days above state standard (>50 µg/m^3)	0	0	0
Days above federal standard (>150 µg/m^3)	0	0	0
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	32.2	16.2	47.5
Days above federal standard (>35 µg/m^3)	0	0	5.8
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.045	0.046	0.052
Days above state 1-hour standard (0.18 ppm)	0	0	0

Source: CARB 2021b
ppm = parts per million, µg/m^3 = micrograms per cubic meter
*Insufficient data available

3.3 EXISTING SITE CONDITIONS

One Alexandria Square is a 22.2-acre site that currently consists of approximately 290,444 SF of research and development space including 40,000 SF of ancillary retail and food and beverage within a total of four buildings on the project site.

The criteria pollutant and precursor emissions associated with operation of the existing land use were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0, described in Section 4.1, below. The estimated existing total emissions are shown in Table 6, *Existing Land Use Emissions*.

Table 6
EXISTING LAND USE EMISSIONS

Source Category	Pollutant Emissions[1] (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	6.9	<0.1	0.1	<0.1	<0.1	<0.1
Energy	0.1	0.9	0.8	<0.1	0.1	0.1
Mobile	7.1	8.9	64.8	0.1	12.4	3.4
Total[2]	**14.1**	**9.8**	**65.7**	**0.1**	**12.5**	**3.5**

Source: CalEEMod (output data is provided in Appendix A)

[1] For most pollutants, winter conditions result in slightly higher emissions.

[2] Total may not sum due to rounding.

VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant emissions were calculated using the California Emissions Estimator Model (CalEEMod), Version 2020.4.0 (California Air Pollution Control Officers Association [CAPCOA] 2021b). CalEEMod is a computer model used to estimate criteria air pollutant emissions resulting from construction and operation of land development projects throughout the state of California. CalEEMod was developed by CAPCOA with the input of several air quality management and pollution control districts. The input data and subsequent construction and operation emission estimates for the proposed project are discussed below. CalEEMod output files are included in Appendix A.

4.1.1 Construction Emissions

As described above, construction emissions are assessed using the CalEEMod, Version 2020.4.0. CalEEMod contains OFFROAD and EMFAC2017 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, and the ozone precursors VOC and NO_X.

Construction input data for CalEEMod include, but are not limited to (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be

excavated and graded; and (4) volumes of materials to be exported from and imported to the project area. The analysis assessed maximum daily emissions from individual construction activities, including demolition, site preparation, grading, building construction, paving, and architectural coating.

Construction would require heavy equipment during demolition, site preparation, grading, building construction, and paving. Construction equipment estimates are based on assumptions provided by the Project Applicant and model defaults. Table 7, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each stage of construction.

Table 7
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Demolition	Excavator	3
	Concrete/Industrial Saw	1
	Rubber Tired Dozers	2
Site Preparation	Rubber Tired Dozer	3
	Tractor/Loader/Backhoe	4
Grading	Excavator	2
	Grader	1
	Rubber Tired Dozer	1
	Tractors/Loaders/Backhoe	2
	Scraper	2
Building Construction	Crane	1
	Forklift	3
	Generator Set	1
	Tractors/Loaders/Backhoe	3
	Welder	1
Paving	Paver	2
	Paving Equipment	2
	Roller	2
Architectural Coating	Air Compressor	1

Source: CalEEMod (output data, including equipment horsepower, is provided in Appendix A)

The construction schedule was determined by input from the Project Applicant and model defaults. As shown in Table 8, *Anticipated Construction Schedule*, construction is assumed to start in May 2022.

Table 8
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period		
	Start	End	Number of Working Days
Demolition	5/02/2022	5/27/2022	20
Site Preparation	5/30/2022	6/10/2022	10
Grading	6/13/2022	7/29/2022	35
Building Construction	8/1/2022	5/5/2023	200
Paving	5/8/2023	6/2/2023	20
Architectural Coating	6/5/2023	7/14/2023	30

Source: CalEEMod (output data is provided in Appendix A)

The quantity, duration, and the intensity of construction activity have an effect on the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Construction emission calculations presented herein assume the implementation of standard dust control measures listed in Section 1.3, including watering two times daily during grading, ensuring that all exposed surfaces maintain a minimum soil moisture of 12 percent, and limiting vehicle speeds on unpaved roads to 15 mph.

The project would also exceed the requirements of SDAPCD Rule 67 (as described in Section 1.4). All interior, exterior, and paving coatings will have a VOC content below 50 g/L. The quantities of coatings that would be applied to the interior and exterior of the new buildings were estimated according to CalEEMod default assumptions.

4.1.2 Operational Emissions

Operational sources of emissions include area, energy, and transportation. Operational emissions from area sources include engine emissions from landscape maintenance equipment, and VOC emissions from repainting of buildings. Energy source emissions include the combustion of natural gas for heating and hot water.

Operational emissions from mobile source emissions are associated with project-related vehicle trip generation. Based on the Local Mobility Analysis (Rick Engineering Company [REC] 2021), the existing and proposed uses would generate 8 average daily trips (ADT) per thousand square feet of building space. CalEEMod default vehicle speeds, trip purpose, and trip distances were applied to the primary trip types as analyzed in the Traffic Impact Analysis. Model output data sheets are included in Appendix A.

The project would be subject to the 2019 Title 24 Building Energy Efficiency Standards.

4.1.2.1 Local Operational Emissions

Vehicular trips associated with the proposed project would contribute to the congestion at intersections and along roadway segments in the project vicinity. Localized air quality effects would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc.).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended to determine a project's effect on local CO levels. Localized increases in CO concentrations from vehicle congestion at intersections affected by development were screened for in accordance with the protocol recommended by the California Department of Transportation (Caltrans) and published in their *Transportation Project-Level Carbon Monoxide Protocol* (Caltrans 1998).

