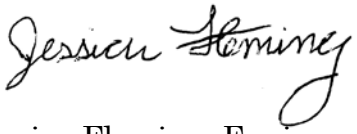
Air Quality Analysis for the Eastlake Behavioral Health Hospital Project
Chula Vista, California

Prepared for
Acadia Healthcare
6100 Tower Circle #1000
Franklin, TN 37067

Prepared by
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108
P 619.308.9333

RECON Number 9434
September 15, 2020



Jessica Fleming, Environmental Analyst

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Acronyms and Abbreviations

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
AMSL	above mean sea level
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Chula Vista
CO	carbon monoxide
DPM	diesel particulate matter
GDP	General Development Plan
HQ	Hazard Quotient
LLG	Linscott, Law & Greenspan
mg/kg/d	milligram/kilogram/day
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PM_{10}	particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$	particulate matter with an aerodynamic diameter of 2.5 microns or less
ppb	parts per billion
ppm	parts per million
project	Eastlake Behavioral Health Hospital
RAQS	Regional Air Quality Strategy
REL	Reference Exposure Level
ROG	reactive organic gas
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
SIP	State Implementation Plan
SO_2	sulfur dioxide
SOx	oxides of sulfur
SPA	Sectional Planning Area
TACs	toxic air contaminants
TCM	Transportation Control Measures
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
VOC	volatile organic compounds

Executive Summary

This report evaluates potential local and regional air quality impacts associated with the proposed Eastlake Behavioral Health Hospital Project (project) located at 830 and 831 Showroom Place in the city of Chula Vista, California. The project would construct a 120-bed behavioral health facility in a 92,349-square-foot building with exterior activity areas and a staff outdoor area.

The primary goal of the San Diego Air Pollution Control District's Regional Air Quality Strategy (RAQS) is to reduce ozone precursor emissions. The project site is within the approved EastLake Business Center II Sectional Planning Area (SPA) plan which is part of larger EastLake II General Development Plan (GDP). The project would be consistent with the City's General Plan, Title 19 – Planning and Zoning of the City's Municipal Code, and the Eastlake II SPA Plan, Planned Community District regulations. Thus, the project would be consistent with the growth projections anticipated by SANDAG. Additionally, project emissions from construction and operation would be less than the applicable thresholds for all criteria pollutants. The project would, therefore, not result in an increase in emissions that are not already accounted for in the RAQS. Thus, the project would not obstruct or conflict with implementation of the RAQS. Impacts would be considered less than significant.

Additionally, as calculated in this analysis, project construction emissions would not exceed the applicable emissions thresholds. These thresholds are designed to provide limits below which project emissions would not significantly change regional air quality. Therefore, as project emissions would be well below these limits, project construction would not result in regional emissions that would exceed the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) or contribute to existing violations. Additionally, construction emissions would be temporary, intermittent, and would cease at the end of project construction. Therefore, project construction would result in a less than significant impact in regards to air quality standards.

Long-term emissions of regional air pollutants occur from operational sources. Based on emissions estimates, project operational emissions would not exceed the applicable regional emissions thresholds. Therefore, as project emissions would be well below these limits, project operations would not result in regional emissions that would exceed the NAAQS or CAAQS or contribute to existing violations. Therefore, the project operation would result in a less than significant impact in regards to air quality standards.

To assess the potential impacts to sensitive receptors, screening methods were used to evaluate localized carbon monoxide (CO) and diesel particulate matter (DPM) impacts. As the project would not result in a CO hot spot, impacts due to localized CO concentrations would be less than significant. Sensitive receptors would be exposed to concentrations of DPM due to construction exhaust emissions. However, as calculated in this analysis, DPM generated by project construction is not expected to create conditions where the probability is greater than 10 in 1 million of contracting cancer. Additionally, the Hazard Quotient

would be less than one. Therefore, no non-cancer risks are expected and all health risks are considered less than significant.

The project does not include heavy industrial or agricultural uses that are typically associated with objectionable odors. The project would involve the use of diesel-powered equipment during construction. Diesel exhaust may occasionally be noticeable at adjacent properties; however, construction activities would be temporary and the odors would dissipate quickly in an outdoor environment. Additionally, the California Air Resources Board's In-Use Off-Road Diesel-Fueled Fleets Regulation would reduce construction exhaust emissions, which would also reduce construction-related odors. Therefore, this impact would be less than significant.

1.0 Introduction

The purpose of this report is to assess potential short-term and long-term local and regional air quality impacts resulting from development of the proposed Eastlake Behavioral Health Hospital Project (project).

Air pollution affects all southern Californians. Effects can include increased respiratory infections, increased discomfort, missed days from work and school, and increased mortality. Polluted air also damages agriculture and our natural environment.

The state of California is divided geographically into 15 air basins for managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. The project site is located within the San Diego Air Basin (SDAB). The SDAB is currently classified as a federal non-attainment area for ozone, and a state non-attainment area for particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and ozone.

Air quality impacts can result from the construction and operation of the project. Construction impacts are short term and result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries. Operational impacts can occur on two levels: regional impacts resulting from growth-inducing development, or local hot-spot effects stemming from sensitive receivers being placed close to highly congested roadways. In the case of this project, operational impacts would be primarily due to emissions to the basin from mobile sources associated with vehicular travel along the roadways within the project area.

The analysis of impacts is based on federal and state Ambient Air Quality Standards (AAQS) and is assessed in accordance with the guidelines, policies, and standards established by the San Diego Air Pollution Control District (SDAPCD) and the City of Chula Vista (City). Project compatibility with the adopted air quality plan for the area is also assessed. Measures are recommended, as required, to reduce potentially significant impacts.

2.0 Project Description

The project is located at 830 and 831 Showroom Place in the city of Chula Vista, California, north Fenton Street, west of Hunte Parkway, and east of Lane Avenue. The project site is a previously graded pad in the EastLake Business Center and is bounded by single-family residential uses to the north and southeast, commercial uses to the west and south, and a boat and recreational vehicle storage lot to the south. The approximately 10.4-acre project site is currently undeveloped. Figure 1 shows the regional location of the project. Figure 2 shows an aerial photograph of the project and vicinity.

The project would construct a 120-bed behavioral health facility in a 92,349-square-foot building with exterior activity areas and a staff outdoor area. Figure 3 shows the proposed site plan.

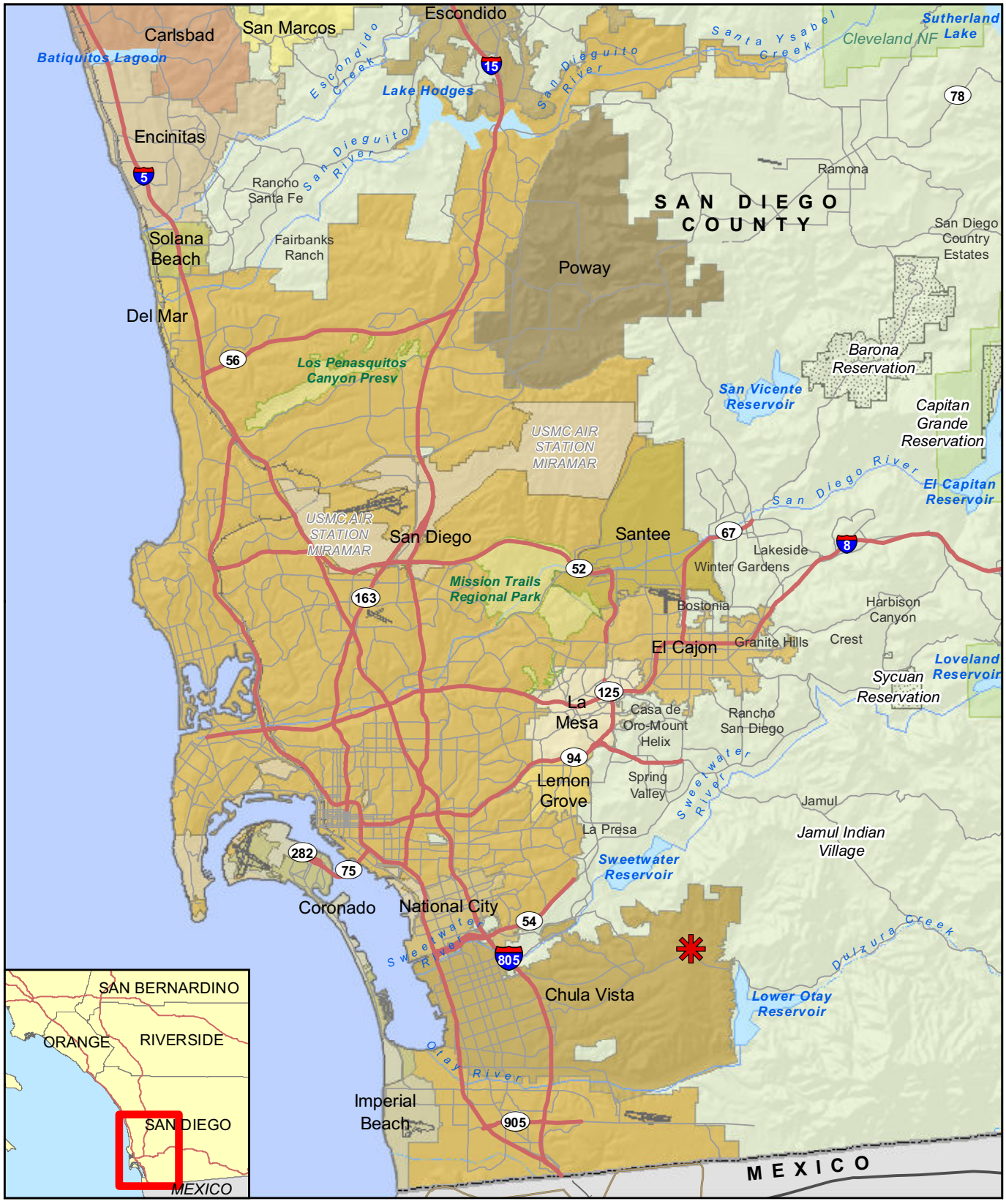

FIGURE 1
Regional Location

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Image Source: Nearmap (Flown February 2019)

Project Boundary

FIGURE 2

Project Location on Aerial Photograph

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Map Source: SWA Architects

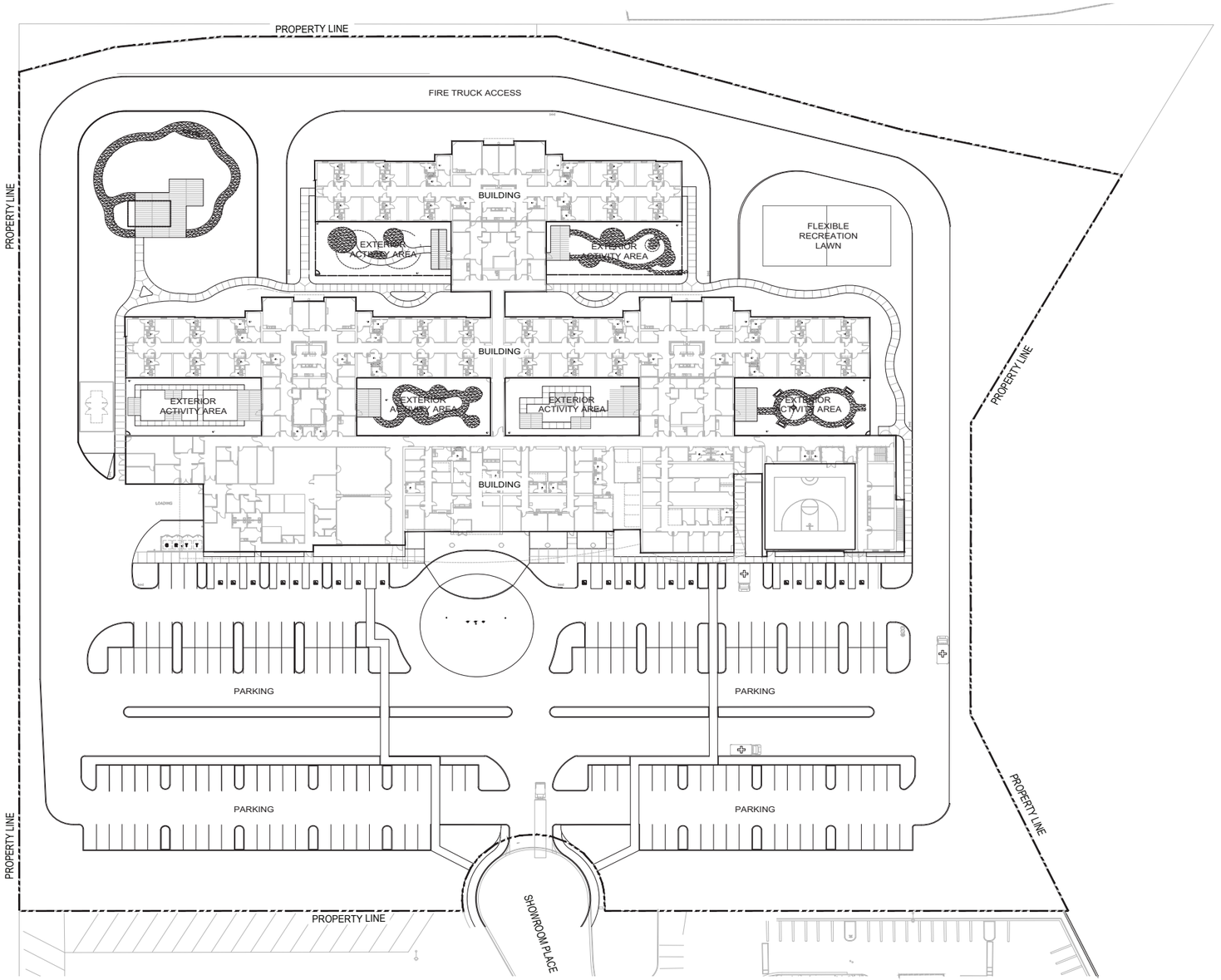

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FIGURE 3
Site Plan

3.0 Regulatory Framework

3.1 Federal Regulations

AAQS represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The federal Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 [42 United States Code (USC) 7401] for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, in order to achieve the purposes of Section 109 of the CAA [42 USC 7409], the U.S. Environmental Protection Agency (U.S. EPA) developed primary and secondary National Ambient Air Quality Standards (NAAQS).

