Air Quality Analysis for the Escondido Victory Industrial Park, Escondido, California

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ATTACHMENT

Acronyms

μg/m^3	micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
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
CO	carbon monoxide
DPM	diesel particulate matter
HARRF	Hale Avenue Resource Recovery Facility
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NOx	oxides of nitrogen
°F	degrees Fahrenheit
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
ppm	parts per million
RAQS	Regional Air Quality Strategy
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
SO_x	oxides of sulfur
TACs	toxic air contaminants
TCM	Transportation Control Measures
U.S. EPA	United States Environmental Protection Act
USC	United States Code
VMT	vehicle miles travelled
VOC	volatile organic compounds

Executive Summary

This report evaluates potential local and regional air quality impacts associated with the proposed Escondido Victory Industrial Park (project) located at 2005 Harmony Grove Road in Escondido, California. The 5.24-acre site (4.87 acres on-site and 0.37 acre off-site) is currently undeveloped. The project would construct approximately 91,000 square feet of light industrial uses in two, one-story buildings. Building 1 would be approximately 55,500 square feet and Building 2 would be approximately 35,500 square feet. The project would also include 184 surface parking spaces.

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 designated as LI – Light Industrial in the Escondido General Plan. Because the project would be consistent with the General Plan land use designation, the project would be consistent with the growth anticipated by the General Plan and San Diego Association of Governments (SANDAG). The proposed project would, therefore, not result in an increase in emissions that are not already accounted for in the RAQS. Thus, the project would not interfere with implementation of the RAQS or other air quality plans.

Additionally, as calculated in this analysis, project construction emissions would not exceed the applicable City emissions thresholds. These thresholds are designed to provide limits below which project emissions would not significantly change regional air quality. Therefore, as project emissions are 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.

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 are well below these limits, project operations would not result in regional emissions that would exceed the NAAQS or CAAQS or contribute to existing violations.

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. Therefore, this impact would be less than significant.

1.0 Introduction and Project Description

The purpose of this report is to assess potential short-term local and regional air quality impacts resulting from development of the project.

Air pollution affects all southern Californians. Effects can include the following:

- Increased respiratory infections
- Increased discomfort
- Missed days from work and school
- Increased mortality
- Polluted air also damages agriculture and our natural environment.

The project is located within the San Diego Air Basin (SDAB), one of 15 air basins that geographically divide the state of California. 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 are 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 state and federal Ambient Air Quality Standards (AAQS) and is assessed in accordance with the guidelines, policies, and standards established by the City and the San Diego Air Pollution Control District (SDAPCD). Project compatibility with the adopted air quality plan for the area is also assessed. Measures are recommended, as required, to reduce potentially significant impacts.

The project is located at 2005 Harmony Grove Road in Escondido, California. The 5.24-acre site is currently undeveloped. The project would construct approximately 91,000 square feet of light industrial uses in two, one-story buildings. Building 1 would be approximately 55,500 square feet and Building 2 would be approximately 35,500 square feet. The project would also include 184 surface parking spaces.

Figure 1 shows the regional location. Figure 2 shows an aerial photograph of the project vicinity. Figure 3 shows the proposed site plan.

Project Location

FIGURE 1
Regional Location

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Image Source: SANDAG (flown Nov 2014)