4.2 SIGNIFICANCE CRITERIA

The City (2016) has approved guidelines for determining significance based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, which provide guidance that a project would have a significant air quality environmental impact if it would:

1. Conflict with or obstruct implementation of the San Diego RAQS or applicable portions of the SIP;

2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

3. Result in a cumulatively considerable net increase of any criteria pollutant for which the SDAB is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

4. Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations;

5. Create objectionable odors affecting a substantial number of people; or

6. Release substantial quantities of air contaminants beyond the boundaries of the premises upon which the stationary source emitting the contaminants is located.

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, or (b) result in a cumulatively considerable net increase of PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., NO_X and VOCs), project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD. As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 for the preparation of Air Quality Impact Assessments (AQIAs). In the absence of a SDAPCD adopted threshold for $PM_{2.5}$, the SCAQMD's screening threshold of 55 pounds per day or 10 tons per year is used.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. The screening thresholds are included in Table 9, *Screening-level Thresholds for Air Quality Impact Analysis*.

Table 9
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS

Construction Emissions (Pounds per Day)			
Construction Emissions (Pounds per Day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	75		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOC)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: SDACPD Rule 20.2 and Rule 1210.
T-BACT = Toxics-Best Available Control Technology

Any unreasonable odor discernible at the property line of the site will be considered a significant odor impact.

5.0 IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed project related to the air pollutant emissions.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the RAQS and Attainment Plan for incorporation into the SIP, prepared by the SDAPCD for the region. Both the RAQS and Attainment Plan are based on SANDAG population projections, as well as land use designations and population projections included in general plans for those communities located within the County. Population growth is typically associated with the construction of residential units or large employment centers.

A project would be inconsistent with the RAQS and Attainment Plan if it results in population and/or employment growth that exceed growth estimates for the area. In the event that a project proposes development which is less dense than anticipated within the General Plan, the project would likewise be consistent with the RAQS and Attainment Plan. If a project proposes development that is greater than

that anticipated in the City General Plan and SANDAG's growth projections upon which the RAQS and Attainment Plan are based, the project could be in conflict with the SIP, and may have a potentially significant impact on air quality. This situation would warrant further analysis to determine if the project and the surrounding projects exceed the growth projections used in the SIP for the specific subregional area.

While potential conflicts with the SIP may occur when a proposed development, such as the proposed project, seeks to increase the amount of R&D, retail, and food and beverage uses at the project site, the effect on anticipated regional population and employment is also important. Because the project does not involve housing, no direct adverse impacts to population or housing would occur from development of the proposed project. Similarly, indirect impacts to population and housing are not anticipated as the jobs provided by the project are expected to be filled by the local labor pool and the project would therefore not result in the migration of workers into the area or result in the construction of new housing. Rather, the addition of R&D, retail, and food and beverage uses on the project site would provide for additional job opportunities in an area that already supports extensive employment for an existing population. Once developed the project site would provide a total of 1,250 jobs. For the City of San Diego jurisdiction, SANDAG forecasts an additional 247,848 jobs to be added in the area from 2016 to 2050, for an increase of 27.8 percent (SANDAG 2021). Therefore, the area would be able to accommodate the project's addition of jobs to the area within the existing growth projections.

In addition, SANDAG's Regional Plan (SANDAG 2021) is the long-range planning document developed to provide a long-term blueprint for the San Diego region that seeks to meet regulatory requirements, address traffic congestion, and create equal access to jobs, education, healthcare, and other community resources. The Regional Plan establishes a planning framework and implementation actions that would provide the San Diego region with a transformative transportation system, a sustainable pattern of growth and development, and innovative demand and management strategies. The Regional Plan encourages the regions within the County to increase residential and employment concentrations in areas with the best existing and future transit connections, and to preserve important open spaces. The focus is on implementation of basic smart growth principles designed to strengthen the integration of land use and transportation. Consistent with the Regional Plan, the project would be developed to include smart growth concepts in a Transit-Priority Area through the provision of on-site retail and food and beverage uses to support the project's existing and proposed R&D uses, which would be the project's primary sources of employment. This development style, in addition to the project's proximity to alternative transportation, would help reduce the average vehicle miles traveled (VMT) for on-site employees, thus reducing pollutant emissions from personal vehicle trips from project employees.

In conclusion, population and housing related impacts associated with the project would not be significant. Furthermore, as detailed in Section 5.2, below, the project would not result in a significant air quality impact with regards to construction- and operational-related emissions of ozone precursors or criteria air pollutants. The project would also comply with existing and new rules and regulations as they are implemented by the SDAPCD, CARB, and/or USEPA related to emissions generated during construction. In addition, the mixed-use aspect of the project site and easy access to mass transit would reduce VMT for project employees, thereby reducing pollutant emissions associated with vehicle trips. Therefore, it is unlikely that the additional land uses and employment from the project would interfere with the SDAPCD's goals for improving air quality in the SDAB. Impacts associated with conformance to regional air quality plans would be less than significant.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

The project would generate criteria pollutants in the short-term during construction and the long-term during operation. To determine whether a project would result in emissions that would violate an air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SDAPCD (as shown in Table 9).

5.2.1 Construction

The project's construction emissions were estimated using CalEEMod as described in Section 4.1.1. Project-specific input was based on general information provided in Section 1.0 and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for project construction are shown in Table 10, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SDAPCD thresholds.