Six criteria pollutants of primary concern have been designated: ozone, carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and respirable particulate matter (PM_{10} and $PM_{2.5}$). The primary NAAQS ". . . in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health . . . " and the secondary standards ". . . protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" [42 USC 7409(b)(2)]. The primary NAAQS were established, with a margin of safety, considering long-term exposure for the most sensitive groups in the general population (i.e., children, senior citizens, and people with breathing difficulties). The NAAQS are presented in Table 1 (California Air Resources Board [CARB] 2016).

An air basin is designated as either attainment or non-attainment for a particular pollutant. Once a non-attainment area has achieved the AAQS for a particular pollutant, it is re-designated as an attainment area for that pollutant. To be redesignated, the area must meet air quality standards for three consecutive years. After re-designation to attainment, the area is known as a maintenance area and must develop a 10-year plan for continuing to meet and maintain air quality standards, as well as satisfy other requirements of the federal CAA. The SDAB is a non-attainment area for the federal ozone standard.

Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-dispersive Infrared Photometry	35 ppm (40 mg/m³)	–	Non-dispersive Infrared Photometry
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	–	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m³)	–	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3 Hour	–		–	0.5 ppm (1,300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[11]	–	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	–		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chroma-tography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chroma-tography			

See footnotes on next page.

Table 1
Ambient Air Quality Standards

ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; – = not applicable.

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent measurement method which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

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

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

[7] Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

[8] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standards of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[10] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of ppb. California standards are in units of ppm. To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[11] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] The Air Resources Board has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[13] The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[14] In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

SOURCE: CARB 2016.

3.2 State Regulations

3.2.1 Criteria Pollutants

The CARB has developed the California Ambient Air Quality Standards (CAAQS) and generally has set more stringent limits on the criteria pollutants than the NAAQS (see Table 1). In addition to the federal criteria pollutants, the CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride (see Table 1).

Similar to the federal CAA, the state classifies as either “attainment” or “non-attainment” areas for each pollutant based on the comparison of measured data with the CAAQS. The SDAB is a non-attainment area for the state ozone standards, the state PM_{10} standard, and the state $PM_{2.5}$ standard.

3.2.2 Toxic Air Contaminants

The public’s exposure to toxic air contaminants (TACs) is a significant public health issue in California. Diesel-exhaust particulate matter emissions have been established as TACs. The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act requires stationary sources to report the types and quantities of certain substances routinely released into the air.

The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels.

The Children’s Environmental Health Protection Act, California Senate Bill 25 focuses on children’s exposure to air pollutants. The act requires CARB to review its air quality standards from a children’s health perspective, evaluate the statewide air monitoring network, and develop any additional air toxic control measures needed to protect children’s health. Locally, toxic air pollutants are regulated through the SDAPCD’s Regulation XII. Of particular concern statewide are diesel-exhaust particulate matter emissions. Diesel-exhaust particulate matter was established as a TAC in 1998, and is estimated to represent a majority of the cancer risk from TACs statewide (based on the statewide average). Diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB and are listed as carcinogens either under the state's Proposition 65 or under the federal Hazardous Air Pollutants program.

Following the identification of diesel particulate matter (DPM) as a TAC in 1998, CARB has worked on developing strategies and regulations aimed at reducing the risk from DPM. The overall strategy for achieving these reductions is found in the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (CARB

2000). A stated goal of the plan is to reduce the statewide cancer risk arising from exposure to DPM by 85 percent by 2020.

In April 2005, CARB published the Air Quality and Land Use Handbook: A Community Health Perspective (CARB 2005). The handbook makes recommendations directed at protecting sensitive land uses from air pollutant emissions while balancing a myriad of other land use issues (e.g., housing, transportation needs, economics, etc.). It notes that the handbook is not regulatory or binding on local agencies and recognizes that application takes a qualitative approach. As reflected in the CARB handbook, there is currently no adopted standard for the significance of health effects from mobile sources. Therefore, the CARB has provided guidelines for the siting of land uses near heavily traveled roadways. Of pertinence to this study, the CARB guidelines indicate that siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 or more vehicles per day should be avoided when possible.

As an ongoing process, CARB will continue to establish new programs and regulations for the control of diesel particulate and other air-toxics emissions as appropriate. The continued development and implementation of these programs and policies will ensure that the public's exposure to DPM will continue to decline.

3.2.3 State Implementation Plan

The State Implementation Plan (SIP) is a collection of documents that set forth the state's strategies for achieving the NAAQS. In California, the SIP is a compilation of new and previously submitted plans, programs (such as air quality management plans, monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. The CARB is the lead agency for all purposes related to the SIP under state law. Local air districts and other agencies, such as the Department of Pesticide Regulation and the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. The CARB then forwards SIP revisions to the U.S. EPA for approval and publication in the *Federal Register*. All of the items included in the California SIP are listed in the Code of Federal Regulations (CFR) at 40 CFR 52.220.

The SDAPCD is responsible for preparing and implementing the portion of the SIP applicable to the SDAB. The SIPs for San Diego County specifically include the Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County (2012), and the 2004 Revision to the California State Implementation Plan for Carbon Monoxide – Updated Maintenance Plan for Ten Federal Planning Areas.

3.2.4 The California Environmental Quality Act

Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines requires discussion of any inconsistencies between the project and applicable general plans and regional plans, including the applicable air quality attainment or maintenance plan (or SIP).

3.3 Local Regulations

3.3.1 San Diego Air Pollution Control District

The SDAPCD is the agency that regulates air quality in the SDAB. The SDAPCD prepared the Regional Air Quality Standards (RAQS) in response to the requirements set forth in the California CAA Assembly Bill (AB) 2595 (SDAPCD 1992, 2016) and the federal CAA. Motor vehicles are San Diego County's leading source of air pollution (SDAPCD 2016). In addition to these sources, other mobile sources include construction equipment, trains, and airplanes. Reducing mobile source emissions requires the technological improvement of existing mobile sources and the examination of future mobile sources, such as those associated with new or modification projects (e.g., retrofitting older vehicles with cleaner emission technologies). In addition to mobile sources, stationary sources also contribute to air pollution in the SDAB. Stationary sources include gasoline stations, power plants, dry cleaners, and other commercial and industrial uses. Stationary sources of air pollution are regulated by the local air pollution control or management district, in this case the SDAPCD.

The SDAPCD is responsible for preparing and implementing the RAQS. As part of the RAQS, the SDAPCD developed Transportation Control Measures (TCMs) for the air quality plan prepared by the San Diego Association of Governments (SANDAG) in accordance with AB 2595 and adopted by SANDAG on March 27, 1992, as Resolution Number 92-49 and Addendum. The RAQS and TCM set forth the steps needed to accomplish attainment of NAAQS and CAAQS. The required triennial updates of the RAQS and corresponding TCM were adopted in 1995, 1998, 2001, 2004, 2009, and 2016. The SDAPCD published a workshop draft of the 2020 RAQS in July 2020 and has solicited feedback through public meetings.

The SDAPCD has also established a set of rules and regulations initially adopted on January 1, 1969, and periodically reviewed and updated. These rules and regulations are available for review on the agency's website.

3.3.2 City of Chula Vista General Plan

The City of Chula Vista General Plan includes various policies related to improving air quality (both directly and indirectly). Applicable policies include the following:

Objective E 6

Improve local air quality and reduce greenhouse gas emissions by minimizing the release of air pollutants and toxic air contaminants and limiting the exposure of people to such pollutants.

Policies

E 6.1: Encourage compact development featuring a mix of uses that locate residential areas within reasonable walking distance to jobs, services, and transit.

E 6.2: Promote and facilitate transit system improvements in order to increase transit use and reduce dependency on the automobile.

E 6.3: Facilitate the use of alternative fuel and low- and zero-emission vehicles and equipment in the community.

E 6.4: Do not site new or re-powered fossil-fueled baseload or peaking-type Electric Generating Facilities and other major toxic emitters within 1,000 feet of sensitive receptors, or site sensitive receptors within 1,000 feet of such facilities.

E 6.5: Ensure Electrical Generating Facilities incorporate cleaner fuel sources and least polluting technologies in order to help transition the City to a less fossil fuel-dependent future, while meeting Chula Vista's energy demand.

E 6.6: Explore incentives to promote voluntary air pollutant reductions, including incentives for developers who go above and beyond applicable requirements and for facilities and operations that are not otherwise regulated.

E 6.7: Encourage innovative energy conservation practices and air quality improvements in new development and redevelopment projects consistent with the City's Air Quality Improvement Plan Guidelines or its equivalent, pursuant to the City's Growth Management Program.

E 6.8: Encourage climate resilient design techniques in new buildings and infrastructure to reduce future risks from climate change-related impacts such as wildfires, extreme heat, and flooding

E 6.9: Discourage the use of landscaping equipment powered by two-stroke gasoline engines within the City and promote less-polluting alternatives to their use.

E 6.10: The siting of new sensitive receivers within 500 feet of highways resulting from development or redevelopment projects shall require the preparation of a health risk assessment as part of the CEQA review of the project. Attendant health risks identified in the Health Risk Assessment shall be feasibly mitigated to the maximum extent practicable, in accordance with CEQA, in order to help ensure that applicable federal and state standards are not exceeded.

E 6.11: Develop strategies to minimize CO hot spots that address all modes of transportation.

E 6.12: Promote clean fuel sources that help reduce the exposure of sensitive uses to pollutants.

E 6.13: Encourage programs and infrastructure to increase the availability and usage of energy-efficient vehicles, such as hybrid electric vehicles, electric vehicles, or those that run on alternative fuels.

E 6.14: Transition the City fleet to 100% "clean" vehicles by integrating hybrid and alternative fuel vehicles as current municipal fleet vehicles are replaced

E 6.15: Site industries: and other stationary emitters in a way that minimizes the potential impacts of poor air quality on homes, schools, hospitals, and other land uses where people congregate, and disadvantaged populations.

E 6.16: Encourage the use of bicycles through support of bike share opportunities, community bike programs, and the provision of bicycle parking opportunities such as bike racks and bike lockers.

4.0 Environmental Setting

4.1 Geographic Setting

The project is located in the city of Chula Vista, approximately 10 miles east of the Pacific Ocean. The project site is located on a parcel of land that has been previously graded. The project site is bounded by single-family residential uses to the north and southeast, commercial uses to the west and south, and a boat and recreational vehicle storage lot to the south. Circulation Element roadways in the vicinity of the project site include Hunte Parkway to the east and Otay Lakes Road to the south. Elevations on the project site range from 696 to 722 above mean sea level (AMSL). The SDAB is surrounded by mountains to the north, east, and south. These mountains tend to restrict airflow and concentrate pollutants in the valleys and low-lying areas below.

4.2 Climate

The project area, like the rest of San Diego County, has a Mediterranean climate characterized by warm, dry summers and mild winters. The mean annual temperature for the project area is 62 degrees Fahrenheit (°F). The average annual precipitation is 12 inches, falling primarily from November to April. Winter low temperatures in the project area average about 41°F, and summer high temperatures average about 78°F. The average relative humidity is 69 percent and is based on the yearly average humidity at Lindbergh Field (Western Regional Climate Center 2020).

The dominant meteorological feature affecting the region is the Pacific High Pressure Zone, which produces the prevailing westerly to northwesterly winds. Fluctuations in the strength and pattern of winds from the Pacific High Pressure Zone creates a temperature inversion layer (a layer in the atmosphere in which temperature increases with height) that acts as a lid to the vertical dispersion. Sunlight reacts with air pollutants (ROG and NOx) to create ozone. Thus, poorly dispersed pollutants along with strong sunlight results in the

creation of ozone at this surface layer. As pollutants are carried inland by prevailing winds, they frequently become "trapped" against the mountain slopes by a temperature inversion layer as their ability to disperse diminishes. Throughout the year, the height of the temperature inversion in the afternoon varies between approximately 1,500 and 2,500 feet AMSL (SDAPCD 2019).

The prevailing westerly wind pattern is sometimes interrupted by regional "Santa Ana" conditions. A Santa Ana occurs when a strong high pressure develops over the Nevada-Utah area and overcomes the prevailing westerly coastal winds, sending strong, steady, hot, dry northeasterly winds over the mountains and out to sea.