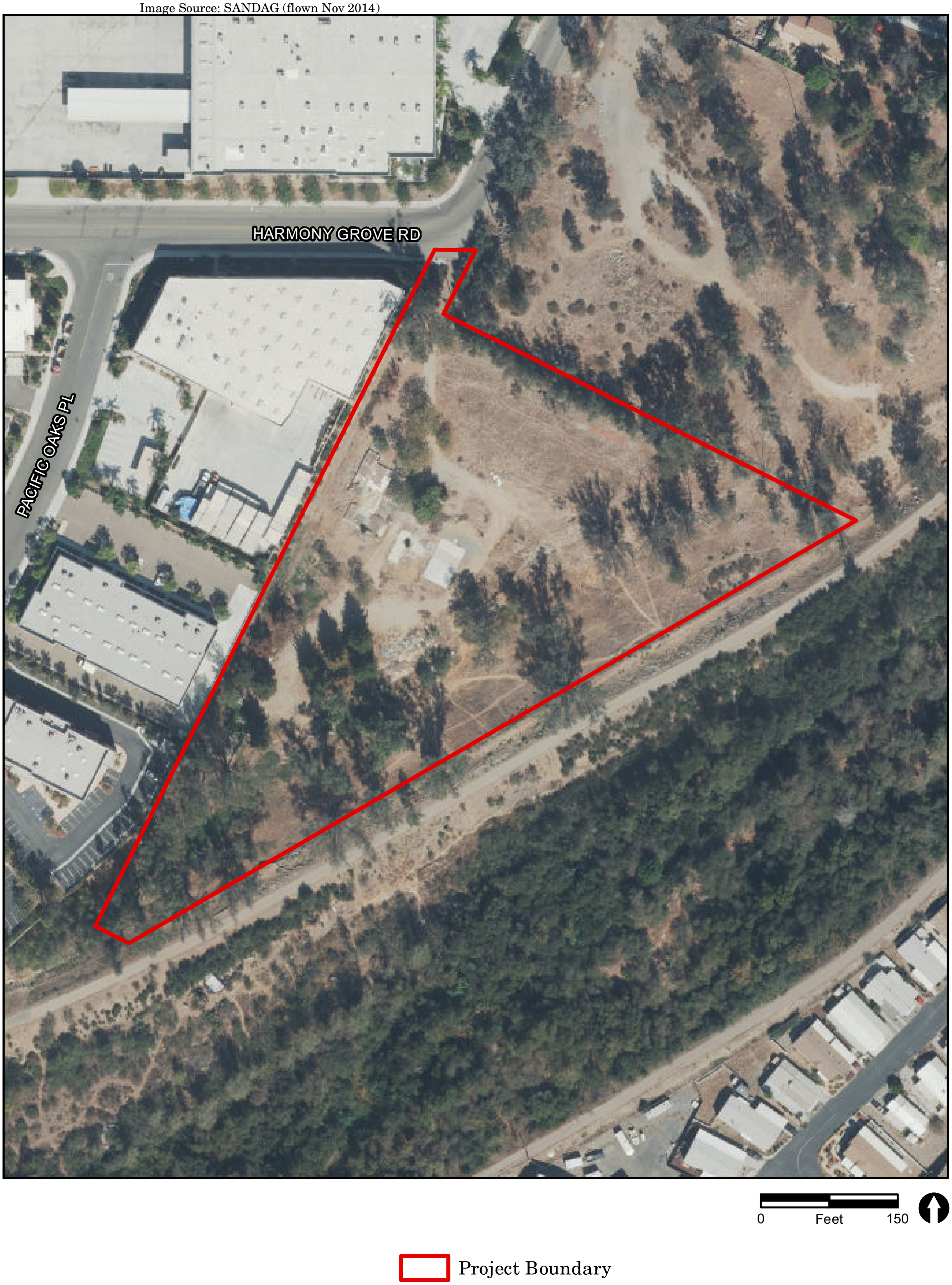

FIGURE 2

Project Location on Aerial Photograph

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Map Source: Ware Malcomb

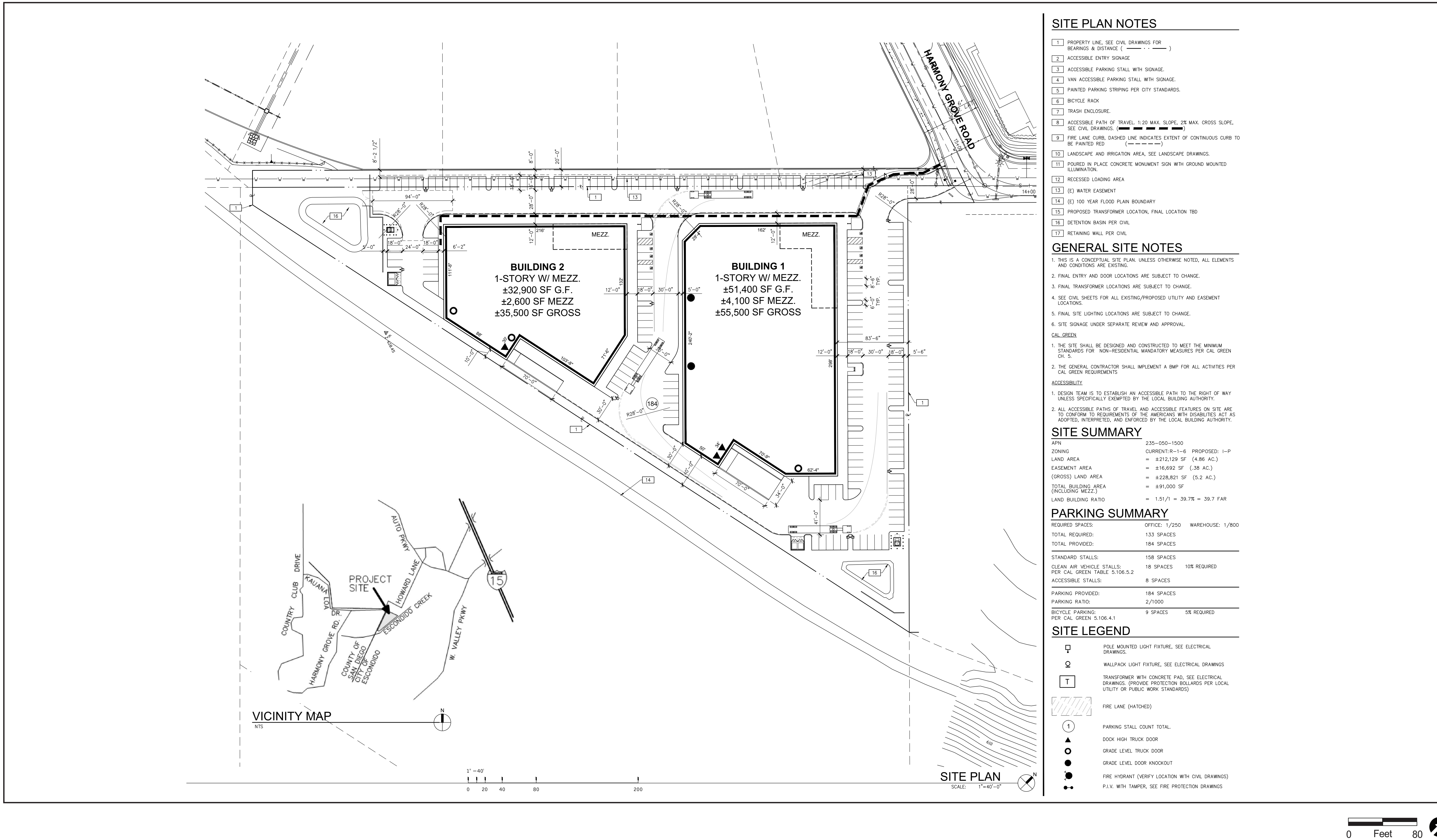

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FIGURE 3

Site Plan

2.0 Regulatory Framework

Motor vehicles are San Diego County's leading source of air pollution (County of San Diego 2013). In addition to these sources, other mobile sources include construction equipment, trains, and airplanes. Emission standards for mobile sources are established by state and federal agencies, such as the California Air Resources Board (CARB) and the United States Environmental Protection Agency (EPA). 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). The state of California has developed statewide programs to encourage cleaner cars and cleaner fuels. The regulatory framework described below details the federal and state agencies that are in charge of monitoring and controlling mobile source air pollutants and the measures currently being taken to achieve and maintain healthful air quality in the SDAB.

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 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. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as a moderate, serious, severe, or extreme non-attainment area for that pollutant (there is also a marginal classification for federal non-attainment areas).

Once a non-attainment area has achieved the air quality standards for a particular pollutant, it may be redesignated as an attainment area for that pollutant. To be redesignated, the area must meet air quality standards and have a 10-year plan for continuing to meet and maintain air quality standards, as well as satisfy other requirements of the Clean Air Act (CAA). Areas that are redesignated to attainment are called maintenance areas.