Table 10
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Demolition (2022)	3.5	56.0	28.2	0.2	22.5	5.0
Site Preparation (2022)	3.4	39.1	21.6	0.1	11.3	6.3
Grading (2022)	6.5	149.1	55.8	0.5	18.7	7.4
Building Construction (2022)	3.2	25.0	28.0	0.1	4.9	1.9
Building Construction (2023)	2.8	22.0	26.9	0.1	4.7	1.8
Paving (2023)	1.4	10.2	14.9	<0.1	0.6	0.5
Architectural Coating (2023)	69.0	1.4	3.4	<0.1	0.7	0.2
Maximum Daily Emissions	**69.0**	**149.1**	**55.8**	**0.5**	**22.5**	**7.4**
SDAPCD Thresholds	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 10, emissions of all criteria pollutants related to project construction would be below the SDAPCD's significance thresholds. Therefore, direct impacts from criteria pollutants generated during construction would be less than significant.

5.2.2 Operation

The project's operational emissions were estimated using CalEEMod as described in Section 4.1.2. Operational emission calculations and model outputs are provided in Appendix A. Table 11, *Maximum Daily Operational Emissions*, presents the summary of operational emissions for the project.

Table 11
MAXIMUM DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	9.9	<0.1	0.1	<0.1	<0.1	<0.1
Energy	0.1	1.3	1.1	<0.1	0.1	0.1
Mobile	9.0	9.8	82.3	<0.1	18.2	4.9
Total Daily Emissions	**19.1**	**11.1**	**83.5**	**0.2**	**18.3**	**5.0**
Less Existing Emissions from Table 7	**14.1**	**9.8**	**65.7**	**0.1**	**12.5**	**3.5**
Total Net Project Emissions	**5.0**	**1.3**	**17.8**	**0.1**	**5.8**	**1.5**
SDAPCD Thresholds	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
VOC = volatile organic compound; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 11, net project emissions of all criteria pollutants during operation would be below the daily thresholds. Therefore, operation of the project would result in a less than significant impact on air quality.

5.3 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

The region is a federal and/or state nonattainment area for PM_{10}, $PM_{2.5}$, and ozone. The project would contribute particulates and the ozone precursors VOC and NO_X to the area during project construction and operation. As described in Section 5.2, emissions during construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, construction emissions would not be cumulatively considerable, and the impact would be less than significant.

Long-term emissions, as shown above in Table 12, would be well below regional thresholds, and, therefore, not cumulatively considerable. The long-term cumulative impact would be less than significant.

5.4 IMPACTS TO SENSITIVE RECEPTORS

Impacts to sensitive receptors are typically analyzed for operational period CO hotspots and exposure to TACs. An analysis of the project's potential to expose sensitive receptors to these pollutants is provided below.

5.4.1 Carbon Monoxide Hotspots

5.4.1.1 Intersections

A CO hot spot is an area of localized CO pollution caused by severe vehicle congestion on major roadways, typically near intersections. A quantitative screening is required in two instances: (1) if a project increases the average delay at signalized intersections operating at Level of Service (LOS) E or F;

or (2) if a project causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project. According to the Local Mobility Analysis (REC 2021), One intersection under the Year 2022 + Project scenario would operate at LOS E and experience an increase in delay from the project:

1. Science Park Road, North Torrey Pines Road.

Therefore, consistent with the CO Protocol, these findings indicate that further screening is required. Although the SDAPCD has not, various air quality agencies in California have developed conservative screening methods. The screening methods of the Sacramento Metropolitan Air Quality Management District (SMAQMD) are used for this project because ambient CO concentrations within the SMAQMD jurisdiction are higher than for the project area, as measured by CARB, resulting in a more conservative analysis. The SMAQMD states that a project will not result in a significant impact to local CO concentrations if it meets all of the below criteria:

- The affected intersection carries less than 31,600 vehicles per hour;
- The project does not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other location where horizontal or vertical mixing of air would be substantially limited; and
- The affected intersection, which includes a mix of vehicle types, is not anticipated to be substantially different from the county average, as identified by EMFAC or CalEEMod models.

The traffic volume at the affected intersection under the highest traffic scenario from the Local Mobility Analysis (Year 2022 + Project) are estimated to be 7,385 vehicles during the highest peak.

This intersection is not located in a tunnel, urban canyon, or similar area that would limit the mixing of air, nor is the vehicle mix anticipated to be substantially different than the San Diego County average. There would be no potential for a CO hot spot or exceedance of State or Federal CO ambient air quality standard because the maximum traffic volumes would be substantially less than the 31,600 vehicles per hour screening level; because the congested intersections are located where mixing of air would not be limited; and because the vehicle mix would not be uncommon. Therefore, air quality impacts related to the exposure of sensitive receptors to substantial pollutant concentrations related to intersection operations would be less than significant.

5.4.2 Exposure to Toxic Air Contaminants

5.4.2.1 Construction

Construction activities would result in short-term project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment. CARB identified diesel PM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer time period. According to the Office of Environmental Health Hazard Assessment, health risk assessments (HRAs), which determine the exposure of sensitive receptors to TAC emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project.

There would be relatively few pieces of off-road, heavy-duty diesel equipment used during construction, and the construction period would be relatively short, especially when compared to 30 years. Combined with the highly dispersive properties of diesel PM and additional reductions in exhaust emissions from improved equipment (as detailed under Section 1.3), construction-related emissions would not expose sensitive receptors to substantial emissions of TACs. Impacts from construction emissions would be less than significant.