Strong Santa Anas tend to blow pollutants out over the ocean, producing clear days. However, at the onset or during breakdown of these conditions, or if the Santa Ana is weak, local air quality may be adversely affected. In these cases, emissions from the South Coast Air Basin to the north are blown out over the ocean, and low pressure over Baja California draws this pollutant-laden air mass southward. As the high pressure weakens, prevailing northwesterly winds reassert themselves and send this cloud of contamination ashore in the SDAB. When this event does occur, the combination of transported and locally produced contaminants produce the worst air quality measurements recorded in the basin.

4.3 Existing Air Quality

Air quality at a particular location is a function of the kinds, amounts, and dispersal rates of pollutants being emitted into the air locally and throughout the basin. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the CARB or federal standards set by the U.S. EPA. The SDAPCD maintains nine air quality monitoring stations located throughout the greater San Diego metropolitan region. Air pollutant concentrations and meteorological information are continuously recorded at these stations. Measurements are then used by scientists to help forecast daily air pollution levels.

The Chula Vista monitoring station located at 80 East J Street, approximately 6 miles west of the project site, is the nearest station to the project site. The monitoring station measures ozone, NO_2, PM_{10}, and $PM_{2.5}$. Table 2 provides a summary of measurements collected at the monitoring station for the years 2014 through 2018.

Table 2
Summary of Air Quality Measurements Recorded at the Chula Vista Air Quality Monitoring Station

Pollutant/Standard	2014	2015	2016	2017	2018
Ozone					
Federal Max 8-hr (ppm)	0.072	0.066	0.068	0.074	0.064
Days 2015 Federal 8-hour Standard Exceeded (0.07 ppm)	1	0	0	1	0
Days 2008 Federal 8-hour Standard Exceeded (0.075 ppm)	0	0	0	0	0
State Max 8-hr (ppm)	0.072	0.067	0.069	0.075	0.065
Days State 8-hour Standard Exceeded (0.07 ppm)	1	0	0	1	0
Max. 1-hr (ppm)	0.093	0.088	0.073	0.085	0.076
Days State 1-hour Standard Exceeded (0.09 ppm)	0	0	0	0	0
Nitrogen Dioxide					
Max 1-hr (ppm)	0.055	0.049	0.054	0.057	0.052
Days State 1-hour Standard Exceeded (0.18 ppm)	0	0	0	0	0
Days Federal 1-hour Standard Exceeded (0.100 ppm)	0	0	0	0	0
Annual Average (ppm)	0.011	0.010	0.009	--	0.009
PM_{10}*					
Federal Max. Daily ($\mu g/m^3$)	38.0	46.0	48.0	59.0	45.0
Measured Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	0	0	0	0	0
Calculated Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	0.0	0.0	0.0	0.0	0.0
Federal Annual Average ($\mu g/m^3$)	22.9	19.7	21.6	21.4	20.7
State Max. Daily ($\mu g/m^3$)	39.0	45.0	48.0	61.0	45.0
Measured Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	0	0	0	1	0
Calculated Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	0.0	0.0	0.0	6.5	--
State Annual Average ($\mu g/m^3$)	23.4	19.8	21.8	21.7	--
$PM_{2.5}$*					
Federal Max. Daily ($\mu g/m^3$)	26.5	33.5	23.9	42.7	41.9
Measured Days Federal 24-hour Standard Exceeded (35 $\mu g/m^3$)	0	0	0	1	1
Calculated Days Federal 24-hour Standard Exceeded (35 $\mu g/m^3$)	0.0	0.0	0.0	--	2.7
Federal Annual Average ($\mu g/m^3$)	9.2	8.3	8.7	--	9.9
State Max. Daily ($\mu g/m^3$)	26.5	33.5	23.9	42.7	41.9
State Annual Average ($\mu g/m^3$)	9.3	8.4	8.7	--	10.0

SOURCE: CARB 2020.
ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; -- = Not available.
* Calculated days value. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

4.3.1 Ozone

Nitrogen oxides and hydrocarbons (reactive organic gases [ROG]) are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone, which is the primary air pollution problem in the SDAB. Because sunlight plays such an important role in its formation, ozone pollution—or smog—is mainly a concern during the daytime in summer months. The SDAB is currently designated a federal and state non-attainment area for ozone. During the past two decades, San Diego had experienced a decline in ozone levels due to emission control efforts, despite the region's growth in population and vehicle miles traveled (SDAPCD 2016).

About half of smog-forming emissions come from automobiles. Population growth in San Diego has resulted in a large increase in the number of automobiles expelling ozone-forming pollutants while operating on area roadways. In addition, the occasional transport

of smog-filled air from the South Coast Air Basin only adds to the SDAB's ozone problem. Stricter automobile emission controls, including more efficient automobile engines, have played a large role in why ozone levels have steadily decreased.

In order to address adverse health effects due to prolonged exposure, the U.S. EPA phased out the national 1-hour ozone standard and replaced it with the more protective 8-hour ozone standard. The SDAB is currently a non-attainment area for the previous (1997) national 8-hour standard, and is recommended as a non-attainment area for the revised (2008) national 8-hour standard of 0.075 parts per million (ppm).

Not all of the ozone within the SDAB is derived from local sources. Under certain meteorological conditions, such as during Santa Ana wind events, ozone and other pollutants are transported from the Los Angeles Basin and combine with ozone formed from local emission sources to produce elevated ozone levels in the SDAB.

Local agencies can control neither the source nor the transportation of pollutants from outside the air basin. The SDAPCD's policy, therefore, has been to control local sources effectively enough to reduce locally produced contamination to clean air standards. Through the use of air pollution control measures outlined in the RAQS, the SDAPCD has effectively reduced ozone levels in the SDAB.

Actions that have been taken in the SDAB to reduce ozone concentrations include:

- **TCMs if vehicle travel and emissions exceed attainment demonstration levels.** TCMs are strategies that will reduce transportation-related emissions by reducing vehicle use or improving traffic flow.

- **Enhanced motor vehicle inspection and maintenance program.** The smog check program is overseen by the Bureau of Automotive Repair. The program requires most vehicles to pass a smog test once every two years before registering in the state of California. The smog check program monitors the amount of pollutants automobiles produce. One focus of the program is identifying "gross polluters," or vehicles that exceed two times the allowable emissions for a particular model. Regular maintenance and tune-ups, changing the oil, and checking tire inflation can improve gas mileage and lower air pollutant emissions. It can also reduce traffic congestion due to preventable breakdowns, further lowering emissions.

- **Air Quality Improvement Program.** This program, established by AB 118, is a voluntary incentive program administered by the CARB to fund clean vehicle and equipment projects, research on biofuels production and the air quality impacts of alternative fuels, and workforce training.

4.3.2 Carbon Monoxide

The SDAB is classified as a state attainment area and as a federal maintenance area for CO. Until 2003, no violations of the state standard for CO had been recorded in the SDAB since 1991, and no violations of the national standard had been recorded in the SDAB since

1989. The violations that took place in 2003 were likely the result of massive wildfires that occurred throughout the county. No violations of the state or federal CO standards have occurred since 2003.

Small-scale, localized concentrations of CO above the state and national standards have the potential to occur at intersections with stagnation points such as those that occur on major highways and heavily traveled and congested roadways. Localized high concentrations of CO are referred to as "CO hot spots" and are a concern at congested intersections, where automobile engines burn fuel less efficiently and their exhaust contains more CO.

4.3.3 Particulate Matter

Particulate matter is a complex mixture of microscopic solid or liquid particles including chemicals, soot, and dust. Anthropogenic sources of direct particulate emissions include crushing or grinding operations, dust stirred up by vehicle traffic, and combustion sources such as motor vehicles, power plants, wood burning, forest fires, agricultural burning and industrial processes. Additionally, indirect emissions may be formed when aerosols react with compounds found in the atmosphere.

Health studies have shown a significant association between exposure to particulate matter and premature death in people with heart or lung diseases. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and irregular heartbeat (U.S. EPA 2016).

As its properties vary based on the size of suspended particles, particulate matter is generally categorized as particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) or particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$).

4.3.3.1 PM_{10}

PM_{10}, occasionally referred to as "inhalable coarse particles" has an aerodynamic diameter of about one-seventh of the diameter of a human hair. High concentrations of PM_{10} are often found near roadways, construction, mining, or agricultural operations.

4.3.3.2 $PM_{2.5}$

$PM_{2.5}$, occasionally referred to as "inhalable fine particles" has an aerodynamic diameter of about one-thirtieth of the diameter of a human hair. $PM_{2.5}$ is the main cause of haze in many parts of the United States. Federal standards applicable to $PM_{2.5}$ were first adopted in 1997.

4.3.4 Other Criteria Pollutants

The national and state standards for NO_2, oxides of sulfur (SO_X), and the previous standard for lead are being met in the SDAB, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future. As discussed above, new standards

for these pollutants have been adopted, and new designations for the SDAB will be determined in the future. The SDAB is also in attainment of the state standards for vinyl chloride, hydrogen sulfides, sulfates, and visibility-reducing particulates.

5.0 Thresholds of Significance

Thresholds used to evaluate potential impacts to air quality are based on applicable criteria in the CEQA Guidelines Appendix G. The project would have a significant air quality impact if it would:

1. Conflict with or obstruct the implementation of the applicable air quality plan;
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 project region is nonattainment under an applicable federal or state AAQS (including the release of emissions which exceed quantitative thresholds for ozone precursors);
4. Expose sensitive receptors to substantial pollutant concentration (including air toxics); or
5. Create objectionable odors affecting a substantial number of people.

Emissions resulting from implementation of the project would be due primarily to construction-generated emissions and traffic associated with daily operation. The City of Chula Vista evaluates project emissions based on the quantitative emission thresholds established by the South Coast Air Quality Management District (SCAQMD). The SCAQMD sets forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality. It should be noted that the use of these significance thresholds is conservative, as the SCAQMD's significance thresholds were originally based on the SCAB extreme ozone nonattainment status for the 1-hour NAAQS, whereas the SDAB was designated as an attainment area for the 1-hour NAAQS. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 3, City of Chula Vista Air Quality Significance Thresholds, are exceeded.

Table 3
Chula Vista Air Quality Significance Thresholds

Pollutant	Construction (pounds per day)	Operation (pounds per day)
NO_x	100	55
VOC	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150
CO	550	550
Lead	3	3

SOURCE: SCAQMD 1993, 2006.

In addition to a comparison with the quantitative thresholds for regional emissions in Table 3, the project was evaluated for local air quality impacts, such as whether concentrations of carbon monoxide would exceed the NAAQS or CAAQS, consistency with assumptions of the SDAPCD RAQS, and potential odors impacts.

6.0 Air Quality Assessment

Construction impacts are short term and result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries. Operational impacts can occur on two levels: regional or local. In the case of this project, operational impacts are primarily due to emissions from mobile sources associated with vehicular travel along the roadways within the project area.

Construction and operation air emissions were calculated using California Emissions Estimator Model (CalEEMod) 2016.3.2 (California Air Pollution Control Officers Association [CAPCOA] 2017). The CalEEMod program is a tool used to estimate air emissions resulting from land development projects based on California-specific emission factors. The model estimates mass emissions from two basics sources: construction sources and operational sources (i.e., area and mobile sources).

Inputs to CalEEMod include such items as the air basin containing the project, land uses, trip generation rates, trip lengths, vehicle fleet mix (percentage of autos, medium truck, etc.), trip destination (i.e., percent of trips from home to work, etc.), duration of construction phases, construction equipment usage, grading areas, season, and ambient temperature, as well as other parameters. The CalEEMod output files contained in Attachment 1 indicate the specific outputs for each model run. Emissions of oxides of nitrogen (NO_X), CO, SO_X, PM_{10}, $PM_{2.5}$, and ROG are calculated. Emission factors are not available for lead, and consequently, lead emissions are not calculated. The SDAB is currently in attainment of the federal and state lead standards. Furthermore, fuel used in construction equipment and most other vehicles is not leaded.

6.1 Construction Emissions

6.1.1 Emission Calculations

Construction-related activities are temporary, short-term sources of air emissions. Sources of construction-related air emissions include:

- Fugitive dust from grading activities;
- Construction equipment exhaust;
- Construction-related trips by workers, delivery trucks, and material-hauling trucks; and
- Construction-related power consumption.

Construction-related pollutants result from dust raised during grading, emissions from construction vehicles, and chemicals used during construction. Fugitive dust emissions vary greatly during construction and are dependent on the amount and type of activity, silt content of the soil, and the weather. Vehicles moving over paved and unpaved surfaces, demolition, excavation, earth movement, grading, and wind erosion from exposed surfaces are all sources of fugitive dust. Construction operations are subject to the requirements established in Regulation 4, Rules 52, 54, and 55, of the SDAPCD's rules and regulations.

Heavy-duty construction equipment is usually diesel powered. In general, emissions from diesel-powered equipment contain more NO_X, SO_X, and particulate matter than gasoline-powered engines. However, diesel-powered engines generally produce less CO and less ROG than do gasoline-powered engines. Standard construction equipment includes tractors/loaders/backhoes, rubber-tired dozers, excavators, graders, cranes, forklifts, rollers, paving equipment, generator sets, welders, cement and mortar mixers, and air compressors.