2.1 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 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 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 (CARB 2016a).

2.2 State Regulations

2.2.1 Criteria Pollutants

The state of California has developed the California Ambient Air Quality Standards (CAAQS) and generally has set more stringent limits on the criteria pollutants (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 specific geographic areas as either "attainment" or "nonattainment" 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.

2.2.2 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. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

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 (AB 2588, 1987, Connelly Bill) was enacted in 1987 and 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.

Table 1
Ambient Air Quality Standards

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

See footnotes on next page.

ppm = parts per million; ppb = parts per billion; µg/m³ = 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/m³ 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/m³ to 12.0 µg/m³. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standards of 15 µg/m³. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m³ 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 parts per billion (ppb). California standards are in units of parts per million (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 nonattainment 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 parts per billion (ppb). California standards are in units of parts per million (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 ARB 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/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment 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 2016a.

The Children's Environmental Health Protection Act, California Senate Bill 25 (Chapter 731, Escutia, Statutes of 1999), 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/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.

2.2.3 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 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, known as the Regional Air Quality Strategy (RAQS). The SIP plans for San Diego County specifically include the Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County (2012), which is pending U.S. EPA approval, and the 2004 Revision to the California State Implementation Plan for Carbon Monoxide – Updated Maintenance Plan for Ten Federal Planning Areas. The SDAPCD adopts rules, regulations, and programs to attain state and federal air quality standards, and appropriates money (including permit fees) to achieve these objectives.

2.2.4 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).

2.3 San Diego Air Pollution Control District

The SDAPCD is the agency that regulates air quality in the SDAB. The SDAPCD prepared the RAQS in response to the requirements set forth in the California CAA AB 2595 (County of San Diego 1992) and the federal CAA. Attached, as part of the RAQS, are the 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 state AAQS. The required triennial updates of the RAQS and corresponding TCM were adopted in 1995, 1998, 2001, 2004, and 2009.

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.

2.4 Local Regulations

The Escondido Municipal Code, Section 33-924(G), includes coordination of CEQA, quality of life standards, and growth management provisions. The purpose of Section 33-924(G) is to ensure consistency between the City's thresholds of environmental significance and the Public Facilities Master Plans which implements the growth management element of the General Plan. The City's General Plan contains quality of life standards that are to be considered in comprehensive planning efforts as well as individual project review. Section 33-924(G)(6) includes thresholds for volatile organic compounds (VOCs), oxides of nitrogen (NO_x), CO, sulfur oxides (SO_x), PM_{10}, $PM_{2.5}$, and lead. These thresholds are summarized in Table 2.

Table 2
City of Escondido Air Quality Significance Thresholds

Pollutant	Emission Rate (pounds per day)
VOC[1]	75[2]/55[3]
NO_x	250
CO	550
SO_x	250
PM_{10}	100
$PM_{2.5}$	55
Lead	3.2[4]

SOURCE: Escondido Municipal Code Section 33-924(G)
[1]Note that reactive organic gases (ROG) and VOC are interchangeable in the context of this project analysis.
[2]Threshold for construction per SCAQMD CEQA Air Quality Handbook (SCAQMD 1993).
[3]Threshold for operation per SCAQMD CEQA Air Quality Handbook (SCAQMD 1993).
[4]Not applicable to construction.

3.0 Environmental Setting

3.1 Geographic Setting

The project is located in the city of Escondido, about 11 miles east of the Pacific Ocean. The eastern portion of 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.

3.2 Climate

The project area, like the rest of San Diego County's inland valley areas, 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 16 inches, falling primarily from November to April. Winter low temperatures in the project area average about 38°F, and summer high temperatures average about 86°F. The average relative humidity is 69 percent and is based on the yearly average humidity at Lindbergh Field (Western Regional Climate Center 2016).

The dominant meteorological feature affecting the region is the Pacific High Pressure Zone, which produces the prevailing westerly to northwesterly winds. These winds tend to blow pollutants away from the coast toward the inland areas. Consequently, air quality near the coast is generally better than that which occurs at the base of the coastal mountain range.

Fluctuations in the strength and pattern of winds from the Pacific High Pressure Zone interacting with the daily local cycle produce periodic temperature inversions that influence the dispersal or containment of air pollutants in the SDAB. Beneath the inversion layer pollutants become "trapped" as their ability to disperse diminishes. The mixing depth is the area under the inversion layer. Generally, the morning inversion layer is lower than the afternoon inversion layer. The greater the change between the morning and afternoon mixing depths the greater the ability of the atmosphere to disperse pollutants.

Throughout the year, the height of the temperature inversion in the afternoon varies between approximately 1,500 and 2,500 feet above mean sea level. In winter, the morning inversion layer is about 800 feet above mean sea level. In summer, the morning inversion layer is about 1,100 feet above mean sea level. Therefore, air quality generally tends to be better in the winter than in the summer.

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.

3.3 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 EPA. The SDAPCD maintains 10 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 Escondido—East Valley Parkway monitoring station located at 600 East Valley Parkway, approximately 2.5 miles northeast of the project site, is the nearest station to the project site. The Escondido monitoring station measures ozone, CO, NO_2, PM_{10}, and $PM_{2.5}$. Table 3 provides a summary of measurements collected at the Escondido monitoring station for the years 2010 through 2014.