5.4.2.2 Operation

With regard to long-term operations, HRAs are typically conducted for substantial sources of diesel particulate emissions (e.g., truck stops, bus stations, and warehouse distribution facilities); these types of sources would not be part of the project. Other sources of acutely and chronically hazardous TACs include industrial manufacturing processes, automotive repair facilities, and dry-cleaning facilities. The proposed project would include laboratory, R&D, office, retail, and food and beverage uses. These sources are generally relatively small and are regulated by the SDAPCD. The SDAPCD requires a Permit to Operate for emissions sources such as coffee roasters and sometimes labs. Exposures to toxic substances is evaluated and limited. For existing sources such as coffee roasters and laboratories, the emissions are required to be inventoried annually to determine whether emissions are above the thresholds requiring emissions reductions. Through mandatory compliance with existing regulations, the project does not warrant an HRA, and the proposed project uses would not be allowed to generate substantial TAC emissions above the SDAPCD risk thresholds.

5.5 ODORS

As discussed above, the State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. Any unreasonable odor discernible at the property line of the project site will be considered a significant odor impact.

The project could produce odors during proposed construction activities resulting from construction equipment exhaust, application of asphalt, and/or the application of architectural coatings; however, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore, any odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of the respective phase of construction. Accordingly, the proposed project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

During project operation, the temporary storage of refuse could be a potential source of odor; however, project-generated refuse is required to be stored in covered containers and removed at regular intervals in compliance with the City's Municipal Code solid waste regulations, thereby precluding significant odor impacts. Odors associated with the food and beverage portions of the project would be typical smells associated with cooked foods and would not result in unfamiliar odors that substantially differ from those already produced by similar land uses at the project site (e.g., the existing food preparation areas). Furthermore, the proposed project would be required to comply with the aforementioned SDAPCD Rule 51 which prohibits the discharge of odorous emissions that would create a public nuisance. As such, long-term operation of the proposed project would not create objectionable odors affecting a substantial number of people.

6.0 LIST OF PREPARERS

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Appendix A

CalEEMod Output

Alexandria Square - Existing - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Alexandria Square - Existing

San Diego County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	290.44	1000sqft	6.67	290,444.00	0
Enclosed Parking with Elevator	132.00	Space	1.19	52,800.00	0
Parking Lot	660.00	Space	5.94	264,000.00	0
Unenclosed Parking with Elevator	169.00	Space	1.52	67,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Bldg A has 495 at grade parking lot spaces + Bldg D has 165 at grade spaces = 660 spaces. Bldg A has 53 spaces for underground parking + Bldg C has 79 underground spaces = 132 underground spaces, Bldg D has 169 spaces unenclosed parking structure with elevator spaces, .

Construction Phase - Existing site, no construction.

Off-road Equipment - no construction

Trips and VMT - no construction

On-road Fugitive Dust - no construction

Demolition -

Grading - no construction

Alexandria Square - Existing - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - Traffic study

Area Coating - Compliance with SDCAPCD Rule 67.0.1

Solid Waste - From Waste Management Report, p. 17, Table 6. 250 TPY

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Coatings limited per SDCAPCD Rule 67.0.1

Water Mitigation - Existing use does not include a water efficient irrigation system.

Waste Mitigation -

Off-road Equipment - Existing, no construction.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Parking	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	PhaseEndDate	1/28/2020	12/31/2019
tblLandUse	LandUseSquareFeet	290,440.00	290,444.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOnRoadDust	HaulingPercentPave	100.00	0.00
tblOnRoadDust	VendorPercentPave	100.00	0.00
tblOnRoadDust	WorkerPercentPave	100.00	0.00
tblSolidWaste	SolidWasteGenerationRate	22.07	250.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	VendorTripLength	7.30	0.00
tblTripsAndVMT	WorkerTripLength	10.80	0.00
tblVehicleTrips	ST_TR	1.90	8.00
tblVehicleTrips	SU_TR	1.11	8.00
tblVehicleTrips	WD_TR	11.26	8.00
tblWaterMitigation	UseWaterEfficientIrrigationSystemPercentReduction	6.1	0

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

Alexandria Square - Existing - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.8540	1.1800e-003	0.1283	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.2739	0.2739	7.3000e-004		0.2921
Energy	0.0989	0.8987	0.7549	5.3900e-003		0.0683	0.0683		0.0683	0.0683		1,078.4577	1,078.4577	0.0207	0.0198	1,084.8664
Mobile	7.1460	8.9043	64.8377	0.1235	12.2615	0.1313	12.3929	3.2667	0.1232	3.3900		12,599.6609	12,599.6609	0.9902	0.6234	12,810.1906
Total	**14.0989**	**9.8042**	**65.7209**	**0.1289**	**12.2615**	**0.2001**	**12.4616**	**3.2667**	**0.1920**	**3.4587**		**13,678.3924**	**13,678.3924**	**1.0116**	**0.6432**	**13,895.3491**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.8540	1.1800e-003	0.1283	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.2739	0.2739	7.3000e-004		0.2921
Energy	0.0989	0.8987	0.7549	5.3900e-003		0.0683	0.0683		0.0683	0.0683		1,078.4577	1,078.4577	0.0207	0.0198	1,084.8664
Mobile	7.1460	8.9043	64.8377	0.1235	12.2615	0.1313	12.3929	3.2667	0.1232	3.3900		12,599.6609	12,599.6609	0.9902	0.6234	12,810.1906
Total	**14.0989**	**9.8042**	**65.7209**	**0.1289**	**12.2615**	**0.2001**	**12.4616**	**3.2667**	**0.1920**	**3.4587**		**13,678.3924**	**13,678.3924**	**1.0116**	**0.6432**	**13,895.3491**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Existing, no Construction	Demolition	1/1/2020	12/31/2019	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 8.65