Construction emissions were modeled with construction activities beginning in 2021 and lasting for approximately 17 months. Primary inputs are the numbers of each piece of equipment and the length of each construction stage. Specific construction phasing and equipment parameters are not available at this time. However, CalEEMod can estimate the required construction equipment when project-specific information is unavailable. The construction equipment estimates are based on surveys, performed by the SCAQMD and the Sacramento Metropolitan Air Quality Management District, of typical construction projects which provide a basis for scaling equipment needs and schedule with a project's size. Air emission estimates in CalEEMod are based on the duration of construction phases; construction equipment type, quantity, and usage; grading area; season; and ambient temperature, among other parameters. Project grading would require the export of approximately 51,000 cubic yards of soil. As the project would include substantial grading and soil export, the assumed duration of the grading phase was increased from 30 to 60 working days.

Table 4 shows the total projected construction maximum daily emission levels for each criteria pollutant. The CalEEMod output files for construction emissions are contained in Attachment 1.

Table 4
Summary of Worst-case Construction Emissions
(pounds per day)

Construction	Pollutant					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	4	41	22	<1	20	12
Grading	5	74	38	<1	12	6
Building Construction/ Architectural Coatings	10	23	22	<1	2	1
Paving	2	11	15	<1	1	1
Maximum Daily Emissions	**10**	**74**	**38**	**<1**	**20**	**12**
Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*

Standard dust control measures would be implemented as a part of project construction in accordance with SDAPCD rules and regulations (Rules 50, 51, 52, 54, and 55) for controlling emissions from fugitive dust and fumes:

- Water the grading areas a minimum of twice daily to minimize fugitive dust.
- Provide sufficient erosion control to prevent washout of silty material onto public roads.
- Cover haul trucks or maintain at least 12 inches of freeboard to reduce blow-off during hauling.
- Periodically sweep up dirt and debris spilled onto paved surfaces to reduce re-suspension of particulate matter caused by vehicle movement. Clean approach routes to construction sites of construction-related dirt.

Fugitive dust emissions were calculated using CalEEMod default values, and did not take into account the required dust control measures. Thus, the emissions shown in Table 4 are conservative. It should also be noted that all construction equipment is subject to the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation. This regulation, which applies to all off-road diesel vehicles 25 horsepower or greater, limits unnecessary idling to 5 minutes, requires all construction fleets to be labeled and reported to CARB, bans Tier 0 equipment and phases out Tier 1 and 2 equipment (thereby replacing fleets with cleaner equipment), and requires that fleets comply with Best Available Control Technology requirements.

As shown in Table 4, maximum daily construction emissions associated with the project are projected to be less than the applicable thresholds for all criteria pollutants.

6.1.2 Toxic Air Contaminants – Diesel Particulate Matter

Construction of the project would result in short-term diesel exhaust emissions from on-site heavy-duty equipment. Project construction would result in the generation of DPM emissions from the use of off-road diesel construction equipment required for site grading and earthmoving, trenching, asphalt paving, and other construction activities. Other construction-related sources of DPM include material delivery trucks and construction worker vehicles; however, these sources are minimal relative to construction equipment. Not all construction worker vehicles would be diesel-fueled and most DPM emissions associated with material delivery trucks and construction worker vehicles would occur off-site.

For purposes of analyzing construction-related TAC emissions and their impact on sensitive receptors, the total PM_{10} emissions from equipment exhaust for the entire project were summed and divided over the total exposure time, i.e., approximately one year, to develop an average daily emission rate. The exhaust emissions were calculated by CalEEMod, and the maximum annual DPM concentration was calculated using AERSCREEN. AERSCREEN calculates a worst-case maximum 1-hour concentration at a specific distance

and specific angle from the source. The maximum 1-hour concentration is then converted to an annual concentration using a 0.08 conversion factor (U.S. EPA 1992).

Once the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The equation for dose through inhalation (Dose-air) is as follows:

Dose-air = (C_{air} x DBR × A × EF × 10^{-6});
Where:

Dose-air	=	Chronic daily intake, mg/kg body weight per day
C_{air}	=	Ground-level concentration of TAC to which the receptor is exposed, micrograms/cubic meter
DBR	=	Daily breathing rate, normalized to body weight (liters per kilogram body weight per day (Office of Environmental Health Hazard Assessment [OEHHA] 2015)
A	=	Inhalation absorption factor (OEHHA recommended factor of 1)
EF	=	Exposure frequency, days/year (OEHHA recommended factor of 0.96 for resident and 0.68 for workers)

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. The excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. The worst-case cancer risk is calculated as follows:

Excess Cancer Risk = Dose-air × CPF × ASF × ED/AT × FAH;
Where:

Dose-air	=	Chronic daily intake, mg/kg body weight per day
CPF	=	Cancer potency factor (mg/kg/d)
ASF	=	Age sensitivity factor
ED	=	Exposure duration (years)
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time at home

Non-cancer risks or risks defined as chronic or acute. With respect to DPM only chronic risks are calculated and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its chronic Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist.

In this analysis, non-carcinogenic impacts are evaluated for chronic exposure inhalation exposure. Estimates of health impacts from non-carcinogenic concentrations are expressed as a hazard quotient (HQ) for individual substances, such as diesel particulate. An HQ of one or less indicates that adverse health effects are not expected to result from exposure to emissions of that substance. RELs are defined as the concentration at which no adverse health effects are anticipated. Generally, the inhalation pathway is the largest contributor to the total dose. The HQ is calculated with the flowing equation:

HQ = Ground-Level Concentration ($\mu g/m^3$)/Reference Exposure Level ($\mu g/m^3$)

Based on the CalEEMod calculations for project construction, the project would result in maximum annual emissions of 0.1097 tons of PM_{10} exhaust. This maximum annual emissions rate was modeled over the entire 17-month construction period. These emissions also include those associated with off-site truck traffic, which would not be located on the project site. This is, therefore, a conservative assessment. Based on AERSCREEN modeling results, the maximum 1-hour ground-level DPM concentration from construction activities would be 0.0648 $\mu g/m^3$. This was converted to an annual average concentration of 0.00519 $\mu g/m^3$ using a conversion factor of 0.08 (U.S. EPA 1992). The resulting annual concentration was used in the equations discussed in detail in Section 3.2.1. Using this methodology, it was calculated that the excess cancer risk would be 1.7 in a million. DPM generated by project construction is not expected to create conditions where the probability is greater than 10 in 1 million of contracting cancer. Additionally, the HQ would be 0.0010, which is less than one. Therefore, no non-cancer risks are expected and all health risks are considered less than significant. AERSCREEN and cancer risk calculations are provided in Attachment 2.

It should also be noted that all construction equipment is subject to the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation. This regulation, which applies to all off-road diesel vehicles 25 horsepower or greater, limits unnecessary idling to 5 minutes, requires all construction fleets to be labeled and reported to CARB, bans Tier 0 equipment and phases out Tier 1 and 2 equipment (thereby replacing fleets with cleaner equipment), and requires that fleets comply with Best Available Control Technology requirements.

6.2 Operation Emissions

Mobile source emissions would originate from traffic generated by the project. Area source emissions would result from the use of natural gas, consumer products, as well as applying architectural coatings and landscaping activities.

Mobile source operational emissions are based on the trip rate, trip length for each land use type, and size. According to the project traffic report, the project would generate 2,400 average daily vehicle trips with an average one-way trip length of 9.6 miles (Linscott, Law & Greenspan [LLG] 2020). Default vehicle emission factors for the first operational year of 2022 were used.

Area source emissions associated with the project include consumer products, natural gas used in space and water heating, architectural coatings, and landscaping equipment. Hearths (fireplaces) and woodstoves are also a source of area emissions; however, the project would not include hearths or woodstoves. Consumer products are chemically formulated products used by household and institutional consumers, including, but not limited to, detergents, cleaning compounds, polishes, floor finishes, disinfectants, sanitizers, and aerosol paints but not including other paint products, furniture coatings, or architectural coatings. Emissions due to consumer products are calculated using total building area and product emission factors. Emissions are generated from the combustion of natural gas used in space and water heating. Emissions are based on the Residential Appliance Saturation Survey which is a comprehensive energy use assessment that includes the end use for various climate zones in California.

For architectural coatings, emissions result from evaporation of solvents contained in surface coatings such as in paints and primers. Emissions are based on the building surface area, architectural coating emission factors, and a reapplication rate of 10 percent of area per year. Landscaping maintenance includes fuel combustion emission from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers as well as air compressors, generators, and pumps. Emission calculations take into account building area, equipment emission factors, and the number of operational days (summer days).

The proposed project would install and operate an 800-kilowatt Caterpillar C27 Generator Set emergency generator; specifications are included as Attachment 3. As discussed in the operation and maintenance manual, the service life and field reliability of the emergency generator is largely dependent on regular maintenance. Maintenance may include run-tests. Emissions due to testing were calculated using default emission factors from CalEEMod, as well as NO_X and CO emission factors from manufacturer source tests assuming testing involves operation at full load for up to 30 minutes of operation per day (see Attachment 3).

Table 5 provides a summary of the operational emissions generated by the project. CalEEMod output files for project operation are contained in Attachment 1. As shown, project-generated emissions are projected to be less than the significance thresholds for all criteria pollutants.

Table 5
Summary of Project Operational Emissions
(pounds per day)

Source	Pollutant					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area Sources	2	<1	<1	<1	<1	<1
Generator[1]	1	7	<1	<1	<1	<1
Energy Sources	<1	1	1	<1	<1	<1
Mobile Sources	4	16	46	<1	14	4
Total	**7**	**25**	**47**	**<1**	**14**	**4**
Significance Threshold	*55*	*55*	*550*	*150*	*150*	*55*

NOTE: Totals may vary due to independent rounding.
[1] Manufacturer source tests emission factors are 6.2 grams per horsepower hour (g/hp-hr) NO_X, and 0.3 g/hp-hr CO.

6.3 Impact Analysis

1. *Conflict with or obstruct the implementation of the applicable air quality plan (San Diego RAQS)?*

The RAQS is the applicable regional air quality plan that sets forth the SDAPCD's strategies for achieving the NAAQS and CAAQS. The SDAB is a designated non-attainment area for the federal and state ozone standard. Accordingly, the RAQS was developed to identify feasible emission control measures and provide expeditious progress toward attaining the standards for ozone. The two pollutants addressed in the RAQS are ROG and oxides of nitrogen (NO_X), which are precursors to the formation of ozone. Projected increases in motor vehicle usage, population, and growth create challenges in controlling emissions and by extension to maintaining and improving air quality. The RAQS, in conjunction with the TCM, were most recently adopted in 2016 as the air quality plan for the region.

The growth projections used by the SDAPCD to develop the RAQS emissions budgets are based on the population, vehicle trends, and land use plans developed in general plans and used by SANDAG in the development of the regional transportation plans and sustainable communities strategy. As such, projects that propose development that is consistent with the growth anticipated by SANDAG's growth projections and/or the general plan would not conflict with the RAQS. In the event that a project would propose development that is less dense than anticipated by the growth projections, the project would likewise be consistent with the RAQS. In the event a project proposes development that is greater than anticipated in the growth projections, further analysis would be warranted to determine if the project would exceed the growth projections used in the RAQS for the specific subregional area.

The project site is within the approved EastLake Business Center II SPA, which is part of the larger EastLake II GDP. The project would be consistent with the City's General Plan, Title 19 – Planning and Zoning of the City's Municipal Code, and the EastLake II SPA Plan, Planned Community District regulations. Thus, the project would be consistent with

the growth projections anticipated by SANDAG. The project would, therefore, not result in an increase in emissions that are not already accounted for in the RAQS. Thus, the project would not obstruct or conflict with implementation of the RAQS. Impacts would be considered less than significant.

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

As shown in Table 4, project construction would not exceed the applicable regional emissions thresholds. These thresholds are designed to provide limits below which project emissions would not significantly change regional air quality. Therefore, as project construction emissions would be below these limits, project construction would not result in regional emissions that would exceed the NAAQS or CAAQS or contribute to existing violations.

Long-term emissions of regional air pollutants occur from operational sources. As shown in Table 5, project operation would not exceed the applicable regional emissions thresholds. Therefore, as project operation emissions would be well below these limits, project operation would not result in regional emissions that would exceed the NAAQS or CAAQS or contribute to existing violations. Therefore, the project would result in a less than significant impact in regards to air quality standards.

3. *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state AAQS (including the release of emissions which exceed quantitative thresholds for ozone precursors)?*

The region is classified as attainment for all criteria pollutants except ozone, PM_{10}, and $PM_{2.5}$. The SDAB is a non-attainment area for the 8-hour federal and state ozone standards, and a non-attainment area for 1-hour state ozone standards. Ozone is not emitted directly, but is a result of atmospheric activity on precursors. NO_X and ROG are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone.

As shown in Tables 4 and 5, emissions of ozone precursors (ROG and NO_X), PM_{10}, and $PM_{2.5}$ from construction and operation would be below the applicable thresholds. Therefore, the project would not generate emissions in quantities that would result in an exceedance of the NAQQS or CAAQS for ozone, PM_{10}, or $PM_{2.5}$, and impacts would be less than significant.