Table 3
Summary of Air Quality Measurements Recorded at the Escondido – East Valley Parkway Monitoring Station

Pollutant/Standard	2010	2011	2012	2013	2014
Ozone					
Days State 1-hour Standard Exceeded (0.09 ppm)	2	1	0	0	1
Days State 8-hour Standard Exceeded (0.07 ppm)	5	2	2	4	8
Days Federal 8-hour Standard Exceeded (0.075 ppm)	3	2	0	0	5
Max. 1-hr (ppm)	0.105	0.098	0.084	0.084	0.099
Max 8-hr (ppm)	0.085	0.089	0.074	0.075	0.080
Carbon Monoxide					
Days State 8-hour Standard Exceeded (9 ppm)	0	Na	Na	Na	Na
Days National 8-hour Standard Exceeded (9 ppm)	0	Na	Na	Na	Na
Max. 8-hr (ppm)	3.70	Na	Na	Na	Na
Nitrogen Dioxide					
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
Max 1-hr (ppm)	0.064	0.062	0.062	0.061	0.063
Annual Average (ppm)					
PM_{10}*					
Measured Days State 24-hour Standard Exceeded (50 μg/m^3)	0	0	0	1	0
Calculated Days State 24-hour Standard Exceeded (50 μg/m^3)	0.0	0.0	0.0	6.0	0.0
Measured Days Federal 24-hour Standard Exceeded (150 μg/m^3)	0	0	0	0	0
Calculated Days Federal 24-hour Standard Exceeded (150 μg/m^3)	0.0	0.0	0.0	0.0	0.0
Max. Daily (μg/m^3)	43.0	40.0	33.0	82.0	44.0
State Annual Average (μg/m^3)	21.0	18.8	18.1	23.1	21.5
Federal Annual Average (μg/m^3)	20.9	18.8	18.0	23.2	21.6
$PM_{2.5}$*					
Measured Days Federal 24-hour Standard Exceeded (35 μg/m^3)	0	0	1	1	1
Calculated Days Federal 24-hour Standard Exceeded (35 μg/m^3)	0.0	0.0	3.1	1.1	1.0
Max. Daily (μg/m^3)	52.2	27.4	70.7	56.3	82.3
State Annual Average (μg/m^3)	Na	10.4	Na	10.5	9.6
Federal Annual Average (μg/m^3)	10.5	10.4	10.5	11.0	9.9

SOURCE: CARB 2016b.
ppm = parts per million
μg/m^3 = micrograms per cubic meter
Na = 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.

3.3.1 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 25 years, San Diego had experienced a decline in the number of days with unhealthy levels of ozone despite the region's growth in population and vehicle miles traveled (County of San Diego 2013).

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 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.

3.3.2 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.

3.3.3 PM_{10}

PM_{10} is particulate matter with an aerodynamic diameter of 10 microns or less. Ten microns is about one-seventh of the diameter of a human hair. Particulate matter is a complex mixture of very tiny solid or liquid particles composed of chemicals, soot, and dust. Sources of PM_{10} emissions in the SDAB consist mainly of urban activities, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

Under typical conditions (i.e., no wildfires) particles classified under the PM_{10} category are mainly emitted directly from activities that disturb the soil including travel on roads and construction, mining, or agricultural operations. Other sources include windblown dust, salts, brake dust, and tire wear. For several reasons hinging on the area’s dry climate and coastal location, the SDAB has special difficulty in developing adequate tactics to meet present state particulate standards.

The SDAB is designated as federal unclassified and state nonattainment for PM_{10}. The measured federal PM_{10} standard was exceeded once in 2007, and once in 2008 in the SDAB. The 2007 exceedance occurred on October 21, 2007, at times when major wildfires were raging throughout the county. Consequently, this exceedance was likely caused by the wildfires and would be beyond the control of the SDAPCD. As such, this event is covered under the U.S. EPA’s Natural Events Policy that permits, under certain circumstances, the exclusion of air quality data attributable to uncontrollable natural events (e.g., volcanic activity, wild land fires, and high wind events). The 2008 exceedance did not occur during wildfires and are not covered under this policy. No exceedances of the federal standard have occurred since 2008.

The SDAB is a non-attainment area for the state PM_{10} standard. As shown in Table 3, the state standard of 50 micrograms per cubic meter ($\mu g/m^3$) was exceeded one day in 2013.

3.3.4 $PM_{2.5}$

Airborne, inhalable particles with aerodynamic diameters of 2.5 microns or less have been recognized as an air quality concern requiring regular monitoring. Federal $PM_{2.5}$ standards include an annual arithmetic mean of 15 $\mu g/m^3$ and a 24-hour concentration of 35 $\mu g/m^3$. State $PM_{2.5}$ standards established in 2002 are an annual arithmetic mean of 12 $\mu g/m^3$.

The SDAB was classified as an attainment area for the previous federal 24-hour $PM_{2.5}$ standard of 65 $\mu g/m^3$ and has also been classified as an attainment area for the revised federal 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ (EPA 2004, 2009). The SDAB is a non-attainment area for the state $PM_{2.5}$ standard. The calculated days the federal $PM_{2.5}$ standard was exceeded was 3.3 days in 2012, 1.1 days in 2013, and 1.0 day in 2014 in the SDAB.

Table 3 shows that the federal 24-hour standard of 35 $\mu g/m^3$ was exceeded 1.0 day in 2012, 1.0 day in 2013, and 1.0 day in 2014. These exceedances result in a calculated number of days that the federal standard was exceeded of approximately 3.1 days in 2012, 1.1 days in 2013, and 1.0 day in 2014. According to the U.S. EPA, an area meets the 24-hour $PM_{2.5}$ standard if the 98^{th} percentile of 24-hour $PM_{2.5}$ concentrations in one year, averaged over three years, is less than or equal to 35 $\mu g/m^3$. Thus, although the federal 24-hour standard was exceeded 1.0 day in 2012, 2013, and 2014, the area is in attainment of the standard.

3.3.5 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.

4.0 Thresholds of Significance

Thresholds used to evaluate potential impacts to air quality are based on applicable criteria in the CEQA Guidelines Appendix G, SDAPCD regulations, and the City of Escondido Municipal Code. The project would have a significant air quality impact if it would:

1. Obstruct or conflict with the implementation of the RAQS or applicable portions of the SIP.

2. Result in emissions that would 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 non-attainment under an applicable federal or state ambient air quality standard (including the release of emissions which exceed quantitative thresholds for ozone precursors).