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Existing, no Construction	Concrete/Industrial Saws	0	0.00	81	0.73
Existing, no Construction	Excavators	0	0.00	158	0.38
Existing, no Construction	Rubber Tired Dozers	0	0.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Existing, no Construction	0	0.00	0.00	0.00	0.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.1460	8.9043	64.8377	0.1235	12.2615	0.1313	12.3929	3.2667	0.1232	3.3900		12,599.6609	12,599.6609	0.9902	0.6234	12,810.1906
Unmitigated	7.1460	8.9043	64.8377	0.1235	12.2615	0.1313	12.3929	3.2667	0.1232	3.3900		12,599.6609	12,599.6609	0.9902	0.6234	12,810.1906

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Research & Development	2,323.52	2,323.52	2323.52	5,823,316	5,823,316
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	2,323.52	2,323.52	2,323.52	5,823,316	5,823,316

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

Alexandria Square - Existing - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Unenclosed Parking with	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.543113	0.063255	0.185840	0.124300	0.025065	0.006074	0.008663	0.006151	0.000751	0.000534	0.029628	0.000994	0.005634
Parking Lot	0.543113	0.063255	0.185840	0.124300	0.025065	0.006074	0.008663	0.006151	0.000751	0.000534	0.029628	0.000994	0.005634
Research & Development	0.543113	0.063255	0.185840	0.124300	0.025065	0.006074	0.008663	0.006151	0.000751	0.000534	0.029628	0.000994	0.005634
Unenclosed Parking with Elevator	0.543113	0.063255	0.185840	0.124300	0.025065	0.006074	0.008663	0.006151	0.000751	0.000534	0.029628	0.000994	0.005634

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0989	0.8987	0.7549	5.3900e-003		0.0683	0.0683		0.0683	0.0683		1,078.4577	1,078.4577	0.0207	0.0198	1,084.8664
NaturalGas Unmitigated	0.0989	0.8987	0.7549	5.3900e-003		0.0683	0.0683		0.0683	0.0683		1,078.4577	1,078.4577	0.0207	0.0198	1,084.8664

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	9166.89	0.0989	0.8987	0.7549	5.3900e-003		0.0683	0.0683		0.0683	0.0683		1,078.4577	1,078.4577	0.0207	0.0198	1,084.8664
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0989**	**0.8987**	**0.7549**	**5.3900e-003**		**0.0683**	**0.0683**		**0.0683**	**0.0683**		**1,078.4577**	**1,078.4577**	**0.0207**	**0.0198**	**1,084.8664**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	9.16689	0.0989	0.8987	0.7549	5.3900e-003		0.0683	0.0683		0.0683	0.0683		1,078.4577	1,078.4577	0.0207	0.0198	1,084.8664
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0989**	**0.8987**	**0.7549**	**5.3900e-003**		**0.0683**	**0.0683**		**0.0683**	**0.0683**		**1,078.4577**	**1,078.4577**	**0.0207**	**0.0198**	**1,084.8664**

6.0 Area Detail

6.1 Mitigation Measures Area

Alexandria Square - Existing - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.8540	1.1800e-003	0.1283	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.2739	0.2739	7.3000e-004		0.2921
Unmitigated	6.8540	1.1800e-003	0.1283	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.2739	0.2739	7.3000e-004		0.2921

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4903					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.3517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0120	1.1800e-003	0.1283	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.2739	0.2739	7.3000e-004		0.2921
Total	**6.8540**	**1.1800e-003**	**0.1283**	**1.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**		**0.2739**	**0.2739**	**7.3000e-004**		**0.2921**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4903					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.3517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0120	1.1800e-003	0.1283	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.2739	0.2739	7.3000e-004		0.2921
Total	**6.8540**	**1.1800e-003**	**0.1283**	**1.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**		**0.2739**	**0.2739**	**7.3000e-004**		**0.2921**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Alexandria Square - Proposed Project

San Diego County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	428.16	1000sqft	9.83	428,160.00	0
Enclosed Parking with Elevator	252.00	Space	2.27	100,800.00	0
Parking Lot	254.00	Space	2.29	101,600.00	0
Unenclosed Parking with Elevator	799.00	Space	7.19	319,600.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2024
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - "Enclosed Parking with Elevator" represents the underground parking. "Unenclosed Parking with Elevator" represents the parking structure.

Construction Phase - based on 14 months of overall construction.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Only 1 excavator and 1 loader were ID'ed in the information request response. 2 loaders and 2 excavators were default values.

Off-road Equipment -

Off-road Equipment -

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - Estimate

Demolition - Table 4, Waste Management Plan, Bldg Demolition 36,331 Tons (43,254 CY)

Grading - Parking sidewalks gutter demo = 3562 tons debris. Clearing/grubbing and grading = 231,335 + 253 tons debris = 231,588 tons debris. Table 4 WM Plan.

Architectural Coating - Project will meet the requirements of Rule 67.0.1. Architectural Coatings.

Vehicle Trips - From Traffic Study 8 trips / 1000 sf

Area Coating - As required by SDCAPCD Rule 67.0.1

Solid Waste - Table 7, WM Plan

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - SDCAPCD Rule 67.0.1

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Parking	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Parking	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	50
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	370.00	200.00
tblGrading	MaterialExported	0.00	231,588.00
tblGrading	MaterialExported	0.00	3,562.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblSolidWaste	SolidWasteGenerationRate	32.54	623.00
tblVehicleTrips	ST_TR	1.90	8.00
tblVehicleTrips	SU_TR	1.11	8.00
tblVehicleTrips	WD_TR	11.26	8.00