4. *Would the project expose sensitive receptors to substantial pollutant concentration including air toxics such as diesel particulates?*

Sensitive land uses include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities. Single-family residential uses are located north and southeast of the project site. Additionally, Eastlake Middle School, an assisted living facility, and a recreation center are located east of Hunte Parkway.

Diesel Particulate Matter – Construction

Construction of the project and associated infrastructure would result in short-term diesel exhaust emissions from on-site heavy-duty equipment. Construction of the project would result in the generation of diesel-exhaust DPM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities and on-road diesel equipment used to bring materials to and from the project site. As discussed in Section 6.1.2, DPM generated by project construction is not expected to create conditions where the probability is greater than 10 in 1 million of contracting cancer. Additionally, the HQ would be 0.0010, which is less than one. Therefore, no non-cancer risks are expected and all health risks are considered less than significant.

Additionally, with ongoing implementation of U.S. EPA and CARB requirements for cleaner fuels; off-road diesel engine retrofits; and new, low-emission diesel engine types, the DPM emissions of individual equipment would be substantially reduced over the years as the project construction continues. As discussed previously, all construction equipment is subject to the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation, which limits unnecessary idling to 5 minutes, requires all construction fleets to be labeled and reported to CARB, bans Tier 0 equipment and phases out Tier 1 and 2 equipment (thereby replacing fleets with cleaner equipment), and requires that fleets comply with Best Available Control Technology requirements. Therefore, project construction would not expose sensitive receptors to substantial pollutant concentration.

Diesel Particulate Matter – Freeway and Heavily Traveled Roadways

As discussed in Section 3.2.2, the CARB handbook indicates that siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 or more vehicles per day should be avoided when possible. The nearest freeway is located almost one mile west of the project site. The project site is not located within 500 feet of any heavily traveled roadways that carry more than 100,000 vehicles per day.

Carbon Monoxide Hot Spots

Localized CO concentration is a direct function of motor vehicle activity at signalized intersections (e.g., idling time and traffic flow conditions), particularly during peak commute hours and meteorological conditions. The SDAB is a CO maintenance area under the federal CAA. This means that SDAB was previously a non-attainment area and is currently implementing a 10-year plan for continuing to meet and maintain air quality standards.

Due to increased requirements for cleaner vehicles, equipment, and fuels, CO levels in the state have dropped substantially. All air basins are attainment or maintenance areas for CO. Therefore, more recent screening procedures based on more current methodologies have been developed. The Sacramento Metropolitan Air Quality Management District developed a screening threshold in 2011, which states that any project involving an intersection experiencing 31,600 vehicles per hour or more will require detailed analysis. In addition, the Bay Area Air Quality Management District developed a screening threshold in 2010 which states that any project involving an intersection experiencing 44,000 vehicles

per hour would require detailed analysis. This analysis conservatively assesses potential CO hot spots using the Sacramento Metropolitan Air Quality Management District screening threshold of 31,600 vehicles per hour.

Based on the Transportation Impact Analysis prepared for the project, the traffic volumes at all analyzed intersections would be significantly less than 31,600 vehicles per hour (LLG 2020). Therefore, the project is not anticipated to result in a CO hot spot.

5. Would the project create objectionable odors affecting a substantial number of people?

The project does not include heavy industrial or agricultural uses that are typically associated with odor complaints. During construction, diesel equipment may generate some nuisance odors. Single-family residential uses are located north and southeast of the project site; however, exposure to odors associated with project construction would be short term and temporary in nature. Additionally, CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation outlined above would reduce construction exhaust emissions, which would also reduce construction-related odors. Impacts would be less than significant. Once operational, the project would not be a source of odors.

7.0 Conclusions

The primary goal of the RAQS is to reduce ozone precursor emissions. The project would be consistent with the City's General Plan, Title 19 – Planning and Zoning of the City's Municipal Code, and the EastLake II SPA Plan, Planned Community District regulations. Thus, the project would be consistent with the growth projections anticipated by SANDAG. Additionally, project emissions from construction and operation would be less than the applicable thresholds for all criteria pollutants. The project would, therefore, not result in an increase in emissions that are not already accounted for in the RAQS. Thus, the project would not obstruct or conflict with implementation of the RAQS. Impacts would be considered less than significant.

As shown in Table 4, project construction emissions would not exceed the applicable regional emissions thresholds. These thresholds are designed to provide limits below which project emissions would not significantly change regional air quality. Therefore, as project emissions would be well below these limits, project construction would not result in regional emissions that would exceed the NAAQS or CAAQS or contribute to existing violations. Additionally, construction emissions would be temporary, intermittent, and would cease at the end of project construction.

Long-term emissions of regional air pollutants occur from operational sources. As shown in Table 5, project operational emissions would not exceed the applicable regional emissions thresholds. Therefore, as project emissions would be well below these limits, project operations would not result in regional emissions that would exceed the NAAQS or CAAQS or contribute to existing violations.

To assess the potential impacts to sensitive receptors, screening methods were used to evaluate localized CO and DPM impacts. As the project would not result in a CO hot spot, impacts due to localized CO concentrations would be less than significant. Sensitive receptors would be exposed to concentrations of DPM due to construction exhaust emissions. However, as calculated in this analysis, DPM generated by project construction is not expected to create conditions where the probability is greater than 10 in 1 million of contracting cancer. Additionally, the HQ would be less than one. Therefore, no non-cancer risks are expected and all health risks are considered less than significant.

The project does not include heavy industrial or agricultural uses that are typically associated with objectionable odors. The project would involve the use of diesel-powered construction equipment. Diesel exhaust may be noticeable temporarily at adjacent properties; however, construction activities would be temporary. Additionally, CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation would reduce construction exhaust emissions, which would also reduce construction-related odors. Impacts would be less than significant. Once operational, the project would not be a source of odors.

8.0 References Cited

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ATTACHMENTS

ATTACHMENT 1

CalEEMod Output – Project Emissions

9434 Acadia Eastlake Behavioral Health Hospital

San Diego County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	120.00	Bed	6.82	97,050.00	0
Parking Lot	3.60	Acre	3.60	156,816.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	457.3	**CH4 Intensity (lb/MWhr)**	0.018	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy intensity factors updated based on SDG&E renewable procurement
(457.3, 0.018, 0.004)

Land Use - 10.42 acres

Construction Phase - Architectural coatings simultaneous with last half of building construction

Trips and VMT -

Grading -

Architectural Coating - SDAPCD Rule 67.0.1

Vehicle Trips - 20 trips/bed
9.6 mile trip length

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - SDAPCD Rule 67.0.1

Energy Use - Reduced by 30 percent for account for 2019 Energy Code. (6.37 > 4.46; 4.52 > 3.16; 51.05 > 35.74)

Water And Wastewater - CalGreen requires 20% decrease in indoor water use that is not included in model (8,622,109.95 gallons)

Solid Waste - Default Rate (350.4 tons/yr/bed) reduced 50%.

Energy Mitigation -

Waste Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Parking	250	100
tblConstructionPhase	NumDays	20.00	150.00

9434 Acadia Eastlake Behavioral Health Hospital - San Diego County APCD Air District, Summer

tblConstructionPhase	NumDays	30.00	60.00
tblEnergyUse	LightingElect	4.52	3.16
tblEnergyUse	T24E	6.37	4.46
tblEnergyUse	T24NG	51.05	35.74
tblGrading	AcresOfGrading	150.00	75.00
tblGrading	MaterialExported	0.00	51,000.00
tblLandUse	LandUseSquareFeet	85,890.91	97,050.00
tblLandUse	LotAcreage	1.97	6.82
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	720.49	457.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSolidWaste	SolidWasteGenerationRate	350.40	175.20
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,073.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.50
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	CC_TL	7.30	9.60
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	9.60
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	9.60
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	8.14	12.58
tblVehicleTrips	SU_TR	7.19	11.11
tblVehicleTrips	WD_TR	12.94	20.00
tblWater	IndoorWaterUseRate	10,777,637.44	8,622,109.95

2.0 Emissions Summary

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					
2021	5.0490	73.6801	38.0719	0.1456	18.2141	2.0696	20.2596	9.9699	1.9071	11.8517	0.0000	15,155.2847	15,155.2847	2.7412	0.0000	15,223.8139
2022	9.4464	21.3036	22.0702	0.0503	1.2372	0.9049	2.1421	0.3346	0.8562	1.1908	0.0000	4,958.0488	4,958.0488	0.7398	0.0000	4,976.5424
Maximum	**9.4464**	**73.6801**	**38.0719**	**0.1456**	**18.2141**	**2.0696**	**20.2596**	**9.9699**	**1.9071**	**11.8517**	**0.0000**	**15,155.2847**	**15,155.2847**	**2.7412**	**0.0000**	**15,223.8139**

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					
2021	5.0490	73.6801	38.0719	0.1456	18.2141	2.0696	20.2596	9.9699	1.9071	11.8517	0.0000	15,155.2847	15,155.2847	2.7412	0.0000	15,223.8139
2022	9.4464	21.3036	22.0702	0.0503	1.2372	0.9049	2.1421	0.3346	0.8562	1.1908	0.0000	4,958.0488	4,958.0488	0.7398	0.0000	4,976.5424
Maximum	**9.4464**	**73.6801**	**38.0719**	**0.1456**	**18.2141**	**2.0696**	**20.2596**	**9.9699**	**1.9071**	**11.8517**	**0.0000**	**15,155.2847**	**15,155.2847**	**2.7412**	**0.0000**	**15,223.8139**

	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**

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	2.4228	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Energy	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
Mobile	3.9211	16.0428	45.7094	0.1626	14.0964	0.1300	14.2265	3.7674	0.1214	3.8888		16,531.2184	16,531.2184	0.8304		16,551.9782
Stationary	0.8803	3.9372	2.2449	4.2300e-003		0.1295	0.1295		0.1295	0.1295		450.3993	450.3993	0.0632		451.9780
Total	**7.3466**	**21.0922**	**48.9011**	**0.1735**	**14.0964**	**0.3441**	**14.4405**	**3.7674**	**0.3355**	**4.1029**		**18,316.1019**	**18,316.1019**	**0.9192**	**0.0245**	**18,346.3721**

2.2 Overall Operational

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	2.4228	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Energy	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
Mobile	3.9211	16.0428	45.7094	0.1626	14.0964	0.1300	14.2265	3.7674	0.1214	3.8888		16,531.2184	16,531.2184	0.8304		16,551.9782
Stationary	0.8803	3.9372	2.2449	4.2300e-003		0.1295	0.1295		0.1295	0.1295		450.3993	450.3993	0.0632		451.9780
Total	**7.3466**	**21.0922**	**48.9011**	**0.1735**	**14.0964**	**0.3441**	**14.4405**	**3.7674**	**0.3355**	**4.1029**		**18,316.1019**	**18,316.1019**	**0.9192**	**0.0245**	**18,346.3721**

	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	Site Preparation	Site Preparation	7/1/2021	7/14/2021	5	10	
2	Grading	Grading	7/15/2021	10/6/2021	5	60	
3	Building Construction	Building Construction	10/7/2021	11/30/2022	5	300	
4	Paving	Paving	12/1/2021	12/28/2021	5	20	
5	Architectural Coating	Architectural Coating	5/5/2022	11/30/2022	5	150	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 3.6

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 145,575; Non-Residential Outdoor: 48,525; Striped Parking Area: 9,409 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	6,375.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	97.00	42.00	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	19.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

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
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
Worker	0.0623	0.0405	0.4774	1.4700e-003	0.1479	1.0200e-003	0.1489	0.0392	9.4000e-004	0.0402		146.5994	146.5994	4.1800e-003		146.7040
Total	**0.0623**	**0.0405**	**0.4774**	**1.4700e-003**	**0.1479**	**1.0200e-003**	**0.1489**	**0.0392**	**9.4000e-004**	**0.0402**		**146.5994**	**146.5994**	**4.1800e-003**		**146.7040**

3.2 Site Preparation - 2021

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

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
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
Worker	0.0623	0.0405	0.4774	1.4700e-003	0.1479	1.0200e-003	0.1489	0.0392	9.4000e-004	0.0402		146.5994	146.5994	4.1800e-003		146.7040
Total	**0.0623**	**0.0405**	**0.4774**	**1.4700e-003**	**0.1479**	**1.0200e-003**	**0.1489**	**0.0392**	**9.4000e-004**	**0.0402**		**146.5994**	**146.5994**	**4.1800e-003**		**146.7040**

3.3 Grading - 2021

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					7.4672	0.0000	7.4672	3.4715	0.0000	3.4715			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**7.4672**	**1.9853**	**9.4525**	**3.4715**	**1.8265**	**5.2980**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

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	0.7887	27.2354	6.6629	0.0819	1.8566	0.0831	1.9397	0.5088	0.0795	0.5883		8,985.3531	8,985.3531	0.7937		9,005.1961
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
Worker	0.0692	0.0449	0.5305	1.6300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		162.8882	162.8882	4.6500e-003		163.0044
Total	**0.8579**	**27.2803**	**7.1934**	**0.0836**	**2.0209**	**0.0842**	**2.1051**	**0.5524**	**0.0806**	**0.6329**		**9,148.2413**	**9,148.2413**	**0.7984**		**9,168.2005**

3.3 Grading - 2021

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					7.4672	0.0000	7.4672	3.4715	0.0000	3.4715			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**7.4672**	**1.9853**	**9.4525**	**3.4715**	**1.8265**	**5.2980**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

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	0.7887	27.2354	6.6629	0.0819	1.8566	0.0831	1.9397	0.5088	0.0795	0.5883		8,985.3531	8,985.3531	0.7937		9,005.1961
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
Worker	0.0692	0.0449	0.5305	1.6300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		162.8882	162.8882	4.6500e-003		163.0044
Total	**0.8579**	**27.2803**	**7.1934**	**0.0836**	**2.0209**	**0.0842**	**2.1051**	**0.5524**	**0.0806**	**0.6329**		**9,148.2413**	**9,148.2413**	**0.7984**		**9,168.2005**

3.4 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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
Vendor	0.1270	4.2768	1.0899	0.0114	0.2843	8.9800e-003	0.2933	0.0819	8.5900e-003	0.0904		1,223.6782	1,223.6782	0.0874		1,225.8641
Worker	0.3355	0.2180	2.5728	7.9300e-003	0.7968	5.5000e-003	0.8023	0.2114	5.0700e-003	0.2164		790.0077	790.0077	0.0226		790.5713
Total	**0.4625**	**4.4948**	**3.6627**	**0.0193**	**1.0812**	**0.0145**	**1.0957**	**0.2932**	**0.0137**	**0.3069**		**2,013.6858**	**2,013.6858**	**0.1100**		**2,016.4354**

3.4 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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
Vendor	0.1270	4.2768	1.0899	0.0114	0.2843	8.9800e-003	0.2933	0.0819	8.5900e-003	0.0904		1,223.6782	1,223.6782	0.0874		1,225.8641
Worker	0.3355	0.2180	2.5728	7.9300e-003	0.7968	5.5000e-003	0.8023	0.2114	5.0700e-003	0.2164		790.0077	790.0077	0.0226		790.5713
Total	**0.4625**	**4.4948**	**3.6627**	**0.0193**	**1.0812**	**0.0145**	**1.0957**	**0.2932**	**0.0137**	**0.3069**		**2,013.6858**	**2,013.6858**	**0.1100**		**2,016.4354**

3.4 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**

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
Vendor	0.1181	4.0418	1.0322	0.0113	0.2843	7.7300e-003	0.2921	0.0819	7.3900e-003	0.0892		1,212.1779	1,212.1779	0.0848		1,214.2968
Worker	0.3172	0.1988	2.3924	7.6300e-003	0.7968	5.3800e-003	0.8022	0.2114	4.9600e-003	0.2163		761.0230	761.0230	0.0207		761.5397
Total	**0.4353**	**4.2405**	**3.4246**	**0.0189**	**1.0812**	**0.0131**	**1.0943**	**0.2932**	**0.0124**	**0.3056**		**1,973.2008**	**1,973.2008**	**0.1054**		**1,975.8365**

3.4 Building Construction - 2022

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**

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
Vendor	0.1181	4.0418	1.0322	0.0113	0.2843	7.7300e-003	0.2921	0.0819	7.3900e-003	0.0892		1,212.1779	1,212.1779	0.0848		1,214.2968
Worker	0.3172	0.1988	2.3924	7.6300e-003	0.7968	5.3800e-003	0.8022	0.2114	4.9600e-003	0.2163		761.0230	761.0230	0.0207		761.5397
Total	**0.4353**	**4.2405**	**3.4246**	**0.0189**	**1.0812**	**0.0131**	**1.0943**	**0.2932**	**0.0124**	**0.3056**		**1,973.2008**	**1,973.2008**	**0.1054**		**1,975.8365**

3.5 Paving - 2021

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.4716					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7272**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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
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
Worker	0.0519	0.0337	0.3979	1.2300e-003	0.1232	8.5000e-004	0.1241	0.0327	7.8000e-004	0.0335		122.1661	122.1661	3.4900e-003		122.2533
Total	**0.0519**	**0.0337**	**0.3979**	**1.2300e-003**	**0.1232**	**8.5000e-004**	**0.1241**	**0.0327**	**7.8000e-004**	**0.0335**		**122.1661**	**122.1661**	**3.4900e-003**		**122.2533**

3.5 Paving - 2021

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.4716					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7272**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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
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
Worker	0.0519	0.0337	0.3979	1.2300e-003	0.1232	8.5000e-004	0.1241	0.0327	7.8000e-004	0.0335		122.1661	122.1661	3.4900e-003		122.2533
Total	**0.0519**	**0.0337**	**0.3979**	**1.2300e-003**	**0.1232**	**8.5000e-004**	**0.1241**	**0.0327**	**7.8000e-004**	**0.0335**		**122.1661**	**122.1661**	**3.4900e-003**		**122.2533**

3.6 Architectural Coating - 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					
Archit. Coating	7.0381					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**7.2427**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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
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
Worker	0.0621	0.0389	0.4686	1.5000e-003	0.1561	1.0500e-003	0.1571	0.0414	9.7000e-004	0.0424		149.0664	149.0664	4.0500e-003		149.1676
Total	**0.0621**	**0.0389**	**0.4686**	**1.5000e-003**	**0.1561**	**1.0500e-003**	**0.1571**	**0.0414**	**9.7000e-004**	**0.0424**		**149.0664**	**149.0664**	**4.0500e-003**		**149.1676**

3.6 Architectural Coating - 2022

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	7.0381					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**7.2427**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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
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
Worker	0.0621	0.0389	0.4686	1.5000e-003	0.1561	1.0500e-003	0.1571	0.0414	9.7000e-004	0.0424		149.0664	149.0664	4.0500e-003		149.1676
Total	**0.0621**	**0.0389**	**0.4686**	**1.5000e-003**	**0.1561**	**1.0500e-003**	**0.1571**	**0.0414**	**9.7000e-004**	**0.0424**		**149.0664**	**149.0664**	**4.0500e-003**		**149.1676**

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	3.9211	16.0428	45.7094	0.1626	14.0964	0.1300	14.2265	3.7674	0.1214	3.8888		16,531.2184	16,531.2184	0.8304		16,551.9782
Unmitigated	3.9211	16.0428	45.7094	0.1626	14.0964	0.1300	14.2265	3.7674	0.1214	3.8888		16,531.2184	16,531.2184	0.8304		16,551.9782

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	2,400.00	1,509.60	1333.20	5,873,593	5,873,593
Parking Lot	0.00	0.00	0.00		
Total	2,400.00	1,509.60	1,333.20	5,873,593	5,873,593

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
Hospital	9.60	9.60	9.60	64.90	16.10	19.00	73	25	2
Parking Lot	0.00	0.00	0.00	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
Hospital	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122
Parking Lot	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

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	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
NaturalGas Unmitigated	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871

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					
Hospital	11342.9	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
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
Total		**0.1223**	**1.1121**	**0.9341**	**6.6700e-003**		**0.0845**	**0.0845**		**0.0845**	**0.0845**		**1,334.4571**	**1,334.4571**	**0.0256**	**0.0245**	**1,342.3871**

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					
Hospital	11.3429	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
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
Total		**0.1223**	**1.1121**	**0.9341**	**6.6700e-003**		**0.0845**	**0.0845**		**0.0845**	**0.0845**		**1,334.4571**	**1,334.4571**	**0.0256**	**0.0245**	**1,342.3871**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	2.4228	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Unmitigated	2.4228	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288

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	0.2892					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1324					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1800e-003	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Total	**2.4228**	**1.2000e-004**	**0.0126**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0271**	**0.0271**	**7.0000e-005**		**0.0288**

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	0.2892					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1324					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1800e-003	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Total	**2.4228**	**1.2000e-004**	**0.0126**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0271**	**0.0271**	**7.0000e-005**		**0.0288**

7.0 Water Detail

7.1 Mitigation Measures Water

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
Emergency Generator	1	0.5	50	1073	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (750 - 9999 HP)	0.8803	3.9372	2.2449	4.2300e-003		0.1295	0.1295		0.1295	0.1295		450.3993	450.3993	0.0632		451.9780
Total	**0.8803**	**3.9372**	**2.2449**	**4.2300e-003**		**0.1295**	**0.1295**		**0.1295**	**0.1295**		**450.3993**	**450.3993**	**0.0632**		**451.9780**

11.0 Vegetation

9434 Acadia Eastlake Behavioral Health Hospital

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
Hospital	120.00	Bed	6.82	97,050.00	0
Parking Lot	3.60	Acre	3.60	156,816.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	457.3	**CH4 Intensity (lb/MWhr)**	0.018	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy intensity factors updated based on SDG&E renewable procurement
(457.3, 0.018, 0.004)

Land Use - 10.42 acres

Construction Phase - Architectural coatings simultaneous with last half of building construction

Trips and VMT -

Grading -

Architectural Coating - SDAPCD Rule 67.0.1

Vehicle Trips - 20 trips/bed
9.6 mile trip length

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - SDAPCD Rule 67.0.1

Energy Use - Reduced by 30 percent for account for 2019 Energy Code. (6.37 > 4.46; 4.52 > 3.16; 51.05 > 35.74)

Water And Wastewater - CalGreen requires 20% decrease in indoor water use that is not included in model (8,622,109.95 gallons)

Solid Waste - Default Rate (350.4 tons/yr/bed) reduced 50%.

Energy Mitigation -

Waste Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Parking	250	100
tblConstructionPhase	NumDays	20.00	150.00

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tblConstructionPhase	NumDays	30.00	60.00
tblEnergyUse	LightingElect	4.52	3.16
tblEnergyUse	T24E	6.37	4.46
tblEnergyUse	T24NG	51.05	35.74
tblGrading	AcresOfGrading	150.00	75.00
tblGrading	MaterialExported	0.00	51,000.00
tblLandUse	LandUseSquareFeet	85,890.91	97,050.00
tblLandUse	LotAcreage	1.97	6.82
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	720.49	457.3
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSolidWaste	SolidWasteGenerationRate	350.40	175.20
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,073.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.50
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	CC_TL	7.30	9.60
tblVehicleTrips	CC_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	9.60
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CW_TL	9.50	9.60
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	ST_TR	8.14	12.58
tblVehicleTrips	SU_TR	7.19	11.11
tblVehicleTrips	WD_TR	12.94	20.00
tblWater	IndoorWaterUseRate	10,777,637.44	8,622,109.95

2.0 Emissions Summary

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					
2021	5.0801	73.9206	38.4595	0.1441	18.2141	2.0713	20.2596	9.9699	1.9088	11.8517	0.0000	14,990.0635	14,990.0635	2.7670	0.0000	15,059.2383
2022	9.5046	21.3190	22.0097	0.0494	1.2372	0.9052	2.1425	0.3346	0.8565	1.1911	0.0000	4,870.7823	4,870.7823	0.7435	0.0000	4,889.3697
Maximum	**9.5046**	**73.9206**	**38.4595**	**0.1441**	**18.2141**	**2.0713**	**20.2596**	**9.9699**	**1.9088**	**11.8517**	**0.0000**	**14,990.0635**	**14,990.0635**	**2.7670**	**0.0000**	**15,059.2383**

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					
2021	5.0801	73.9206	38.4595	0.1441	18.2141	2.0713	20.2596	9.9699	1.9088	11.8517	0.0000	14,990.0635	14,990.0635	2.7670	0.0000	15,059.2383
2022	9.5046	21.3190	22.0097	0.0494	1.2372	0.9052	2.1425	0.3346	0.8565	1.1911	0.0000	4,870.7823	4,870.7823	0.7435	0.0000	4,889.3697
Maximum	**9.5046**	**73.9206**	**38.4595**	**0.1441**	**18.2141**	**2.0713**	**20.2596**	**9.9699**	**1.9088**	**11.8517**	**0.0000**	**14,990.0635**	**14,990.0635**	**2.7670**	**0.0000**	**15,059.2383**

	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**

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	2.4228	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Energy	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
Mobile	3.8023	16.4774	44.8503	0.1542	14.0964	0.1309	14.2274	3.7674	0.1223	3.8897		15,681.7088	15,681.7088	0.8339		15,702.5554
Stationary	0.8803	3.9372	2.2449	4.2300e-003		0.1295	0.1295		0.1295	0.1295		450.3993	450.3993	0.0632		451.9780
Total	**7.2278**	**21.5268**	**48.0419**	**0.1651**	**14.0964**	**0.3450**	**14.4414**	**3.7674**	**0.3364**	**4.1038**		**17,466.5922**	**17,466.5922**	**0.9227**	**0.0245**	**17,496.9492**

2.2 Overall Operational

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	2.4228	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Energy	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
Mobile	3.8023	16.4774	44.8503	0.1542	14.0964	0.1309	14.2274	3.7674	0.1223	3.8897		15,681.7088	15,681.7088	0.8339		15,702.5554
Stationary	0.8803	3.9372	2.2449	4.2300e-003		0.1295	0.1295		0.1295	0.1295		450.3993	450.3993	0.0632		451.9780
Total	**7.2278**	**21.5268**	**48.0419**	**0.1651**	**14.0964**	**0.3450**	**14.4414**	**3.7674**	**0.3364**	**4.1038**		**17,466.5922**	**17,466.5922**	**0.9227**	**0.0245**	**17,496.9492**

	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

9434 Acadia Eastlake Behavioral Health Hospital - San Diego County APCD Air District, Winter

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2021	7/14/2021	5	10	
2	Grading	Grading	7/15/2021	10/6/2021	5	60	
3	Building Construction	Building Construction	10/7/2021	11/30/2022	5	300	
4	Paving	Paving	12/1/2021	12/28/2021	5	20	
5	Architectural Coating	Architectural Coating	5/5/2022	11/30/2022	5	150	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 3.6

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 145,575; Non-Residential Outdoor: 48,525; Striped Parking Area: 9,409 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	6,375.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	97.00	42.00	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	19.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

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
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
Worker	0.0706	0.0454	0.4488	1.3800e-003	0.1479	1.0200e-003	0.1489	0.0392	9.4000e-004	0.0402		137.6186	137.6186	3.9500e-003		137.7174
Total	**0.0706**	**0.0454**	**0.4488**	**1.3800e-003**	**0.1479**	**1.0200e-003**	**0.1489**	**0.0392**	**9.4000e-004**	**0.0402**		**137.6186**	**137.6186**	**3.9500e-003**		**137.7174**

3.2 Site Preparation - 2021

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

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
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
Worker	0.0706	0.0454	0.4488	1.3800e-003	0.1479	1.0200e-003	0.1489	0.0392	9.4000e-004	0.0402		137.6186	137.6186	3.9500e-003		137.7174
Total	**0.0706**	**0.0454**	**0.4488**	**1.3800e-003**	**0.1479**	**1.0200e-003**	**0.1489**	**0.0392**	**9.4000e-004**	**0.0402**		**137.6186**	**137.6186**	**3.9500e-003**		**137.7174**

3.3 Grading - 2021

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					7.4672	0.0000	7.4672	3.4715	0.0000	3.4715			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**7.4672**	**1.9853**	**9.4525**	**3.4715**	**1.8265**	**5.2980**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

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	0.8105	27.4703	7.0824	0.0805	1.8566	0.0849	1.9415	0.5088	0.0812	0.5900		8,830.1105	8,830.1105	0.8198		8,850.6055
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
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		152.9095	152.9095	4.3900e-003		153.0193
Total	**0.8889**	**27.5208**	**7.5811**	**0.0820**	**2.0209**	**0.0860**	**2.1069**	**0.5524**	**0.0822**	**0.6346**		**8,983.0200**	**8,983.0200**	**0.8242**		**9,003.6249**

3.3 Grading - 2021

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					7.4672	0.0000	7.4672	3.4715	0.0000	3.4715			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**7.4672**	**1.9853**	**9.4525**	**3.4715**	**1.8265**	**5.2980**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

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	0.8105	27.4703	7.0824	0.0805	1.8566	0.0849	1.9415	0.5088	0.0812	0.5900		8,830.1105	8,830.1105	0.8198		8,850.6055
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
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		152.9095	152.9095	4.3900e-003		153.0193
Total	**0.8889**	**27.5208**	**7.5811**	**0.0820**	**2.0209**	**0.0860**	**2.1069**	**0.5524**	**0.0822**	**0.6346**		**8,983.0200**	**8,983.0200**	**0.8242**		**9,003.6249**

3.4 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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
Vendor	0.1339	4.2655	1.2136	0.0111	0.2843	9.3500e-003	0.2937	0.0819	8.9400e-003	0.0908		1,192.0411	1,192.0411	0.0929		1,194.3627
Worker	0.3805	0.2447	2.4185	7.4400e-003	0.7968	5.5000e-003	0.8023	0.2114	5.0700e-003	0.2164		741.6112	741.6112	0.0213		742.1438
Total	**0.5144**	**4.5101**	**3.6320**	**0.0185**	**1.0812**	**0.0149**	**1.0960**	**0.2932**	**0.0140**	**0.3072**		**1,933.6522**	**1,933.6522**	**0.1142**		**1,936.5065**

3.4 Building Construction - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

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
Vendor	0.1339	4.2655	1.2136	0.0111	0.2843	9.3500e-003	0.2937	0.0819	8.9400e-003	0.0908		1,192.0411	1,192.0411	0.0929		1,194.3627
Worker	0.3805	0.2447	2.4185	7.4400e-003	0.7968	5.5000e-003	0.8023	0.2114	5.0700e-003	0.2164		741.6112	741.6112	0.0213		742.1438
Total	**0.5144**	**4.5101**	**3.6320**	**0.0185**	**1.0812**	**0.0149**	**1.0960**	**0.2932**	**0.0140**	**0.3072**		**1,933.6522**	**1,933.6522**	**0.1142**		**1,936.5065**

3.4 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**

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
Vendor	0.1245	4.0281	1.1490	0.0110	0.2843	8.0500e-003	0.2924	0.0819	7.7000e-003	0.0896		1,180.6310	1,180.6310	0.0899		1,182.8785
Worker	0.3606	0.2231	2.2441	7.1700e-003	0.7968	5.3800e-003	0.8022	0.2114	4.9600e-003	0.2163		714.4298	714.4298	0.0195		714.9175
Total	**0.4851**	**4.2512**	**3.3931**	**0.0181**	**1.0812**	**0.0134**	**1.0946**	**0.2932**	**0.0127**	**0.3059**		**1,895.0608**	**1,895.0608**	**0.1094**		**1,897.7959**

3.4 Building Construction - 2022

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**

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
Vendor	0.1245	4.0281	1.1490	0.0110	0.2843	8.0500e-003	0.2924	0.0819	7.7000e-003	0.0896		1,180.6310	1,180.6310	0.0899		1,182.8785
Worker	0.3606	0.2231	2.2441	7.1700e-003	0.7968	5.3800e-003	0.8022	0.2114	4.9600e-003	0.2163		714.4298	714.4298	0.0195		714.9175
Total	**0.4851**	**4.2512**	**3.3931**	**0.0181**	**1.0812**	**0.0134**	**1.0946**	**0.2932**	**0.0127**	**0.3059**		**1,895.0608**	**1,895.0608**	**0.1094**		**1,897.7959**

3.5 Paving - 2021

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.4716					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7272**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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
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
Worker	0.0588	0.0378	0.3740	1.1500e-003	0.1232	8.5000e-004	0.1241	0.0327	7.8000e-004	0.0335		114.6821	114.6821	3.2900e-003		114.7645
Total	**0.0588**	**0.0378**	**0.3740**	**1.1500e-003**	**0.1232**	**8.5000e-004**	**0.1241**	**0.0327**	**7.8000e-004**	**0.0335**		**114.6821**	**114.6821**	**3.2900e-003**		**114.7645**

3.5 Paving - 2021

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.4716					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7272**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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
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
Worker	0.0588	0.0378	0.3740	1.1500e-003	0.1232	8.5000e-004	0.1241	0.0327	7.8000e-004	0.0335		114.6821	114.6821	3.2900e-003		114.7645
Total	**0.0588**	**0.0378**	**0.3740**	**1.1500e-003**	**0.1232**	**8.5000e-004**	**0.1241**	**0.0327**	**7.8000e-004**	**0.0335**		**114.6821**	**114.6821**	**3.2900e-003**		**114.7645**

3.6 Architectural Coating - 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					
Archit. Coating	7.0381					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**7.2427**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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
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
Worker	0.0706	0.0437	0.4396	1.4000e-003	0.1561	1.0500e-003	0.1571	0.0414	9.7000e-004	0.0424		139.9399	139.9399	3.8200e-003		140.0354
Total	**0.0706**	**0.0437**	**0.4396**	**1.4000e-003**	**0.1561**	**1.0500e-003**	**0.1571**	**0.0414**	**9.7000e-004**	**0.0424**		**139.9399**	**139.9399**	**3.8200e-003**		**140.0354**

3.6 Architectural Coating - 2022

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	7.0381					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**7.2427**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

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
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
Worker	0.0706	0.0437	0.4396	1.4000e-003	0.1561	1.0500e-003	0.1571	0.0414	9.7000e-004	0.0424		139.9399	139.9399	3.8200e-003		140.0354
Total	**0.0706**	**0.0437**	**0.4396**	**1.4000e-003**	**0.1561**	**1.0500e-003**	**0.1571**	**0.0414**	**9.7000e-004**	**0.0424**		**139.9399**	**139.9399**	**3.8200e-003**		**140.0354**

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	3.8023	16.4774	44.8503	0.1542	14.0964	0.1309	14.2274	3.7674	0.1223	3.8897		15,681.7088	15,681.7088	0.8339		15,702.5554
Unmitigated	3.8023	16.4774	44.8503	0.1542	14.0964	0.1309	14.2274	3.7674	0.1223	3.8897		15,681.7088	15,681.7088	0.8339		15,702.5554

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hospital	2,400.00	1,509.60	1333.20	5,873,593	5,873,593
Parking Lot	0.00	0.00	0.00		
Total	2,400.00	1,509.60	1,333.20	5,873,593	5,873,593

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
Hospital	9.60	9.60	9.60	64.90	16.10	19.00	73	25	2
Parking Lot	0.00	0.00	0.00	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
Hospital	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122
Parking Lot	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

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	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
NaturalGas Unmitigated	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871

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					
Hospital	11342.9	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
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
Total		**0.1223**	**1.1121**	**0.9341**	**6.6700e-003**		**0.0845**	**0.0845**		**0.0845**	**0.0845**		**1,334.4571**	**1,334.4571**	**0.0256**	**0.0245**	**1,342.3871**

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					
Hospital	11.3429	0.1223	1.1121	0.9341	6.6700e-003		0.0845	0.0845		0.0845	0.0845		1,334.4571	1,334.4571	0.0256	0.0245	1,342.3871
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
Total		**0.1223**	**1.1121**	**0.9341**	**6.6700e-003**		**0.0845**	**0.0845**		**0.0845**	**0.0845**		**1,334.4571**	**1,334.4571**	**0.0256**	**0.0245**	**1,342.3871**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	2.4228	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Unmitigated	2.4228	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288

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	0.2892					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1324					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1800e-003	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Total	**2.4228**	**1.2000e-004**	**0.0126**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0271**	**0.0271**	**7.0000e-005**		**0.0288**

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	0.2892					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.1324					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1800e-003	1.2000e-004	0.0126	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0271	0.0271	7.0000e-005		0.0288
Total	**2.4228**	**1.2000e-004**	**0.0126**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0271**	**0.0271**	**7.0000e-005**		**0.0288**

7.0 Water Detail

7.1 Mitigation Measures Water

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
Emergency Generator	1	0.5	50	1073	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (750 - 9999 HP)	0.8803	3.9372	2.2449	4.2300e-003		0.1295	0.1295		0.1295	0.1295		450.3993	450.3993	0.0632		451.9780
Total	**0.8803**	**3.9372**	**2.2449**	**4.2300e-003**		**0.1295**	**0.1295**		**0.1295**	**0.1295**		**450.3993**	**450.3993**	**0.0632**		**451.9780**

11.0 Vegetation

ATTACHMENT 2

AERSCREEN Construction Health Risk Assessment Calculations

Construction DPM Calculaitons

Annual PM Exhaust Generation

Annual Tons/Year	Pounds/year	lbs/day	lbs/hr	g/day	sec/day	g/sec
0.1097	219.4	6.01E-01	2.50E-02	273	86,400	3.156E-03

Max 1-hour concentration	6.48E-02	$\mu g/m^3$
Annualized average concentration (0.08)	5.19E-03	$\mu g/m^3$

Onsite Maximum Exposure	**3rd Trimester**	**0<2**	**2<9**	**2<16**	**16<30**	**16-70**
Cair	5.19E-03	5.19E-03	5.19E-03	5.19E-03	5.19E-03	5.19E-03
DBR	361	1090	861	745	335	290
A	1	1	1	1	1	1
EF	0.96	0.96	0.96	0.96	0.96	0.96
Dose-air	1.80E-06	5.43E-06	4.29E-06	3.71E-06	1.67E-06	1.44E-06
CPF	1.10	1.10	1.10	1.10	1.10	1.10
ASF	10	10	3	3	1	1
ED	0.25	1.42	1.42	1.42	1.42	1.42
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk in 1 mill	**0.06**	**1.03**	**0.21**	**0.18**	**0.03**	**0.02**
	5.00	5.00	5.00	5.00	5.00	5.00
Chronic Exposure	**0.0010**	**0.0010**	**0.0010**	**0.0010**	**0.0010**	**0.0010**

0-9	1.29	3.08
0-30	1.29	4.50
0-70	1.29	4.50

AERSCREEN 11126 / AERMOD 1206 07/17/20
11:03:44

TITLE: ACADIA BEHAVIORAL HEALTH

********** VOLUME PARAMETERS **********

SOURCE EMISSION RATE: 0.316E-02 g/s 0.250E-01 lb/hr
VOLUME HEIGHT: 4.27 meters 14.01 feet
INITIAL LATERAL DIMENSION: 200.00 meters 656.17 feet
INITIAL VERTICAL DIMENSION: 200.00 meters 656.17 feet
RURAL OR URBAN: URBAN
POPULATION: 10000

FLAGPOLE RECEPTOR HEIGHT: 1.50 meters 4.92 feet

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** PROBE ANALYSIS **********
25 meter receptor spacing: 431. meters - 5000. meters

Zo SECTOR	ROUGHNESS LENGTH	1-HR CONC (ug/m3)	DIST (m)	TEMPORAL PERIOD
1*	1.000	0.6482E-01	431.0	WIN

* = worst case flow sector

********** MAKEMET METEOROLOGY PARAMETERS **********

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE: Average Moisture
DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.000 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR	MO	DY	JDY	HR
10	01	16	16	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-0.41	0.043	-9.000	0.020	-999.	21.	19.3	1.000	1.50	0.35	0.50

HT	REF TA	HT
10.0	310.0	2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR	MO	DY	JDY	HR
10	01	16	16	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-0.41	0.043	-9.000	0.020	-999.	21.	19.3	1.000	1.50	0.35	0.50

HT	REF TA	HT
10.0	310.0	2.0

********** AERSCREEN AUTOMATED DISTANCES **********

OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
431.00	0.6482E-01	2725.00	0.2928E-01
450.00	0.6355E-01	2750.00	0.2914E-01
475.00	0.6202E-01	2775.00	0.2900E-01
500.00	0.6062E-01	2800.00	0.2886E-01
525.00	0.5933E-01	2825.00	0.2873E-01
550.00	0.5815E-01	2850.00	0.2859E-01
575.00	0.5705E-01	2875.00	0.2846E-01
600.00	0.5602E-01	2900.00	0.2832E-01
625.00	0.5506E-01	2925.00	0.2819E-01
650.00	0.5416E-01	2950.00	0.2806E-01
675.00	0.5332E-01	2975.00	0.2793E-01
700.00	0.5252E-01	3000.00	0.2780E-01
725.00	0.5176E-01	3025.00	0.2768E-01
750.00	0.5104E-01	3050.00	0.2755E-01
775.00	0.5035E-01	3075.00	0.2743E-01
800.00	0.4970E-01	3100.00	0.2730E-01
825.00	0.4907E-01	3125.00	0.2718E-01
850.00	0.4847E-01	3150.00	0.2706E-01
875.00	0.4790E-01	3175.00	0.2694E-01
900.00	0.4734E-01	3200.00	0.2682E-01
925.00	0.4681E-01	3225.00	0.2670E-01
950.00	0.4629E-01	3250.00	0.2658E-01
975.00	0.4580E-01	3275.00	0.2647E-01
1000.00	0.4532E-01	3300.00	0.2635E-01
1025.00	0.4485E-01	3325.00	0.2624E-01
1050.00	0.4440E-01	3350.00	0.2613E-01
1075.00	0.4396E-01	3375.00	0.2601E-01
1100.00	0.4354E-01	3400.00	0.2590E-01
1125.00	0.4313E-01	3425.00	0.2579E-01
1150.00	0.4272E-01	3450.00	0.2568E-01
1175.00	0.4233E-01	3475.00	0.2558E-01
1200.00	0.4195E-01	3500.00	0.2547E-01
1225.00	0.4158E-01	3525.00	0.2536E-01
1250.00	0.4122E-01	3550.00	0.2526E-01
1275.00	0.4086E-01	3575.00	0.2515E-01
1300.00	0.4051E-01	3600.00	0.2505E-01
1325.00	0.4018E-01	3625.00	0.2495E-01
1350.00	0.3986E-01	3650.00	0.2484E-01
1375.00	0.3960E-01	3675.00	0.2474E-01
1400.00	0.3935E-01	3700.00	0.2464E-01
1425.00	0.3910E-01	3725.00	0.2454E-01
1450.00	0.3885E-01	3750.00	0.2444E-01
1475.00	0.3860E-01	3775.00	0.2435E-01
1500.00	0.3836E-01	3800.00	0.2425E-01
1525.00	0.3812E-01	3825.00	0.2415E-01

1550.00	0.3789E-01	3850.00	0.2406E-01
1575.00	0.3765E-01	3875.00	0.2396E-01
1600.00	0.3742E-01	3900.00	0.2387E-01
1625.00	0.3719E-01	3925.00	0.2378E-01
1650.00	0.3697E-01	3950.00	0.2368E-01
1675.00	0.3674E-01	3975.00	0.2359E-01
1700.00	0.3652E-01	4000.00	0.2350E-01
1725.00	0.3630E-01	4025.00	0.2341E-01
1750.00	0.3609E-01	4050.00	0.2332E-01
1775.00	0.3588E-01	4075.00	0.2323E-01
1800.00	0.3567E-01	4100.00	0.2314E-01
1825.00	0.3546E-01	4125.00	0.2306E-01
1850.00	0.3525E-01	4150.00	0.2297E-01
1875.00	0.3505E-01	4175.00	0.2288E-01
1900.00	0.3485E-01	4200.00	0.2280E-01
1925.00	0.3465E-01	4225.00	0.2271E-01
1950.00	0.3445E-01	4250.00	0.2263E-01
1975.00	0.3426E-01	4275.00	0.2255E-01
2000.00	0.3406E-01	4300.00	0.2246E-01
2025.00	0.3387E-01	4325.00	0.2238E-01
2050.00	0.3368E-01	4350.00	0.2230E-01
2075.00	0.3350E-01	4375.00	0.2222E-01
2100.00	0.3331E-01	4400.00	0.2214E-01
2125.00	0.3313E-01	4425.00	0.2206E-01
2150.00	0.3295E-01	4450.00	0.2198E-01
2175.00	0.3277E-01	4475.00	0.2190E-01
2200.00	0.3260E-01	4500.00	0.2182E-01
2225.00	0.3242E-01	4525.00	0.2174E-01
2250.00	0.3225E-01	4550.00	0.2167E-01
2275.00	0.3208E-01	4575.00	0.2159E-01
2300.00	0.3191E-01	4600.00	0.2151E-01
2325.00	0.3174E-01	4625.00	0.2144E-01
2350.00	0.3158E-01	4650.00	0.2136E-01
2375.00	0.3141E-01	4675.00	0.2129E-01
2400.00	0.3125E-01	4700.00	0.2121E-01
2425.00	0.3109E-01	4725.00	0.2114E-01
2450.00	0.3093E-01	4750.00	0.2107E-01
2475.00	0.3077E-01	4775.00	0.2100E-01
2500.00	0.3062E-01	4800.00	0.2092E-01
2525.00	0.3046E-01	4825.00	0.2085E-01
2550.00	0.3031E-01	4850.00	0.2078E-01
2575.00	0.3016E-01	4875.00	0.2071E-01
2600.00	0.3001E-01	4900.00	0.2064E-01
2625.00	0.2986E-01	4925.00	0.2057E-01
2650.00	0.2971E-01	4950.00	0.2050E-01
2675.00	0.2957E-01	4975.00	0.2044E-01
2700.00	0.2943E-01	5000.00	0.2037E-01

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	0.6482E-01	0.6482E-01	0.5834E-01	0.3889E-01	0.6482E-02

DISTANCE FROM SOURCE 431.00 meters

IMPACT AT THE
AMBIENT BOUNDARY 0.6482E-01 0.6482E-01 0.5834E-01 0.3889E-01 0.6482E-02

DISTANCE FROM SOURCE 431.00 meters

ATTACHMENT 3

Emergency Generator Specifications

C27 Generator Set

Electric Power

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

Specifications

Generator Set Specifications	
Minimum Rating	680 ekW
Maximum Rating	800 ekW
Voltage	208 to 600
Frequency	60 Hz
Speed	1800 RPM

Generator Set Configurations	
Emissions/Fuel Strategy	Low Fuel Consumption, U.S. EPA Certified for Stationary Emergency Use Only (Tier 2 Nonroad Equivalent Emission Standards)

Engine Specifications		
Engine Model	C27 ATAAC, V-12, 4-Stroke, Water-Cooled Diesel	
Bore	137.2 mm	5.4 in
Displacement	27.03 L	1649.47 in³
Stroke	152.4 mm	6 in
Compression Ratio	16.5:1	
Aspiration	TA	
Governor Type	Adem™A4	
Fuel System	MEUI	

Benefits and Features

Cat Diesel Engine

Reliable, rugged, durable design
Field-proven in thousands of applications worldwide
Four-stroke-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight

Generator

Matched to the performance and output characteristics of Cat engines
Industry leading mechanical and electrical design
Industry leading motor starting capabilities
High Efficiency

Cat EMCP Control Panel

The EMCP controller features the reliability and durability you have come to expect from your Cat equipment. EMCP4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP4 systems can be further customized to meet your needs through programming and expansion modules.

Seismic Certification

Seismic Certification available.
Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength.
IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer
Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007, CBC 2010
Pre-approved by OSHPD and carries an OSP-0321-10 for use in healthcare projects in California

Design Criteria

The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.

UL 2200 / CSA - Optional

UL 2200 listed packages
CSA Certified
Certain restrictions may apply.
Consult with your Cat® Dealer.

Single-Source Supplier

Fully prototype tested with certified torsional vibration analysis available

World Wide Product Support

Cat dealers provide extensive post-sale support including maintenance and repair agreements. Cat dealers have over 1,800 dealer branch stores operating in 200 countries. The Caterpillar S•O•S℠ program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

Standard Equipment

Air Inlet

- Air Cleaner

Cooling

- Package mounted radiator

Exhaust

- Exhaust flange outlet

Fuel

- Primary fuel filter with integral water separator
- Secondary fuel filter

- Fuel priming pump

Generator

- Matched to the performance and output characteristics of Cat engines
- Load adjustment module provides engine relief upon load impact and improves load acceptance and recovery time
- IP23 Protection

Power Termination

- Bus Bar

Control Panel

- EMCP 4 Genset Controller

General

- Paint - Caterpillar Yellow except rails and radiators gloss black

Optional Equipment

Exhaust

- Exhaust mufflers

Generator

- Anti-condensation heater
- Excitation: [ ] Permanent Magnet Excited (PM) [ ] Internally Excited (IE)
- Oversize and premium generators

Power Termination

- Circuit breakers, UL listed
- Circuit breakers, IEC compliant

Control Panels

- EMCP (4.2) (4.3) (4.4)
- Generator temperature monitoring & protection
- Load share module
- Digital I/O module
- Remote monitoring software

Mounting

- Rubber anti-vibration mounts
- Spring-type vibration isolator
- IBC isolators

Starting/Charging

- Battery chargers
- Oversize batteries
- Jacket water heater
- Heavy-duty starting system

- Charging alternator
- Air starting motor with control and silencer

General

- The following options are based on regional and product configuration:
- Seismic Certification per applicable building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007
- UL 2200 package
- EU Certificate of Conformance (CE)
- CSA Certification
- EEC Declaration of Conformity
- Enclosures: sound attenuated, weather protective
- Automatic transfer switches (ATS)
- Integral & sub-base fuel tanks
- Integral & sub-base UL listed dual wall fuel tanks

Rating Type: STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

Image shown may not reflect actual configuration

C27 ACERT
800 ekW/ 1000 kVA
60 Hz/ 1800 rpm/ 480 V

	Metric	English
Package Performance		
Genset Power Rating with Fan @ 0.8 Power Factor	800 ekW	
Genset Power Rating	1000 kVA	
Aftercooler (Separate Circuit)	N/A	N/A
Fuel Consumption		
100% Load with Fan	213.3 L/hr	56.3 gal/hr
75% Load with Fan	164.6 L/hr	43.5 gal/hr
50% Load with Fan	117.3 L/hr	31.0 gal/hr
25% Load with Fan	72.0 L/hr	19.0 gal/hr
Cooling System[1]		
Engine Coolant Capacity	55.0 L	14.5 gal
Inlet Air		
Combustion Air Inlet Flow Rate	58.2 m³/min	2055.3 cfm
Max. Allowable Combustion Air Inlet Temp	48 ° C	119 ° F
Exhaust System		
Exhaust Stack Gas Temperature	523.6 ° C	974.4 ° F
Exhaust Gas Flow Rate	160.3 m³/min	5661.7 cfm
Exhaust System Backpressure (Maximum Allowable)	6.7 kPa	27.0 in. water

Rating Type: STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

Heat Rejection		
Heat Rejection to Jacket Water	350 kW	19909 Btu/min
Heat Rejection to Exhaust (Total)	765 kW	43510 Btu/min
Heat Rejection to Aftercooler	140 kW	7966 Btu/min
Heat Rejection to Atmosphere from Engine	105 kW	5950 Btu/min
Heat Rejection to Atmosphere from Generator	57 kW	3213 Btu/min

Alternator[2]	
Motor Starting Capability @ 30% Voltage Dip	2117 skVA
Current	1203 amps
Frame Size	1296
Excitation	PM
Temperature Rise	150 ° C

Emissions (Nominal)[3]		
NOx	3371.2 mg/Nm³	6.2 g/hp-hr
CO	137.1 mg/Nm³	0.3 g/hp-hr
HC	7.7 mg/Nm³	0.0 g/hp-hr
PM	5.0 mg/Nm³	0.0 g/hp-hr

DEFINITIONS AND CONDITIONS

1. For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

2. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

3. Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

Rating Type: STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

Applicable Codes and Standards:
AS1359, CSA C22.2 No100-04, UL142,UL489, UL869, UL2200,
NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528,
NEMA MG1-22,NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions

Fuel Rates are based on fuel oil of 35º API [16º C (60º F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29º C (85º F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

www.Cat-ElectricPower.com

Performance No.: DM9068-01

Feature Code: C27DR67

Generator Arrangement: 3850654

Date: 09/03/2016

Source Country: U.S.