4. Expose sensitive receptors to substantial pollutant concentration including air toxics such as diesel particulates.

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

Emissions resulting from implementation of the project would be due to construction and operation of the project. As discussed in Section 2.4, the City of Escondido Municipal Code Section 33-924(G)(6) includes thresholds for VOCs, NO_x, CO, SO_x, PM_{10}, $PM_{2.5}$, and lead. These thresholds are summarized in Table 2.

5.0 Air Quality Assessment

Air quality impacts can result from the construction and operation of a 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 are primarily due to emissions to the basin from mobile sources associated with the vehicular travel along the roadways within the project area.

Air emissions were calculated using California Emissions Estimator Model (CalEEMod) 2013.2.2 (California Air Pollution Control Officers Association [CAPCOA] 2013). 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 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 state and federal lead standards. Furthermore, fuel used in construction equipment and most other vehicles is not leaded.

5.1 Construction-related Emissions

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 demolition and 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 assuming construction would begin in October 2016 and last for approximately nine 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 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 construction would occur in five stages: site preparation, grading/excavation, building construction, paving, and architectural coatings.

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)						
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Site Preparation	5	55	42	0	21	13
Grading	9	110	91	0	14	7
Building Construction	4	30	22	0	2	2
Paving	2	17	13	0	1	1
Architectural Coatings	51	2	2	0	0	0
Maximum Daily Emissions	**51**	**110**	**91**	**0**	**21**	**13**
Significance Threshold	*75*	*250*	*550*	*250*	*100*	*55*

Standard dust control measures would be implemented as a part of project construction in accordance with SDAPCD rules and regulations. 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.

For assessing the significance of the air quality emissions resulting during construction of the project, the construction emissions were compared to the City threshold levels shown in Table 2. As seen in Table 4, maximum daily construction emissions are projected to be less than the applicable thresholds for all criteria pollutants. Impacts would be less than significant.

5.2 Operation-related Emissions

5.2.1 Mobile and Area Source Emissions

Mobile source emissions would originate from traffic generated by the project. Area source emissions would result from activities such as the use of natural gas and consumer products. In addition, landscaping maintenance activities associated with the proposed land uses would produce pollutant emissions.

Operational emissions due to implementation of the project were calculated using CalEEMod. CalEEMod estimates vehicle emissions by first calculating trip rate, trip length, trip purpose (e.g., home to work, home to shop, home to other), and trip type percentages for each land use type, based on the land use types and quantities. Project trip generation rates were developed from SANDAG trip generation rates (SANDAG 2002). According to SANDAG, light industrial uses generate 8 trips per 1,000 square feet. Therefore, the project would generate 728 average daily trips. Based on SANDAG regional data, an average regional trip length of 5.8 miles for urban areas was used to determine total project vehicle miles traveled (VMT) (SANDAG 2014). All other CalEEMod default trip characteristics were used.

Area source emissions associated with the project include consumer products, 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.

For architectural coatings, ROG off-gasing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers. ROG evaporative emissions are calculated using 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).

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)

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Sources	2	0	0	0	0	0
Energy Sources	0	0	0	0	0	0
Mobile Sources	2	4	18	0	3	1
Total	**4**	**4**	**19**	**0**	**3**	**1**
Significance Threshold	*55*	*250*	*550*	*250*	*100*	*55*

Note: Totals may vary due to independent rounding.

5.3 Impact Analysis

1. *Would the project obstruct or conflict with the implementation of the San Diego RAQS or applicable portions of the SIP?*

The SIP is a collection of documents that set forth the state's strategies for achieving the NAAQS. The SDAB is designated non-attainment for the federal ozone standard. As discussed, the SIP plans for San Diego County specifically include the Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County (2012), which is pending U.S. EPA approval, and the 2004 Revision to the California State Implementation Plan for Carbon Monoxide – Updated Maintenance Plan for Ten Federal Planning Areas. Additionally, the California Clean Air Act requires areas that are designated as non-attainment of state ambient air quality standards for ozone, CO,

SO_2, and NO_2 to prepare and implement plans to attain the standards by the earliest practicable date. The SDAB is designated non-attainment for the state ozone standard. Accordingly, the RAQS was developed to identify feasible emission control measures and provide expeditious progress toward attaining the state standards for ozone, PM_{10}, and $PM_{2.5}$; however, the California Clean Air Act only requires, in this case, a plan for ozone. The two pollutants addressed in the RAQS are ROG and NOx, 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 2009 as the air quality plan for the region.

The CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed in general plans. As such, projects that propose development that is consistent with the growth anticipated by SANDAG's growth projections and/or the general plan would be consistent with the RAQS and applicable portions of the SIP. 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 and applicable portions of the SIP. 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 and applicable portions of the SIP for the specific subregional area.

The project site is designated as LI – Light Industrial in the Escondido General Plan. The project would be consistent with the General Plan land use designation and with the growth anticipated by the General Plan and SANDAG. Additionally, as discussed under Issue 2, project emissions would not exceed significance thresholds from the Escondido Municipal Code. These thresholds are intended to both define quality of life standards and implement the Growth Management Element of the Escondido General Plan. 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 interfere with implementation of the RAQS or other air quality plans.

2. *Would the project result in emissions that would 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 emissions are 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 operation 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 are 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 would result in a less than significant impact.

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

The region is classified as attainment for all criterion pollutants except ozone, PM_{10}, and $PM_{2.5}$. The SDAB is non-attainment for the 8-hour federal and 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 NAAQS 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?*

Construction of the project site could generate fugitive dust emissions from the use of equipment. However, these emissions are temporary and would not generate an ongoing, substantial source of emissions that could adversely affect surrounding sensitive receptors. Additionally, the project would be required to comply with SDAPCD rules and regulations.

As discussed in Section 2.2.2, CARB has provided guidelines for the siting of land uses near heavily traveled roadways. 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. The project would not place sensitive receptors within 500 feet of a roadway carrying 100,000 vehicles per day. Therefore, the project would not expose sensitive receptors to substantial concentrations of DPM.

The project would include three loading docks. Delivery trucks accessing these loading docks would be a source of DPM. However, heavy-duty commercial diesel trucks would be subject to idling restrictions. State regulations require manual or automatic shutdown of engines after idling for five minutes. Additionally, trucks must meet CARB emissions standards. Therefore, the loading dock operation would not result in a substantial pollutant concentration.

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. As a result, ambient CO levels have declined significantly. CO hot spots have been found to occur only at signalized intersections that operate at or below level of service E with peak-hour trips for that intersection exceeding 3,000 trips. Based on the intersection volumes in the traffic study area, the project is not anticipated to result in a CO hot spot. Impacts would be less than significant.

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. Sensitive receptors near the project site include residential uses and church to the northeast, and residential uses southeast across the channel; however, exposure to odors associated with project construction would be short term and temporary in nature. Impacts would be less than significant. The southwestern portion of the site is located within an Odor Overlay due to the proximity to the City's Hale Avenue Resource Recovery Facility (HARRF). The project would not be significantly impacted by odors from the HARRF since the project site is located upwind from the facility and the HARRF was designed and equipped with appropriate odor control systems.

6.0 Conclusions

The primary goal of the RAQS is to reduce ozone precursor emissions. The project site is designated as LI – Light Industrial in the Escondido General Plan. Because the project would be consistent with the General Plan land use designation, it would be consistent with the growth anticipated by the General Plan and SANDAG. The proposed project would therefore not result in an increase in emissions that are not already accounted for in the RAQS. Thus, the project would not interfere with implementation of the RAQS or other air quality plans.

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 are 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 are well below these limits, project operations would not result in regional emissions that would exceed the NAAQS or CAAQS or contribute to existing violations.

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. Therefore, odor impacts would be less than significant.

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ATTACHMENT 1

CalEEMod Output – Project Emissions

8175 Harmony Grove Industrial

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
General Light Industry	91.00	1000sqft	4.87	91,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	556.22	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2020 RPS Goal
CalEEMod accounts for 10.2%
Additional 22.8% reduction applied

Land Use - 4.87 acre site

Construction Phase - Approximate 9 month construction schedule, October 2016-July 2017

Architectural Coating - SDAPCD VOC content limit, Rule 67

Vehicle Trips - SANDAG trip generation rate - 8/1,000 sq ft
SANDAG trip length - 5.8 miles

Woodstoves -

Area Coating - SDAPCD VOC content limit, Rule 67

Energy Use - 2013 Title 24
21.8% increase electricity efficiency (1.16)
16.8 increase natural gas efficiency (3.78)

Water And Wastewater - CalGreen - 20% decrease in interior water use

Solid Waste -

Area Mitigation -

Trips and VMT - 18 cy per truck

Grading -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblConstructionPhase	NumDays	230.00	145.00
tblConstructionPhase	NumDays	8.00	30.00
tblConstructionPhase	PhaseStartDate	11/19/2016	11/21/2016
tblConstructionPhase	PhaseStartDate	10/8/2016	10/10/2016
tblConstructionPhase	PhaseStartDate	6/10/2017	6/12/2017
tblEnergyUse	T24E	1.48	1.16
tblEnergyUse	T24NG	4.54	3.78
tblGrading	MaterialImported	0.00	67,000.00
tblLandUse	LotAcreage	2.09	4.87
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	720.49	556.22
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripNumber	6,625.00	7,445.00
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	WD_TR	6.97	8.00
tblWater	IndoorWaterUseRate	21,043,750.00	16,835,000.00

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					
2016	9.1364	110.3038	90.8649	0.2166	18.2141	3.1522	21.1539	9.9699	2.8999	12.6745	0.0000	21,876.0332	21,876.0332	1.2340	0.0000	21,901.9468
2017	53.0823	27.8660	21.7426	0.0341	0.4117	1.8023	2.2141	0.1112	1.6924	1.8036	0.0000	3,286.9124	3,286.9124	0.6677	0.0000	3,300.9338
Total	**62.2187**	**138.1698**	**112.6075**	**0.2507**	**18.6259**	**4.9545**	**23.3680**	**10.0811**	**4.5923**	**14.4781**	**0.0000**	**25,162.9456**	**25,162.9456**	**1.9017**	**0.0000**	**25,202.8806**

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					
2016	9.1364	110.3038	90.8649	0.2166	18.2141	3.1522	21.1539	9.9699	2.8999	12.6745	0.0000	21,876.0331	21,876.0331	1.2340	0.0000	21,901.9468
2017	53.0823	27.8660	21.7426	0.0341	0.4117	1.8023	2.2141	0.1112	1.6924	1.8036	0.0000	3,286.9124	3,286.9124	0.6677	0.0000	3,300.9338
Total	**62.2187**	**138.1698**	**112.6075**	**0.2507**	**18.6259**	**4.9545**	**23.3680**	**10.0811**	**4.5923**	**14.4781**	**0.0000**	**25,162.9456**	**25,162.9456**	**1.9017**	**0.0000**	**25,202.8806**

	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	2.2083	9.0000e-005	9.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0199	0.0199	5.0000e-005		0.0210
Energy	0.0297	0.2696	0.2265	1.6200e-003		0.0205	0.0205		0.0205	0.0205		323.5230	323.5230	6.2000e-003	5.9300e-003	325.4919
Mobile	2.0891	3.5930	18.4112	0.0433	3.0341	0.0514	3.0854	0.8099	0.0474	0.8573		3,310.4146	3,310.4146	0.1328		3,313.2040
Total	**4.3270**	**3.8627**	**18.6470**	**0.0449**	**3.0341**	**0.0719**	**3.1060**	**0.8099**	**0.0679**	**0.8778**		**3,633.9575**	**3,633.9575**	**0.1391**	**5.9300e-003**	**3,638.7169**

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	2.2083	9.0000e-005	9.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0199	0.0199	5.0000e-005		0.0210
Energy	0.0297	0.2696	0.2265	1.6200e-003		0.0205	0.0205		0.0205	0.0205		323.5230	323.5230	6.2000e-003	5.9300e-003	325.4919
Mobile	2.0891	3.5930	18.4112	0.0433	3.0341	0.0514	3.0854	0.8099	0.0474	0.8573		3,310.4146	3,310.4146	0.1328		3,313.2040
Total	**4.3270**	**3.8627**	**18.6470**	**0.0449**	**3.0341**	**0.0719**	**3.1060**	**0.8099**	**0.0679**	**0.8778**		**3,633.9575**	**3,633.9575**	**0.1391**	**5.9300e-003**	**3,638.7169**