2.0 Emissions Summary

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	6.5447	149.1295	55.7545	0.4742	42.6218	2.6610	44.1466	10.3164	2.4858	11.8535	0.0000	51,370.0517	51,370.0517	4.1179	7.1871	53,614.7486
2023	68.9724	22.0335	26.8671	0.0834	3.9810	0.7564	4.7374	1.0799	0.7121	1.7919	0.0000	8,507.6372	8,507.6372	0.7873	0.5709	8,697.4398
Maximum	**68.9724**	**149.1295**	**55.7545**	**0.4742**	**42.6218**	**2.6610**	**44.1466**	**10.3164**	**2.4858**	**11.8535**	**0.0000**	**51,370.0517**	**51,370.0517**	**4.1179**	**7.1871**	**53,614.7486**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	6.5447	149.1295	55.7545	0.4742	20.9752	2.6610	22.5000	4.8742	2.4858	7.3601	0.0000	51,370.0517	51,370.0517	4.1179	7.1871	53,614.7486
2023	68.9724	22.0335	26.8671	0.0834	3.9810	0.7564	4.7374	1.0799	0.7121	1.7919	0.0000	8,507.6372	8,507.6372	0.7873	0.5709	8,697.4398
Maximum	**68.9724**	**149.1295**	**55.7545**	**0.4742**	**20.9752**	**2.6610**	**22.5000**	**4.8742**	**2.4858**	**7.3601**	**0.0000**	**51,370.0517**	**51,370.0517**	**4.1179**	**7.1871**	**53,614.7486**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	46.45	0.00	44.28	47.75	0.00	32.93	0.00	0.00	0.00	0.00	0.00	0.00

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.9274	1.6000e-003	0.1767	1.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		0.3793	0.3793	9.9000e-004		0.4041
Energy	0.1457	1.3249	1.1129	7.9500e-003		0.1007	0.1007		0.1007	0.1007		1,589.8157	1,589.8157	0.0305	0.0292	1,599.2632
Mobile	9.0469	9.8050	82.2651	0.1649	18.0715	0.1311	18.2026	4.8139	0.1223	4.9362		17,083.2488	17,083.2488	1.2809	0.7996	17,353.5528
Total	**19.1201**	**11.1315**	**83.5546**	**0.1728**	**18.0715**	**0.2324**	**18.3039**	**4.8139**	**0.2236**	**5.0375**		**18,673.4438**	**18,673.4438**	**1.3124**	**0.8288**	**18,953.2200**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.9255	1.3100e-003	0.1473	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.3127	0.3127	8.8000e-004		0.3347
Energy	0.1457	1.3249	1.1129	7.9500e-003		0.1007	0.1007		0.1007	0.1007		1,589.8157	1,589.8157	0.0305	0.0292	1,599.2632
Mobile	9.0469	9.8050	82.2651	0.1649	18.0715	0.1311	18.2026	4.8139	0.1223	4.9362		17,083.2488	17,083.2488	1.2809	0.7996	17,353.5528
Total	**19.1182**	**11.1312**	**83.5253**	**0.1728**	**18.0715**	**0.2323**	**18.3038**	**4.8139**	**0.2234**	**5.0373**		**18,673.3772**	**18,673.3772**	**1.3123**	**0.8288**	**18,953.1506**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.01	0.00	0.04	0.00	0.00	0.07	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.01	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/2/2022	5/27/2022	5	20	
2	Site Preparation	Site Preparation	5/30/2022	6/10/2022	5	10	
3	Grading	Grading	6/13/2022	7/29/2022	5	35	
4	Building Construction	Building Construction	8/1/2022	5/5/2023	5	200	
5	Paving	Paving	5/8/2023	6/2/2023	5	20	
6	Architectural Coating	Architectural Coating	6/5/2023	7/14/2023	5	30	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 105

Acres of Paving: 11.75

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 642,240; Non-Residential Outdoor: 214,080; Striped Parking Area: 31,320 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	3,592.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	352.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	22,898.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	356.00	156.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	71.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					39.3574	0.0000	39.3574	5.9601	0.0000	5.9601			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**39.3574**	**1.2427**	**40.6000**	**5.9601**	**1.1553**	**7.1154**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7842	30.2642	7.1983	0.1128	3.1412	0.2814	3.4226	0.8610	0.2693	1.1303		12,412.3730	12,412.3730	0.5955	1.9718	13,014.8680
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0321	0.3688	1.0600e-003	0.1232	7.0000e-004	0.1239	0.0327	6.4000e-004	0.0333		108.0858	108.0858	3.4900e-003	3.1900e-003	109.1237
Total	**0.8316**	**30.2963**	**7.5671**	**0.1138**	**3.2644**	**0.2821**	**3.5465**	**0.8937**	**0.2699**	**1.1636**		**12,520.4587**	**12,520.4587**	**0.5989**	**1.9750**	**13,123.9917**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					17.7108	0.0000	17.7108	2.6821	0.0000	2.6821			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**17.7108**	**1.2427**	**18.9535**	**2.6821**	**1.1553**	**3.8373**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7842	30.2642	7.1983	0.1128	3.1412	0.2814	3.4226	0.8610	0.2693	1.1303		12,412.3730	12,412.3730	0.5955	1.9718	13,014.8680
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0474	0.0321	0.3688	1.0600e-003	0.1232	7.0000e-004	0.1239	0.0327	6.4000e-004	0.0333		108.0858	108.0858	3.4900e-003	3.1900e-003	109.1237
Total	**0.8316**	**30.2963**	**7.5671**	**0.1138**	**3.2644**	**0.2821**	**3.5465**	**0.8937**	**0.2699**	**1.1636**		**12,520.4587**	**12,520.4587**	**0.5989**	**1.9750**	**13,123.9917**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6966	0.0000	19.6966	10.1084	0.0000	10.1084			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**19.6966**	**1.6126**	**21.3092**	**10.1084**	**1.4836**	**11.5920**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1537	5.9315	1.4108	0.0221	0.6156	0.0552	0.6708	0.1688	0.0528	0.2215		2,432.7145	2,432.7145	0.1167	0.3865	2,550.7982
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0568	0.0385	0.4425	1.2700e-003	0.1479	8.4000e-004	0.1487	0.0392	7.7000e-004	0.0400		129.7029	129.7029	4.1900e-003	3.8300e-003	130.9484
Total	**0.2105**	**5.9700**	**1.8533**	**0.0234**	**0.7635**	**0.0560**	**0.8195**	**0.2080**	**0.0535**	**0.2615**		**2,562.4174**	**2,562.4174**	**0.1209**	**0.3903**	**2,681.7466**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8635	0.0000	8.8635	4.5488	0.0000	4.5488			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**8.8635**	**1.6126**	**10.4760**	**4.5488**	**1.4836**	**6.0324**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1537	5.9315	1.4108	0.0221	0.6156	0.0552	0.6708	0.1688	0.0528	0.2215		2,432.7145	2,432.7145	0.1167	0.3865	2,550.7982
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0568	0.0385	0.4425	1.2700e-003	0.1479	8.4000e-004	0.1487	0.0392	7.7000e-004	0.0400		129.7029	129.7029	4.1900e-003	3.8300e-003	130.9484
Total	**0.2105**	**5.9700**	**1.8533**	**0.0234**	**0.7635**	**0.0560**	**0.8195**	**0.2080**	**0.0535**	**0.2615**		**2,562.4174**	**2,562.4174**	**0.1209**	**0.3903**	**2,681.7466**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.9391	0.0000	9.9391	3.7651	0.0000	3.7651			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.9391**	**1.6349**	**11.5740**	**3.7651**	**1.5041**	**5.2692**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8567	110.2433	26.2214	0.4107	11.4423	1.0252	12.4676	3.1363	0.9809	4.1172		45,214.5268	45,214.5268	2.1691	7.1828	47,409.2346
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0632	0.0428	0.4917	1.4200e-003	0.1643	9.3000e-004	0.1652	0.0436	8.6000e-004	0.0444		144.1143	144.1143	4.6500e-003	4.2500e-003	145.4982
Total	**2.9199**	**110.2860**	**26.7130**	**0.4122**	**11.6066**	**1.0261**	**12.6328**	**3.1799**	**0.9817**	**4.1616**		**45,358.6412**	**45,358.6412**	**2.1737**	**7.1871**	**47,554.7328**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.4726	0.0000	4.4726	1.6943	0.0000	1.6943			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**4.4726**	**1.6349**	**6.1075**	**1.6943**	**1.5041**	**3.1984**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8567	110.2433	26.2214	0.4107	11.4423	1.0252	12.4676	3.1363	0.9809	4.1172		45,214.5268	45,214.5268	2.1691	7.1828	47,409.2346
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0632	0.0428	0.4917	1.4200e-003	0.1643	9.3000e-004	0.1652	0.0436	8.6000e-004	0.0444		144.1143	144.1143	4.6500e-003	4.2500e-003	145.4982
Total	**2.9199**	**110.2860**	**26.7130**	**0.4122**	**11.6066**	**1.0261**	**12.6328**	**3.1799**	**0.9817**	**4.1616**		**45,358.6412**	**45,358.6412**	**2.1737**	**7.1871**	**47,554.7328**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3444	8.6092	2.8609	0.0333	1.0565	0.0905	1.1470	0.3042	0.0866	0.3907		3,587.1202	3,587.1202	0.1086	0.5211	3,745.1344
Worker	1.1241	0.7609	8.7518	0.0252	2.9245	0.0166	2.9410	0.7757	0.0153	0.7910		2,565.2350	2,565.2350	0.0828	0.0757	2,589.8687
Total	**1.4686**	**9.3701**	**11.6128**	**0.0585**	**3.9810**	**0.1070**	**4.0880**	**1.0799**	**0.1018**	**1.1817**		**6,152.3552**	**6,152.3552**	**0.1914**	**0.5969**	**6,335.0031**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3444	8.6092	2.8609	0.0333	1.0565	0.0905	1.1470	0.3042	0.0866	0.3907		3,587.1202	3,587.1202	0.1086	0.5211	3,745.1344
Worker	1.1241	0.7609	8.7518	0.0252	2.9245	0.0166	2.9410	0.7757	0.0153	0.7910		2,565.2350	2,565.2350	0.0828	0.0757	2,589.8687
Total	**1.4686**	**9.3701**	**11.6128**	**0.0585**	**3.9810**	**0.1070**	**4.0880**	**1.0799**	**0.1018**	**1.1817**		**6,152.3552**	**6,152.3552**	**0.1914**	**0.5969**	**6,335.0031**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1812	6.9688	2.4827	0.0320	1.0565	0.0409	1.0975	0.3042	0.0392	0.3433		3,453.2349	3,453.2349	0.1040	0.5005	3,604.9722
Worker	1.0556	0.6799	8.1404	0.0244	2.9245	0.0157	2.9402	0.7757	0.0145	0.7902		2,499.1924	2,499.1924	0.0754	0.0704	2,522.0615
Total	**1.2368**	**7.6486**	**10.6231**	**0.0564**	**3.9810**	**0.0567**	**4.0377**	**1.0799**	**0.0536**	**1.1335**		**5,952.4273**	**5,952.4273**	**0.1794**	**0.5709**	**6,127.0337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1812	6.9688	2.4827	0.0320	1.0565	0.0409	1.0975	0.3042	0.0392	0.3433		3,453.2349	3,453.2349	0.1040	0.5005	3,604.9722
Worker	1.0556	0.6799	8.1404	0.0244	2.9245	0.0157	2.9402	0.7757	0.0145	0.7902		2,499.1924	2,499.1924	0.0754	0.0704	2,522.0615
Total	**1.2368**	**7.6486**	**10.6231**	**0.0564**	**3.9810**	**0.0567**	**4.0377**	**1.0799**	**0.0536**	**1.1335**		**5,952.4273**	**5,952.4273**	**0.1794**	**0.5709**	**6,127.0337**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0445	0.0287	0.3430	1.0300e-003	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		105.3031	105.3031	3.1800e-003	2.9700e-003	106.2666
Total	**0.0445**	**0.0287**	**0.3430**	**1.0300e-003**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**105.3031**	**105.3031**	**3.1800e-003**	**2.9700e-003**	**106.2666**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.3000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0445	0.0287	0.3430	1.0300e-003	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		105.3031	105.3031	3.1800e-003	2.9700e-003	106.2666
Total	**0.0445**	**0.0287**	**0.3430**	**1.0300e-003**	**0.1232**	**6.6000e-004**	**0.1239**	**0.0327**	**6.1000e-004**	**0.0333**		**105.3031**	**105.3031**	**3.1800e-003**	**2.9700e-003**	**106.2666**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.5702					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**68.7619**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2105	0.1356	1.6235	4.8700e-003	0.5833	3.1400e-003	0.5864	0.1547	2.8900e-003	0.1576		498.4344	498.4344	0.0150	0.0140	502.9954
Total	**0.2105**	**0.1356**	**1.6235**	**4.8700e-003**	**0.5833**	**3.1400e-003**	**0.5864**	**0.1547**	**2.8900e-003**	**0.1576**		**498.4344**	**498.4344**	**0.0150**	**0.0140**	**502.9954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	68.5702					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**68.7619**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2105	0.1356	1.6235	4.8700e-003	0.5833	3.1400e-003	0.5864	0.1547	2.8900e-003	0.1576		498.4344	498.4344	0.0150	0.0140	502.9954
Total	**0.2105**	**0.1356**	**1.6235**	**4.8700e-003**	**0.5833**	**3.1400e-003**	**0.5864**	**0.1547**	**2.8900e-003**	**0.1576**		**498.4344**	**498.4344**	**0.0150**	**0.0140**	**502.9954**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.0469	9.8050	82.2651	0.1649	18.0715	0.1311	18.2026	4.8139	0.1223	4.9362		17,083.2488	17,083.2488	1.2809	0.7996	17,353.5528
Unmitigated	9.0469	9.8050	82.2651	0.1649	18.0715	0.1311	18.2026	4.8139	0.1223	4.9362		17,083.2488	17,083.2488	1.2809	0.7996	17,353.5528