	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	10/3/2016	10/7/2016	5	5	
2	Grading	Grading	10/10/2016	11/18/2016	5	30	
3	Building Construction	Building Construction	11/21/2016	6/9/2017	5	145	
4	Paving	Paving	6/12/2017	7/5/2017	5	18	
5	Architectural Coating	Architectural Coating	7/6/2017	7/31/2017	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 15

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 136,500; Non-Residential Outdoor: 45,500 (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	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	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	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	6	15.00	0.00	7,445.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	38.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2016

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	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

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	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	**0.0667**	**0.0829**	**0.7823**	**1.7600e-003**	**0.1479**	**1.1100e-003**	**0.1490**	**0.0392**	**1.0200e-003**	**0.0402**		**146.8209**	**146.8209**	**7.8300e-003**		**146.9854**

3.2 Site Preparation - 2016

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	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.005 3	4,065.005 3	1.2262		4,090.754 4
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**	**0.0000**	**4,065.005 3**	**4,065.005 3**	**1.2262**		**4,090.754 4**

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	0.0667	0.0829	0.7823	1.7600e-003	0.1479	1.1100e-003	0.1490	0.0392	1.0200e-003	0.0402		146.8209	146.8209	7.8300e-003		146.9854
Total	**0.0667**	**0.0829**	**0.7823**	**1.7600e-003**	**0.1479**	**1.1100e-003**	**0.1490**	**0.0392**	**1.0200e-003**	**0.0402**		**146.8209**	**146.8209**	**7.8300e-003**		**146.9854**

3.3 Grading - 2016

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.6669	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225		3,093.788 9	3,093.788 9	0.9332		3,113.386 0
Total	**3.6669**	**38.4466**	**26.0787**	**0.0298**	**6.5523**	**2.1984**	**8.7507**	**3.3675**	**2.0225**	**5.3900**		**3,093.788 9**	**3,093.788 9**	**0.9332**		**3,113.386 0**

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	5.4139	71.7881	64.1342	0.1854	4.3242	0.9528	5.2770	1.1840	0.8765	2.0605		18,659.89 35	18,659.89 35	0.1349		18,662.72 53
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	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878
Total	**5.4695**	**71.8572**	**64.7861**	**0.1869**	**4.4474**	**0.9538**	**5.4011**	**1.2167**	**0.8773**	**2.0940**		**18,782.24 43**	**18,782.24 43**	**0.1414**		**18,785.21 31**

3.3 Grading - 2016

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.6669	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225	0.0000	3,093.788 9	3,093.788 9	0.9332		3,113.386 0
Total	**3.6669**	**38.4466**	**26.0787**	**0.0298**	**6.5523**	**2.1984**	**8.7507**	**3.3675**	**2.0225**	**5.3900**	**0.0000**	**3,093.788 9**	**3,093.788 9**	**0.9332**		**3,113.386 0**

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	5.4139	71.7881	64.1342	0.1854	4.3242	0.9528	5.2770	1.1840	0.8765	2.0605		18,659.89 35	18,659.89 35	0.1349		18,662.72 53
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	0.0556	0.0690	0.6519	1.4700e-003	0.1232	9.2000e-004	0.1242	0.0327	8.5000e-004	0.0335		122.3507	122.3507	6.5300e-003		122.4878
Total	**5.4695**	**71.8572**	**64.7861**	**0.1869**	**4.4474**	**0.9538**	**5.4011**	**1.2167**	**0.8773**	**2.0940**		**18,782.24 43**	**18,782.24 43**	**0.1414**		**18,785.21 31**

3.4 Building Construction - 2016

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	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

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	0.1810	1.4560	2.2457	3.5500e-003	0.0996	0.0217	0.1213	0.0284	0.0200	0.0484		355.1388	355.1388	2.8400e-003		355.1984
Worker	0.1408	0.1749	1.6516	3.7100e-003	0.3122	2.3400e-003	0.3145	0.0828	2.1500e-003	0.0850		309.9551	309.9551	0.0165		310.3024
Total	**0.3218**	**1.6309**	**3.8972**	**7.2600e-003**	**0.4117**	**0.0241**	**0.4358**	**0.1112**	**0.0221**	**0.1333**		**665.0940**	**665.0940**	**0.0194**		**665.5008**

3.4 Building Construction - 2016

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	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

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	0.1810	1.4560	2.2457	3.5500e-003	0.0996	0.0217	0.1213	0.0284	0.0200	0.0484		355.1388	355.1388	2.8400e-003		355.1984
Worker	0.1408	0.1749	1.6516	3.7100e-003	0.3122	2.3400e-003	0.3145	0.0828	2.1500e-003	0.0850		309.9551	309.9551	0.0165		310.3024
Total	**0.3218**	**1.6309**	**3.8972**	**7.2600e-003**	**0.4117**	**0.0241**	**0.4358**	**0.1112**	**0.0221**	**0.1333**		**665.0940**	**665.0940**	**0.0194**		**665.5008**

3.4 Building Construction - 2017

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	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

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	0.1654	1.3014	2.1270	3.5400e-003	0.0996	0.0189	0.1184	0.0284	0.0173	0.0457		349.1308	349.1308	2.6800e-003		349.1872
Worker	0.1276	0.1590	1.4865	3.7100e-003	0.3122	2.2700e-003	0.3144	0.0828	2.0900e-003	0.0849		297.9763	297.9763	0.0153		298.2976
Total	**0.2930**	**1.4603**	**3.6135**	**7.2500e-003**	**0.4117**	**0.0211**	**0.4329**	**0.1112**	**0.0194**	**0.1306**		**647.1071**	**647.1071**	**0.0180**		**647.4848**

3.4 Building Construction - 2017

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	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

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	0.1654	1.3014	2.1270	3.5400e-003	0.0996	0.0189	0.1184	0.0284	0.0173	0.0457		349.1308	349.1308	2.6800e-003		349.1872
Worker	0.1276	0.1590	1.4865	3.7100e-003	0.3122	2.2700e-003	0.3144	0.0828	2.0900e-003	0.0849		297.9763	297.9763	0.0153		298.2976
Total	**0.2930**	**1.4603**	**3.6135**	**7.2500e-003**	**0.4117**	**0.0211**	**0.4329**	**0.1112**	**0.0194**	**0.1306**		**647.1071**	**647.1071**	**0.0180**		**647.4848**

3.5 Paving - 2017

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	1.6554	16.8035	12.4837	0.0186		1.0056	1.0056		0.9269	0.9269		1,873.8264	1,873.8264	0.5588		1,885.5609
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6554**	**16.8035**	**12.4837**	**0.0186**		**1.0056**	**1.0056**		**0.9269**	**0.9269**		**1,873.8264**	**1,873.8264**	**0.5588**		**1,885.5609**

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	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987
Total	**0.0671**	**0.0837**	**0.7823**	**1.9500e-003**	**0.1643**	**1.1900e-003**	**0.1655**	**0.0436**	**1.1000e-003**	**0.0447**		**156.8296**	**156.8296**	**8.0500e-003**		**156.9987**

3.5 Paving - 2017

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	1.6554	16.8035	12.4837	0.0186		1.0056	1.0056		0.9269	0.9269	0.0000	1,873.8264	1,873.8264	0.5588		1,885.5609
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6554**	**16.8035**	**12.4837**	**0.0186**		**1.0056**	**1.0056**		**0.9269**	**0.9269**	**0.0000**	**1,873.8264**	**1,873.8264**	**0.5588**		**1,885.5609**

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	0.0671	0.0837	0.7823	1.9500e-003	0.1643	1.1900e-003	0.1655	0.0436	1.1000e-003	0.0447		156.8296	156.8296	8.0500e-003		156.9987
Total	**0.0671**	**0.0837**	**0.7823**	**1.9500e-003**	**0.1643**	**1.1900e-003**	**0.1655**	**0.0436**	**1.1000e-003**	**0.0447**		**156.8296**	**156.8296**	**8.0500e-003**		**156.9987**

3.6 Architectural Coating - 2017

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	52.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**53.0554**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

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	0.0269	0.0335	0.3129	7.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		62.7319	62.7319	3.2200e-003		62.7995
Total	**0.0269**	**0.0335**	**0.3129**	**7.8000e-004**	**0.0657**	**4.8000e-004**	**0.0662**	**0.0174**	**4.4000e-004**	**0.0179**		**62.7319**	**62.7319**	**3.2200e-003**		**62.7995**

3.6 Architectural Coating - 2017

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	52.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**53.0554**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

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	0.0269	0.0335	0.3129	7.8000e-004	0.0657	4.8000e-004	0.0662	0.0174	4.4000e-004	0.0179		62.7319	62.7319	3.2200e-003		62.7995
Total	**0.0269**	**0.0335**	**0.3129**	**7.8000e-004**	**0.0657**	**4.8000e-004**	**0.0662**	**0.0174**	**4.4000e-004**	**0.0179**		**62.7319**	**62.7319**	**3.2200e-003**		**62.7995**

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	2.0891	3.5930	18.4112	0.0433	3.0341	0.0514	3.0854	0.8099	0.0474	0.8573		3,310.4146	3,310.4146	0.1328		3,313.2040
Unmitigated	2.0891	3.5930	18.4112	0.0433	3.0341	0.0514	3.0854	0.8099	0.0474	0.8573		3,310.4146	3,310.4146	0.1328		3,313.2040

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	728.00	120.12	61.88	1,075,503	1,075,503
Total	728.00	120.12	61.88	1,075,503	1,075,503

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
General Light Industry	5.80	5.80	5.80	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

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	0.0297	0.2696	0.2265	1.6200e-003		0.0205	0.0205		0.0205	0.0205		323.5230	323.5230	6.2000e-003	5.9300e-003	325.4919
NaturalGas Unmitigated	0.0297	0.2696	0.2265	1.6200e-003		0.0205	0.0205		0.0205	0.0205		323.5230	323.5230	6.2000e-003	5.9300e-003	325.4919

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	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					
General Light Industry	2749.95	0.0297	0.2696	0.2265	1.6200e-003		0.0205	0.0205		0.0205	0.0205		323.5230	323.5230	6.2000e-003	5.9300e-003	325.4919
Total		**0.0297**	**0.2696**	**0.2265**	**1.6200e-003**		**0.0205**	**0.0205**		**0.0205**	**0.0205**		**323.5230**	**323.5230**	**6.2000e-003**	**5.9300e-003**	**325.4919**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	2.74995	0.0297	0.2696	0.2265	1.6200e-003		0.0205	0.0205		0.0205	0.0205		323.5230	323.5230	6.2000e-003	5.9300e-003	325.4919
Total		**0.0297**	**0.2696**	**0.2265**	**1.6200e-003**		**0.0205**	**0.0205**		**0.0205**	**0.0205**		**323.5230**	**323.5230**	**6.2000e-003**	**5.9300e-003**	**325.4919**

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	2.2083	9.0000e-005	9.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0199	0.0199	5.0000e-005		0.0210
Unmitigated	2.2083	9.0000e-005	9.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0199	0.0199	5.0000e-005		0.0210

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	0.2600					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9474					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.8000e-004	9.0000e-005	9.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0199	0.0199	5.0000e-005		0.0210
Total	**2.2083**	**9.0000e-005**	**9.3500e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0199**	**0.0199**	**5.0000e-005**		**0.0210**

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					
Consumer Products	1.9474					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.8000e-004	9.0000e-005	9.3500e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0199	0.0199	5.0000e-005		0.0210
Architectural Coating	0.2600					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2083**	**9.0000e-005**	**9.3500e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**		**0.0199**	**0.0199**	**5.0000e-005**		**0.0210**

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 Vegetation