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Research & Development	3,425.28	3,425.28	3425.28	8,584,599	8,584,599
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	3,425.28	3,425.28	3,425.28	8,584,599	8,584,599

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3
Unenclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.557888	0.062607	0.178921	0.119061	0.024112	0.006269	0.008734	0.006266	0.000708	0.000566	0.028949	0.000971	0.004949
Parking Lot	0.557888	0.062607	0.178921	0.119061	0.024112	0.006269	0.008734	0.006266	0.000708	0.000566	0.028949	0.000971	0.004949
Research & Development	0.557888	0.062607	0.178921	0.119061	0.024112	0.006269	0.008734	0.006266	0.000708	0.000566	0.028949	0.000971	0.004949
Unenclosed Parking with Elevator	0.557888	0.062607	0.178921	0.119061	0.024112	0.006269	0.008734	0.006266	0.000708	0.000566	0.028949	0.000971	0.004949

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1457	1.3249	1.1129	7.9500e-003		0.1007	0.1007		0.1007	0.1007		1,589.8157	1,589.8157	0.0305	0.0292	1,599.2632
NaturalGas Unmitigated	0.1457	1.3249	1.1129	7.9500e-003		0.1007	0.1007		0.1007	0.1007		1,589.8157	1,589.8157	0.0305	0.0292	1,599.2632

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	13513.4	0.1457	1.3249	1.1129	7.9500e-003		0.1007	0.1007		0.1007	0.1007		1,589.8157	1,589.8157	0.0305	0.0292	1,599.2632
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1457**	**1.3249**	**1.1129**	**7.9500e-003**		**0.1007**	**0.1007**		**0.1007**	**0.1007**		**1,589.8157**	**1,589.8157**	**0.0305**	**0.0292**	**1,599.2632**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	13.5134	0.1457	1.3249	1.1129	7.9500e-003		0.1007	0.1007		0.1007	0.1007		1,589.8157	1,589.8157	0.0305	0.0292	1,599.2632
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1457**	**1.3249**	**1.1129**	**7.9500e-003**		**0.1007**	**0.1007**		**0.1007**	**0.1007**		**1,589.8157**	**1,589.8157**	**0.0305**	**0.0292**	**1,599.2632**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Alexandria Square - Proposed Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.9255	1.3100e-003	0.1473	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.3127	0.3127	8.8000e-004		0.3347
Unmitigated	9.9274	1.6000e-003	0.1767	1.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		0.3793	0.3793	9.9000e-004		0.4041

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5636					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.3475					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0163	1.6000e-003	0.1767	1.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004		0.3793	0.3793	9.9000e-004		0.4041
Total	**9.9274**	**1.6000e-003**	**0.1767**	**1.0000e-005**		**6.3000e-004**	**6.3000e-004**		**6.3000e-004**	**6.3000e-004**		**0.3793**	**0.3793**	**9.9000e-004**		**0.4041**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5636					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.3475					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0144	1.3100e-003	0.1473	1.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.3127	0.3127	8.8000e-004		0.3347
Total	**9.9255**	**1.3100e-003**	**0.1473**	**1.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**		**0.3127**	**0.3127**	**8.8000e-004**		**0.3347**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation