

AIR QUALITY ASSESSMENT

Lisbon Heights 24-Unit Residential Development

City of San Diego

City Project #: 622368

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COMMON ACRONYMS

Air Quality Impact Assessments (AQIA)
Assembly Bill 32 (AB32)
California Air Resource Board (CARB)
California Ambient Air Quality Standards (CAAQS)
California Environmental Quality Act (CEQA)
Carbon Dioxide (CO₂)
Cubic Yards (CY)
Diesel Particulate Matter (DPM)
Environmental Protection Agency (EPA)
EPA Office of Air Quality Planning and Standards (OAQPS)
Hazardous Air Pollutants (HAPs)
Hydrogen Sulfide (H₂S)
International Residential Code (IRC)
Level of Service (LOS)
Low Carbon Fuel Standard (LCFS)
Methane (CH₄)
National ambient air quality standards (NAAQS)
Nitrous Oxide (N₂O)
North County Transit District (NCTD)
Reactive Organic Gas (ROG)
Regional Air Quality Strategy (RAQS)
San Diego Air Basin (SDAB)
San Diego Air Pollution Control District (SDAPCD)
South Coast Air Quality Management District (SCAQMD)
Specific Plan Area (SPA)
State Implementation Plan (SIP)
Toxic Air Contaminants (TACs)
Vehicle Miles Traveled (VMT)

EXECUTIVE SUMMARY

This air quality impact study has been completed to identify air quality impacts, if any, which may be created from the construction and operation of the proposed 24-unit residential development in the City of San Diego. The proposed Project consists of developing an existing vacant lot located with access to Lisbon Street between the nearest intersections of Lisbon Street and 71st and Lisbon Street and Woodrow Avenue. The proposed project would be expected to start construction early 2020 and be completed roughly one year later. Full operations would be expected in 2021. The lot is vacant and no demolition activities would be necessary.

Based upon this analysis, no direct or cumulative criteria or fugitive dust impacts are expected from construction. Therefore, mitigation measures for criteria pollutants and fugitive dust from construction are not required. It should be noted that the grading contractor will be required to follow BMPs for grading and comply with all SDAPCD rules.

A diesel particulate health risk analysis was conducted, and based on diesel exhaust emission quantities, the proposed project would not create significant diesel particulate health risk impacts. The project would however be required to comply with all applicable regulations that would preclude any impact.

No combined cumulative construction impacts are expected because nearby construction projects would not be close enough or large enough to cause air quality mixing sufficient to exceed air quality thresholds.

Based upon the operational analysis, the proposed project would generate less than significant impacts.

The project site is currently zone RS-1-7 and would not require a rezone in order to increase to the proposed density. Given this, the Project would be consistent with the City's General Plan and would have been considered within the Regional Air Quality Strategy (RAQS). Therefore, the proposed project would not conflict with or obstruct the RAQS or State Implementation Plan (SIP) and would be consistent with growth in the region.

Finally, odor impacts from construction operations would be expected though would be considered short-term events and would not be considered a significant impact.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Air Quality study is to determine potential air quality impacts (if any) that may be created by construction, area or operational emissions (short term or long term) from the proposed Project. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to mitigate those impacts to the extent feasible.

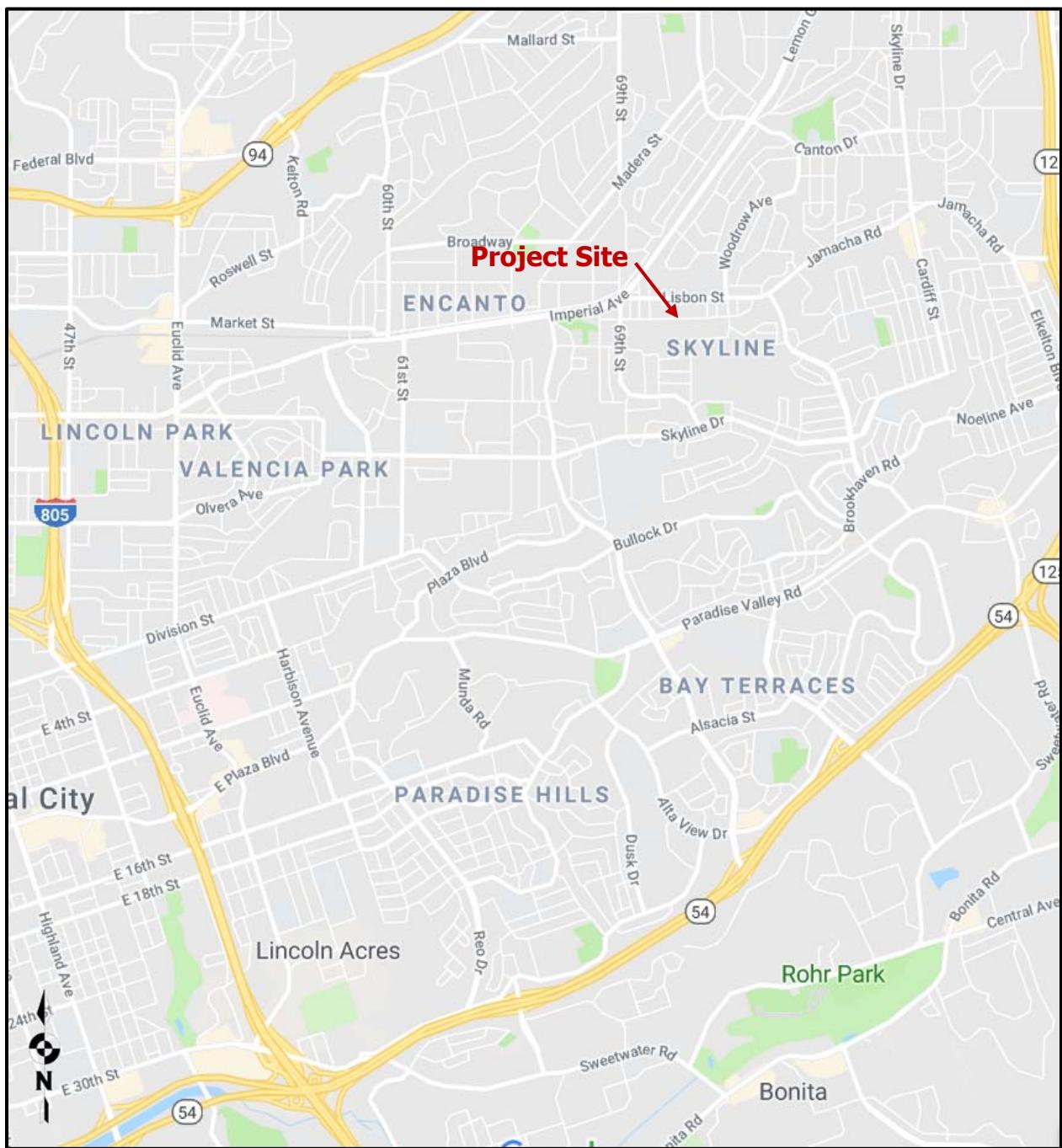
1.2 Project Location

The site is an existing vacant lot located with access to Lisbon Street between the nearest intersections of Lisbon and 71st and Lisbon and Woodrow Avenue within the community of Skyline in the City of San Diego. A general project vicinity map is shown in Figure 1-A.

1.3 Project Description

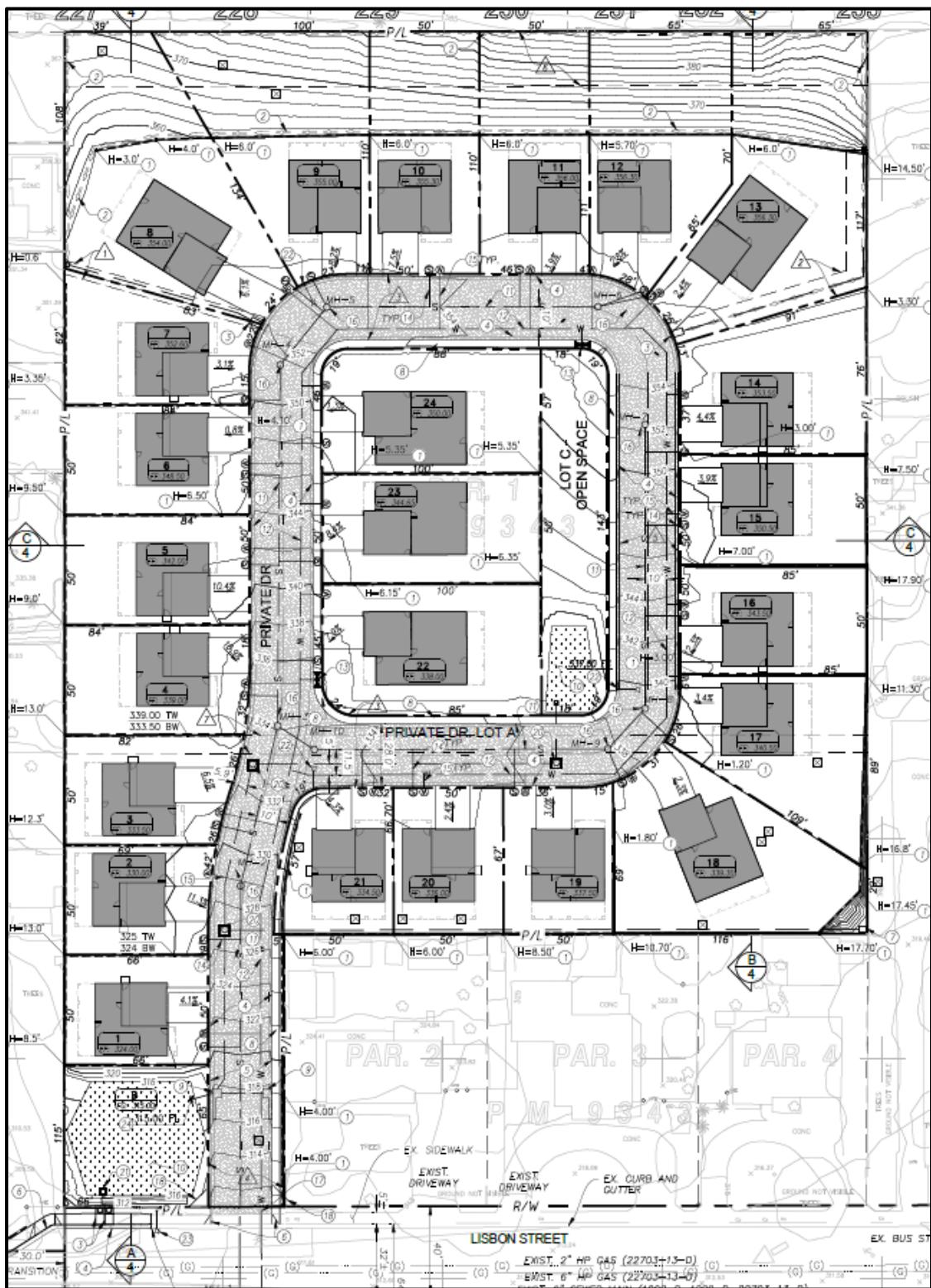
The project proposed seeks to construct 24 single family residential units on a 3.7-acre vacant site. The proposed project would start early 2020 and be completed roughly one year later. Full operations are expected in 2021. Earthwork onsite is expected to be balanced and no import or export will be required. The project development plan is shown on Figure 1-B of this report.

Figure 1-A: Project Vicinity Map



Source: (Google, 2019)

Figure 1-B: Proposed Project Site Development Plan



Source: (SWS Engineering Inc., 2019)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The Project site lies within the Skyline community within the City of San Diego which is located within the San Diego Air Basin (SDAB). The overall site consists of vacant land. Elevations within this area range from approximately 325 feet above Mean Sea Level (MSL) at its southern terminus to approximately 385 feet MSL towards the north of the project site.

The proposed project is surrounded by residential. The project site would have access to the MTS Bus Line route 4 (MTS, 2019) just along Lisbon Road which connects to Downtown San Diego.

2.2 Climate and Meteorology

Climate within the San Diego Air Basin (SDAB) area often varies dramatically over short geographical distances with cooler temperatures on the western coast gradually warming to the east as prevailing winds from the west heats up. Most of southern California is dominated by high-pressure systems for much of the year, which keeps San Diego mostly sunny and warm. Typically, during the winter months, the high-pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SDAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

Meteorological trends within the City of San Diego produce daytime highs typically ranging between 66°F in the winter to approximately 78°F in the summer with August usually being the hottest month. Median temperatures range from approximately 57°F in the winter to approximately 73°F in the summer. The average humidity is approximately 64% in the winter and about 75% in the summer (City-Data, 2019).

2.3 Regulatory Standards

2.3.1 Federal Standards and Definitions

The Federal Air Quality Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of national ambient air quality standards (NAAQS) for major air pollutants.

The Clean Air Act established two types of air quality standards otherwise known as primary and secondary standards. **Primary Standards** set limits for the intention of protecting public health, which includes sensitive populations such as people with asthma, children and elderly. **Secondary Standards** set limits to protect public welfare to include the protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. **Carbon Monoxide (CO):** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. **Lead (Pb):** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. **Nitrogen Dioxide (NO₂):** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO₂ is usually visible as a reddish-brown air layer over urban areas. NO₂ along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO₂ above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO₂ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.*
4. **Particulate Matter (PM₁₀ or PM_{2.5}):** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM₁₀ particles are 10 microns (μm) or less and PM_{2.5} particles are 2.5 (μm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.*
5. **Ozone (O₃):** *is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung*

inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.

6. **Sulfur Dioxide (SO_2):** is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.

2.3.2 State Standards and Definitions

The State of California Air Resources Board (ARB) sets the laws and regulations for air quality on the state level. The California Ambient Air Quality Standards (CAAQS) are either the same as or more restrictive than the NAAQS and also set limits for four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. The additional contaminants as regulated by the CAAQS are defined below:

1. **Visibility Reducing Particles:** Particles in the air that obstruct the visibility.
2. **Sulfates:** are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.
3. **Hydrogen Sulfide (H_2S):** is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some people with asthma. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 ppm) can cause a loss of consciousness and possibly death.
4. **Vinyl Chloride:** also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards											
Pollutant	Average Time	California Standards ¹		Federal Standards ²							
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷					
Ozone (O_3) ⁸	1 Hour	0.09 ppm (180 $\mu\text{g}/\text{m}^3$)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry					
	8 Hour	0.070 ppm (137 $\mu\text{g}/\text{m}^3$)		0.070 ppm (137 $\mu\text{g}/\text{m}^3$)							
Respirable Particulate Matter (PM10) ⁹	24 Hour	50 $\mu\text{g}/\text{m}^3$	Gravimetric or Beta Attenuation	150 $\mu\text{g}/\text{m}^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis					
	Annual Arithmetic Mean	20 $\mu\text{g}/\text{m}^3$		-							
Fine Particulate Matter (PM2.5) ⁹	24 Hour	No Separate State Standard		35 $\mu\text{g}/\text{m}^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis					
	Annual Arithmetic Mean	12 $\mu\text{g}/\text{m}^3$	Gravimetric or Beta Attenuation	12.0 $\mu\text{g}/\text{m}^3$							
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	-	Non-Dispersive Infrared Photometry					
	1 hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)							
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		-							
Nitrogen Dioxide (NO ₂) ¹⁰	Annual Arithmetic Mean	0.030 ppm (57 $\mu\text{g}/\text{m}^3$)	Gas Phase Chemiluminescence	0.053 ppm (100 $\mu\text{g}/\text{m}^3$) ⁸	Same as Primary Standard	Gas Phase Chemiluminescence					
	1 Hour	0.18 ppm (339 $\mu\text{g}/\text{m}^3$)		0.100 ppm ⁸ (188/ $\mu\text{g}/\text{m}^3$)							
Sulfur Dioxide (SO ₂) ¹¹	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm ¹⁰ (for Certain Areas)	-	Ultraviolet Fluorescence; Spectrophotometry (Pararoosaniline Method) ⁹					
	24 Hour	0.04 ppm (105 $\mu\text{g}/\text{m}^3$)		0.14 ppm ¹⁰ (for Certain Areas) (See Footnote 9)	-						
	3 Hour	-		-	0.5 ppm (1300 $\mu\text{g}/\text{m}^3$)						
	1 Hour	0.25 ppm (655 $\mu\text{g}/\text{m}^3$)		75 ppb (196 $\mu\text{g}/\text{m}^3$)	-						
Lead ^{12,13}	30 Day Average	1.5 $\mu\text{g}/\text{m}^3$	Atomic Absorption	-	-	-					
	Calendar Quarter	-		1.5 $\mu\text{g}/\text{m}^3$	Same as Primary Standard	High Volume Sampler and Atomic Absorption					
	Rolling 3-Month Average	-		0.15 $\mu\text{g}/\text{m}^3$							
Visibility Reducing Particles	8 Hour	See footnote 14									
Sulfates	24 Hour	25 $\mu\text{g}/\text{m}^3$	Ion Chromatography								
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu\text{g}/\text{m}^3$)	Ultraviolet Fluorescence								
Vinyl Chloride ¹²	24 Hour	0.01 ppm (26 $\mu\text{g}/\text{m}^3$)	Gas Chromatography								
<p>1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, 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.</p> <p>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 PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu\text{g}/\text{m}^3$ is equal to or less than one. For PM2.5, 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.</p> <p>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.</p> <p>4. Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.</p> <p>5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.</p> <p>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.</p> <p>7. Reference method as described by the 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 EPA.</p> <p>8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.</p> <p>9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu\text{g}/\text{m}^3$ to 12.0 $\mu\text{g}/\text{m}^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu\text{g}/\text{m}^3$, as was the annual secondary standard of 15 $\mu\text{g}/\text{m}^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu\text{g}/\text{m}^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.</p> <p>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 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard 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.</p> <p>11. On June 2, 2010, a new 1-hour SO₂ 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 SO₂ 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.</p> <p>12. The CARB 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.</p> <p>13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.</p> <p>14. In 1989, the CARB 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.</p>											
Source: (California Air Resources Board, 5/4/2016)											

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. California Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as "non-attainment areas" for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the PM_{2.5} standard and many areas are in non-attainment for PM₁₀ as well. The state therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed for California Air basins to attain ambient air quality standards.

The San Diego Air Pollution Control District (SDAPCD) is the government agency which regulates sources of air pollution within County. Therefore, the SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status for state ozone standards with control measures focused on Volatile Organic Compounds (VOCs) and oxides of nitrogen (NO_x). Currently, San Diego is in "non-attainment" status for federal and state O₃ and State PM₁₀, PM_{2.5}. An attainment plan is available for O₃. The RAQS was adopted in 1992 and has been updated as recently as 2016 which was the latest update incorporating minor changes to the prior 2009 update.

The 2016 update mostly summarizes how the 2009 update has lowered NOX and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing for discussion three new VOC and four new NOX reduction measures. NOX and VOCs are Ozone precursors and react organically to form Ozone. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years. A complete listing of the current attainment status with respect to both federal and state nonattainment status by pollutants for San Diego County is shown in Table 2.2 on the following page (SDAPCD, 2019).

The RAQS is largely based on population predictions by the San Diego Association of Governments (SANDAG). Projects that produce less growth than predicted by SANDAG would generally conform to the RAQS. Projects that create more growth than projected by SANDAG may create a significant impact if the project produces unmitigable air quality emissions or if the project produces cumulative impacts.

Table 2.2: San Diego County Air Basin Attainment Status by Pollutant

San Diego County Air Basin Attainment Status by Pollutant		
Criteria Pollutant	Federal Designation	State Designation
Ozone (8-Hour)	Nonattainment	Nonattainment
Ozone (1-Hour)	Attainment *	Nonattainment
Carbon Monoxide	Attainment	Attainment
PM10	Unclassifiable **	Nonattainment
PM2.5	Attainment	Nonattainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility	No Federal Standard	Unclassified

* The federal 1-hour standard of 12 pphm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.

** At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

2.4 California Environmental Quality Act (CEQA) Significance Thresholds

The California Environmental Quality Act Guidelines provide a checklist to identify the significance of air quality impacts. These guidelines are found in Appendix G of the CEQA guidelines and are as follows:

AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:

- A: Conflict with or obstruct implementation of the San Diego Regional Air Quality Strategy (RAQS) or applicable portions of the State Implementation Plan (SIP)?
- B: Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- C: 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 (PM₁₀, PM_{2.5} or exceed quantitative thresholds for O₃ precursors, oxides of nitrogen [NO_x] and Volatile Organic Compounds [VOCs])?

- D: Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations?
- E: *Create objectionable odors affecting a substantial number of people?*

2.5 SDAPCD Rule 20.2 – Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established thresholds in Rule 20.2 for new or modified stationary sources. The County's Guidelines for Determining Significance and Report Format and Content Requirements include screening level thresholds for all County related Air Quality Impact Assessments (AQIA) and for determining CEQA air quality impacts. These screening criteria can be used to demonstrate whether a project's total emissions would result in a significant impact as defined by CEQA. Also, since SDAPCD does not have AQIA threshold for Volatile Organic Compounds (VOCs), it is acceptable to use the Coachella Valley VOC threshold from the South Coast Air Quality Management District. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the project's total air quality impacts are below the state and federal ambient air quality standards. These daily screening thresholds for construction and operations are shown in Table 2.3 below.

Table 2.3: Screening Thresholds for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Respirable Particulate Matter (PM ₁₀ and PM _{2.5})	100 and 55
Nitrogen Oxide (NO _x)	250
Sulfur Oxide (SO _x)	250
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG) SCAQMD	75
Operational Emissions	
Respirable Particulate Matter (PM ₁₀ and PM _{2.5})	100 and 55
Nitrogen Oxide (NO _x)	250
Sulfur Oxide (SO _x)	250
Carbon Monoxide (CO)	550
Lead and Lead Compounds	3.2
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG) SCAQMD	75

Non Criteria pollutants such as Hazardous Air Pollutants (HAPs) or Toxic Air Contaminants (TACs) are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that propose to increase cancer risk to between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall the project increase the incremental cancer risk to over 10 in one million or a health hazard index (chronic and acute) greater than one since risks above. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology.

The U.S. EPA uses the term VOC and the CARB's Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same thing. There are minor deviations between compounds that define each term however for purposes of this study we will assume they are essentially the same due to the fact SCAQMD interchanges these words and because Air Quality models directly calculates ROG in place of VOC.

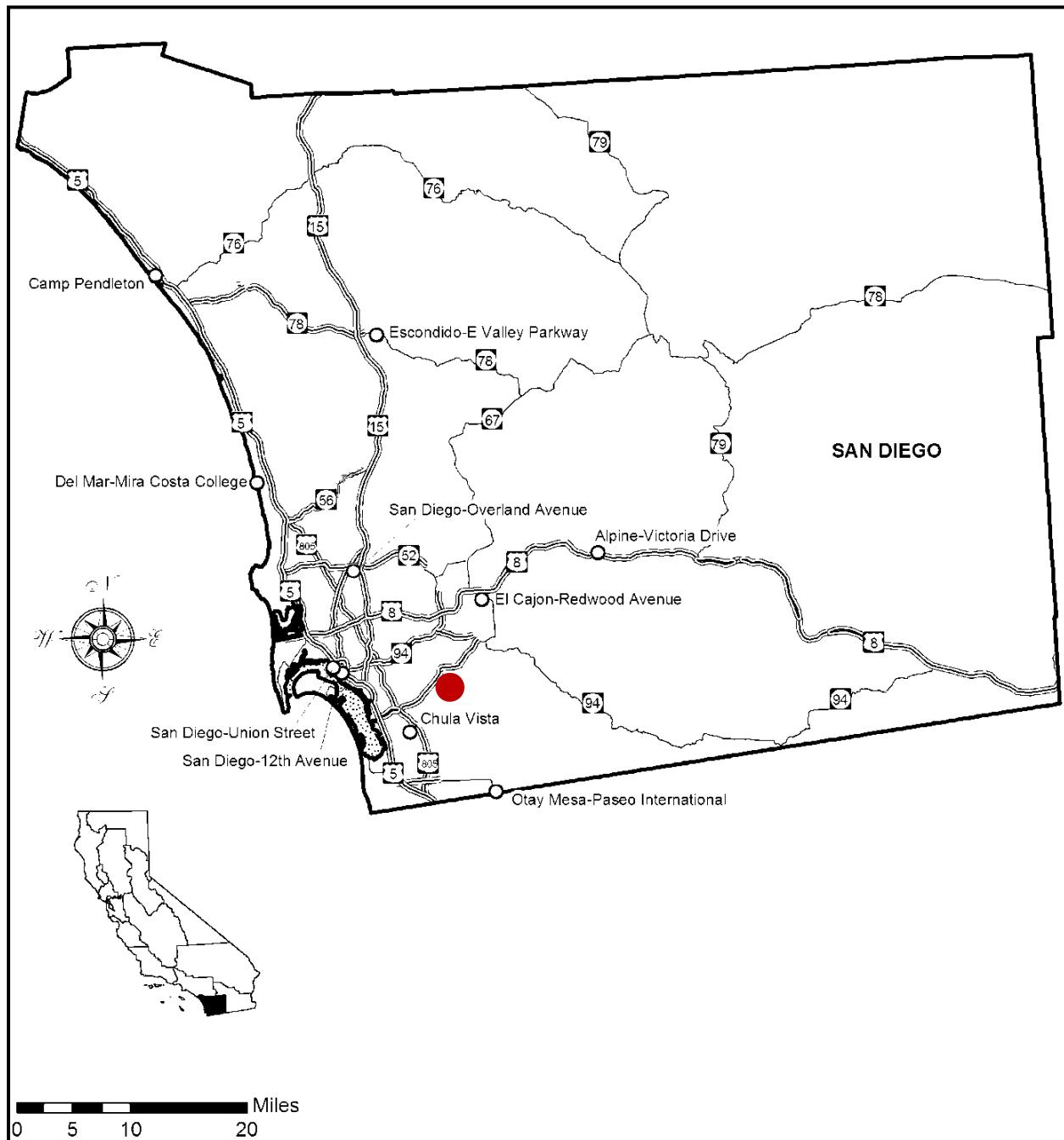
2.6 Local Air Quality

Criteria pollutants are measured continuously throughout the San Diego Air Basin. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS.

The SDAPCD is responsible for monitoring and reporting monitoring data. The District operates 10 monitoring sites, which collect data on criteria pollutants. Four additional sites collect meteorological data which is used by the District to assist with pollutant forecasting, data analysis and characterization of pollutant transport. Figure 2-A shows the relative locations of the monitoring sites.

SDAPCD published the five year air quality summary for all of the monitoring stations within the San Diego basin (SDAPCD, 2019). The proposed development project is closest to the El Cajon monitoring stations which is located approximately 8 miles from the Project site. Table 2.4 on page 18 identifies the criteria pollutants monitored at the aforementioned station.

Figure 2-A: Ambient Air Quality Monitoring Stations within SDAB – CARB



Source: (California Air Resources Board, 2014)

Table 2.4: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2015	2016	2017	2017 Days Exceeded
O ₃ (ppm)	El Cajon-Redwood Avenue	1 Hour	0.09 ppm	-	0.08	0.10	0.0	1
		8 Hour	0.070 ppm	0.070 ppm	0.07	0.08	0.08	9
		24 Hour	50 µg/m ³	150 µg/m ³	48	43	50	-
PM ₁₀ (µg/m ³)		Annual Arithmetic Mean	20 µg/m ³	-	21.9	22.6	22.5	-
PM _{2.5} (µg/m ³)		24 Hour	-	35 µg/m ³	24.7	23.9	31.8	-
		Annual Arithmetic Mean	12 µg/m ³	12 µg/m ³	8.2	9.3	9.5	-
NO ₂ (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.010	0.009	0.010	-
CO (ppm)		1 Hour	0.18 ppm	0.10 ppm	0.059	0.057	0.045	-
		1 Hour	20 ppm	35 ppm	1.4	1.7	1.5	-
		8 Hour	9 ppm	9 ppm	1.1	1.3	1.4	-

3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod 2016.3.2 air quality model, which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD) in 2017. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the project and uses methodologies presented in the U.S. EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in **Attachment A** to this report.

The AERMOD dispersion model will be used to determine the concentration for air pollutants at any location near the pollutant generator. Additionally, the model will predict the maximum exposure distance and concentrations. The notable toxic air contaminant from construction is diesel exhaust since exposure to diesel exhaust is known to cause cancer and acute and chronic health effects. Diesel exhaust emissions can be estimated using the annual PM₁₀ exhaust emissions from onsite construction operations obtained from the annual CalEEMod model output by summing each onsite source for the construction duration. The AERMOD input/output file for the proposed project is shown in **Attachment B** at the end of this report.

Once the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst-case cancer risk dose calculation is defined in Equation 1 below (OEHHA, February 2015):

Equation 1

$$Dose_{air} = C_{air} * (BR/BW) * A * EF * (1 \times 10^{-6})$$

Dose _{air}	=	Dose through inhalation (mg/kg/d)
		Concentration in air ($\mu\text{g}/\text{m}^3$) Annual average DPM concentration in $\mu\text{g}/\text{m}^3$ –
C _{air}	=	1-hr concentration are corrected to an annual average by multiplying the 1-hr average by 0.08 (US EPA, 1992)
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
1×10^{-6}	=	Milligrams to micrograms conversion (10^{-3} mg/ μg), cubic meters to liters conversion (10^{-3} m^3/l)

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. Specific factors as modeled are shown within the calculations section shown in Attachment **C** to this report. The worst-case cancer risk calculation is defined in Equation 2 below (OEHHA, February 2015):

Equation 2

$$\text{RISK}_{\text{inh-res}} = \text{DOSE}_{\text{air}} \times \text{CPF} \times \text{ASF} \times \text{ED/AT} \times \text{FAH}$$

RISK _{inh-res}	=	Residential inhalation cancer risk
DOSE _{air}	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor (mg/kg-day ⁻¹)
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

The California Office of Environmental Health Hazard Assessment (OEHHA) recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans.

Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9-and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years.

3.2 Construction Assumptions

The construction of the project would be within a 3.7-acre footprint. The proposed project would construct 24 single family residential units. The proposed construction schedule and construction equipment list are identified in Table 3.1.

Table 3.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Completion	Quantity
Site Preparation	01/29/2020	02/11/2020	
Tractors/Loaders/Backhoes			1
Grading	02/12/2020	12/29/2020	
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			1
Paving	04/01/2020	04/30/2020	
Cement and Mortar Mixers			2
Pavers			1
Paving Equipment			1
Rollers			1
Tractors/Loaders/Backhoes			1
Building Construction without Cranes	04/14/2020	12/29/2020	
Forklifts			2
Generator Sets			1
Tractors/Loaders/Backhoes			2
Welders			1
Building Construction Crane Use	01/29/2020	02/11/2020	
Cranes			1
Architectural Coating	02/12/2020	12/29/2020	
Air Compressors			1

3.3 Operational Emissions

Once construction is completed the proposed project would generate emissions from daily operations which would include sources such as Area, Energy, Mobile, Waste and Water uses, which are also calculated within CalEEMod. Area Sources include consumer products, landscaping and architectural coatings as part of regular maintenance. Energy sources would be from uses such as electricity and natural gas. Finally, mobile or transportation related emissions are calculated in CalEEMod through the use of EMFAC2011. The operational model is also included in CalEEMod **Attachments A** at the end of this report.

In the EMFAC model, the emission rates are multiplied with vehicle activity data provided by the regional transportation agencies to calculate the statewide or regional emission inventories. An emission inventory is based on the emission rate (e.g., grams per pollutant emitted over a mile) and vehicle activity (e.g., miles driven per day). Area sources originate from daily onsite uses, which require either burning fuel to generate energy (i.e. natural gas

fireplaces, gas furnaces, gas water heaters and small engines) or the evaporation of organic gases such as from paints (architectural coatings).

The CalEEMod model has default trip generation rates for single family residential uses and was included for this project. Also, it is assumed that all facilities will have access to both Natural Gas and electricity and that 10% of the structural surface area will be re-painted each year which are also default settings within CalEEMod.

Consumer product emissions are generated by a wide range of product categories, including air fresheners, automotive products, household cleaners, and personal care products. Emissions associated with these products primarily depend on the increased population associated with residential development. Default Consumer Product emission factors were used in the CalEEMod model. Architectural coatings would be compliant with San Diego's Rule 67 and would not exceed 100 g/l VOC.

3.4 Odor Impacts

Potential onsite odor generators would only be expected during short term construction activities such as paving and possibly painting however, the odors would be considered short term and would not have a potential to create offensive odors and would therefore not be considered an impact under CEQA.

4.0 FINDINGS

4.1 Construction Findings

Construction of the proposed project is expected to start sometime early 2020 and should be fully constructed roughly one year later. A tabulation of the construction emissions are shown in Table 4.1 below. Given these findings, no direct construction impacts are expected. Mitigation measures for criteria pollutants and fugitive dust from construction is not required. It should be noted that the grading contractor will be required to follow BMPs for grading and comply with all SDAPCD rules and regulations.

Table 4.1: Construction Emissions

Year	ROG	NO _x	CO	SO ₂	PM ₁₀ (Dust)	PM ₁₀ (Exhaust)	PM ₁₀ (Total)	PM _{2.5} (Dust)	PM _{2.5} (Exhaust)	PM _{2.5} (Total)
2020	5.04	19.78	16.24	0.03	6.35	1.02	7.24	3.36	0.97	4.18
Threshold (lb/day)	75	250	550	250	-	-	100	-	-	55
Exceeds Threshold	No	No	No	No	-	-	No	-	-	No

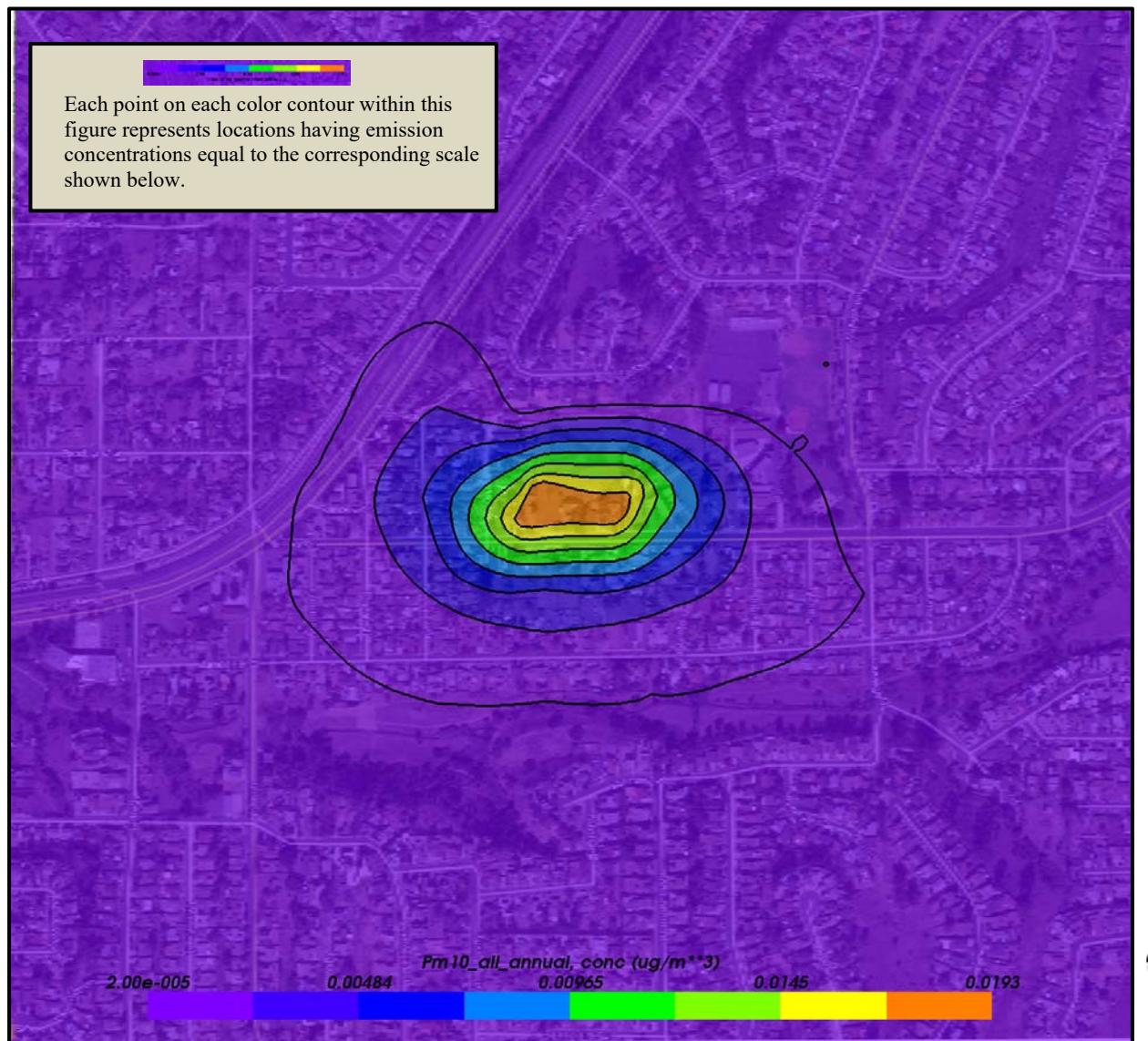
4.2 Health Risk

Based upon the air quality modeling, worst-case onsite PM10 from onsite construction exhaust would produce 0.00056 tons of onsite annual emissions over the construction duration (250-working days) or an average of 0.0000705 grams/second. The average emission rate over the grading area is 4.71x10⁻⁹ g/m²/s, which was calculated as follows:

$$\frac{0.0000705 \frac{\text{grams}}{\text{second}}}{3.7 \text{acres} * 4,046 \frac{\text{meters}^2}{\text{acre}}} = 4.71 * 10^{-9} \frac{\text{grams}}{\text{meters}^2 \text{second}}$$

Utilizing the AERMOD dispersion model, we find that the peak maximum annual concentration central to the project construction site is 0.0193 µg/m³. Using the methodology discussed above, the 30-year cancer risk would be 1.80 individuals per million exposed which would not be considered a significant impact. The calculations for cancer risks are provided in **Attachment C** to this report. Figure 4-A shows a contour plot showing the expected emission concentrations calculated by AERMOD using a gridded discreet receptor methodology.

Figure 4-A: On-Site Construction Diesel Particulates Dispersion Model



4.3 Operational Findings

The CALEEMOD 2013.2.2 Model was run for both the winter and summer scenarios and assumed average winter and summer temperatures and a 5.8 mile trip distance.

The expected daily pollutant generation can be calculated utilizing the product of the average daily miles traveled and the expected emissions inventory calculated by CALEEMOD 2016.3.2 utilizing emissions from EMFAC2011. Tables 4.2 identify air quality emissions from the existing project and the proposed project as well as the proposed project increase once the project is fully developed. Based on these results the project would generate less than significant operational impacts. It should be noted that the project is nearby to a bus stop serviced by route 4 (MTS, 2019) which would reduce operational emissions however no reductions were taken.

Table 4.2: Expected Daily Operational Air Quality Emissions

	ROG	NO _x	CO	SO _x	PM ₁₀
Summer Scenario					
Operational Emission Estimates (Lb/Day)	38.300	2.605	52.370	0.100	7.836
SDAPCD Thresholds	75	250	550	250	100
Significant?	No	No	No	No	No
Winter Scenario					
Operational Estimates (Lb/Day)	38.288	2.655	52.276	0.099	7.836
Significant?	No	No	No	No	No
Daily pollutant generation assumes trip distances within CalEEMod 2016					

4.4 Odor Impact Findings

Odor impacts from construction operations would be considered short term and would not be considered an impact.

4.5 Cumulative Construction Impact Findings

The proposed project would have a potential to cumulatively increase air quality emissions in excess of screening criteria if more than one construction project were simultaneously being constructed and if both projects were close in proximity. For this relatively small construction project (24 units on a 3.7-acre project site) emissions are at least 12 times lower than screening thresholds allow. Given this, a cumulative impact would require that cumulative projects would need to be significantly more intense. Since the area around the project is

mostly built out, simultaneous construction of this project with any sizable construction projects in the area is not expected. Based on this, cumulative construction impacts would be less than significant.

4.6 Regional Air Quality Strategy and Operational Cumulative Compliance

The proposed project is a proposed residential development would construct 24 residences within a 3.7 acre footprint. The project site is currently zone RS-1-7 and would not require a rezone. Given this, the Project would be consistent with the City's General Plan and would have been considered within the Regional Air Quality Strategy (RAQS). Therefore, since no air quality impacts are expected the proposed project would not conflict with or obstruct the RAQS or State Implementation Plan (SIP) and would be consistent with growth in the region. Also, since no direct impacts are expected and since the project would be compatible with both the RAQS and SIP, no cumulative operational impacts are expected.

4.7 Summary of Findings

Based upon this analysis, no direct or cumulative criteria or fugitive dust impacts are expected from construction. Therefore, mitigation measures for criteria pollutants and fugitive dust from construction are not required. It should be noted that the grading contractor will be required to follow BMPs for grading and comply with all SDAPCD rules.

A diesel particulate health risk analysis was conducted, and based on diesel exhaust emission quantities, the proposed project would not create significant diesel particulate health risk impacts. The project would however be required to comply with all applicable regulations that would preclude any impact. No combined cumulative construction impacts are expected because nearby construction projects would not be close enough or large enough to cause air quality mixing sufficient to exceed air quality thresholds.

Based upon the operational analysis, the proposed project would generate less than significant impacts.

The project site is currently zone RS-1-7 and would not require a rezone in order to increase to the proposed density. Given this, the Project would be consistent with the City's General Plan and would have been considered within the Regional Air Quality Strategy (RAQS). Therefore, the proposed project would not conflict with or obstruct the RAQS or State Implementation Plan (SIP) and would be consistent with growth in the region.

Finally, odor impacts from construction operations would be expected though would be considered short-term events and would not be considered a significant impact.

5.0 REFERENCES

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ATTACHMENT A

CALEEMOD 2016.3.2 – Summer, Winter, Annual

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

Lisbon Heights - 24-Unit Single Family
San Diego County, Summer**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	24.00	Dwelling Unit	3.70	43,200.00	69

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

Project Characteristics -

Land Use - 3.7 acre site

Construction Phase - PE

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - pe

Trips and VMT -

Grading - site is 3.7 acres

Architectural Coating - Rule 67 Paint

Vehicle Trips - 100% correction in trip percentage

Woodstoves -

Area Coating - Rule 67 Paint

Water And Wastewater -

Construction Off-road Equipment Mitigation - Tier IV is standard equipment now

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	Number Of Equipment Mitigated	0.00	1.00
tblConstEquipMitigation	Number Of Equipment Mitigated	0.00	2.00
tblConstEquipMitigation	Number Of Equipment Mitigated	0.00	1.00
tblConstEquipMitigation	Number Of Equipment Mitigated	0.00	2.00
tblConstEquipMitigation	Number Of Equipment Mitigated	0.00	1.00
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tblConstEquipMitigation	Number Of Equipment Mitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	8.00	15.00
tblConstructionPhase	NumDays	18.00	10.00
tblConstructionPhase	NumDays	230.00	22.00
tblConstructionPhase	NumDays	18.00	186.00
tblGrading	AcresOfGrading	7.50	3.70
tblLandUse	LotAcreage	7.79	3.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblSolidWaste	SolidWasteGenerationRate	28.29	25.83
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HS_TTP	18.80	18.00
tblVehicleTrips	HW_TTP	41.60	42.00

2.0 Emissions Summary

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

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			
2020	5.0371	19.7827	16.2442	0.0290	6.3494	1.0193	7.2402	3.3559	0.9694	4.1754	0.0000	2,768.281 3	2,768.281 3	0.5747	0.0000	2,781.523 9
Maximum	5.0371	19.7827	16.2442	0.0290	6.3494	1.0193	7.2402	3.3559	0.9694	4.1754	0.0000	2,768.281 3	2,768.281 3	0.5747	0.0000	2,781.523 9

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			
2020	3.3079	2.8638	16.8211	0.0290	6.3494	0.0101	6.3543	3.3559	9.9000e-003	3.3608	0.0000	2,768.281 3	2,768.281 3	0.5747	0.0000	2,781.523 9
Maximum	3.3079	2.8638	16.8211	0.0290	6.3494	0.0101	6.3543	3.3559	9.9000e-003	3.3608	0.0000	2,768.281 3	2,768.281 3	0.5747	0.0000	2,781.523 9

	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
Percent Reduction	34.33	85.52	-3.55	0.00	0.00	99.01	12.24	0.00	98.98	19.51	0.00	0.00	0.00	0.00	0.00	0.00

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

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	37.8622	0.7402	47.3229	0.0823		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030	
Energy	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	
Mobile	0.4212	1.7225	4.9867	0.0172	1.4424	0.0139	1.4564	0.3855	0.0130	0.3986		1,742.5906	1,742.5906	0.0892		1,744.8194	
Total	38.3000	2.6045	52.3699	0.1003	1.4424	6.3932	7.8357	0.3855	6.3923	6.7779	666.5215	2,206.5994	2,873.1210	0.7112	0.0558	2,907.5117	

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	37.8622	0.7402	47.3229	0.0823		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030	
Energy	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	
Mobile	0.4212	1.7225	4.9867	0.0172	1.4424	0.0139	1.4564	0.3855	0.0130	0.3986		1,742.5906	1,742.5906	0.0892		1,744.8194	
Total	38.3000	2.6045	52.3699	0.1003	1.4424	6.3932	7.8357	0.3855	6.3923	6.7779	666.5215	2,206.5994	2,873.1210	0.7112	0.0558	2,907.5117	

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	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	1/1/2020	1/7/2020	5	5	
2	Grading	Grading	1/8/2020	1/28/2020	5	15	
3	Paving	Paving	1/29/2020	2/11/2020	5	10	
4	Building Construction without cranes	Building Construction	2/12/2020	12/29/2020	5	230	
5	Crane Use	Building Construction	4/1/2020	4/30/2020	5	22	
6	Architectural Coating	Architectural Coating	4/14/2020	12/29/2020	5	186	

Acres of Grading (Site Preparation Phase): 3.7

Acres of Grading (Grading Phase): 3.7

Acres of Paving: 0

Residential Indoor: 87,480; Residential Outdoor: 29,160; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction without cranes	Forklifts	2	8.00	89	0.20
Building Construction without cranes	Generator Sets	1	8.00	84	0.74
Building Construction without cranes	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction without cranes	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	6.00	132	0.36
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Crane Use	Cranes	1	7.00	231	0.29
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	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction without cranes	6	9.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Crane Use	1	9.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2020**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					0.7848	0.0000	0.7848	0.0847	0.0000	0.0847			0.0000			0.0000
Off-Road	0.2095	2.1052	2.2797	3.1100e-003		0.1331	0.1331		0.1225	0.1225		300.7685	300.7685	0.0973		303.2004
Total	0.2095	2.1052	2.2797	3.1100e-003	0.7848	0.1331	0.9179	0.0847	0.1225	0.2072		300.7685	300.7685	0.0973		303.2004

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.2 Site Preparation - 2020**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	0.0110	7.4200e-003	0.0850	2.5000e-004	0.0246	1.7000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		25.2824	25.2824	7.5000e-004		25.3013	
Total	0.0110	7.4200e-003	0.0850	2.5000e-004	0.0246	1.7000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		25.2824	25.2824	7.5000e-004		25.3013	

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					0.7848	0.0000	0.7848	0.0847	0.0000	0.0847		0.0000	0.0000			0.0000	
Off-Road	0.0380	0.1646	2.3421	3.1100e-003		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	300.7685	300.7685	0.0973		303.2004	
Total	0.0380	0.1646	2.3421	3.1100e-003	0.7848	7.6000e-004	0.7855	0.0847	7.6000e-004	0.0855	0.0000	300.7685	300.7685	0.0973		303.2004	

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.2 Site Preparation - 2020**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	0.0110	7.4200e-003	0.0850	2.5000e-004	0.0246	1.7000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		25.2824	25.2824	7.5000e-004		25.3013	
Total	0.0110	7.4200e-003	0.0850	2.5000e-004	0.0246	1.7000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		25.2824	25.2824	7.5000e-004		25.3013	

3.3 Grading - 2020**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					6.2837	0.0000	6.2837	3.3385	0.0000	3.3385		0.0000				0.0000
Off-Road	1.7648	19.7629	8.2258	0.0183		0.8903	0.8903		0.8191	0.8191		1,770.8297	1,770.8297	0.5727		1,785.1477
Total	1.7648	19.7629	8.2258	0.0183	6.2837	0.8903	7.1740	3.3385	0.8191	4.1576		1,770.8297	1,770.8297	0.5727		1,785.1477

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.3 Grading - 2020**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	0.0294	0.0198	0.2268	6.8000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		67.4198	67.4198	2.0100e-003		67.4701	
Total	0.0294	0.0198	0.2268	6.8000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		67.4198	67.4198	2.0100e-003		67.4701	

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					6.2837	0.0000	6.2837	3.3385	0.0000	3.3385		0.0000				0.0000	
Off-Road	0.2237	0.9692	9.1505	0.0183		4.4700e-003	4.4700e-003		4.4700e-003	4.4700e-003	0.0000	1,770.8297	1,770.8297	0.5727		1,785.1477	
Total	0.2237	0.9692	9.1505	0.0183	6.2837	4.4700e-003	6.2882	3.3385	4.4700e-003	3.3429	0.0000	1,770.8297	1,770.8297	0.5727		1,785.1477	

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.3 Grading - 2020**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	0.0294	0.0198	0.2268	6.8000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		67.4198	67.4198	2.0100e-003		67.4701	
Total	0.0294	0.0198	0.2268	6.8000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		67.4198	67.4198	2.0100e-003		67.4701	

3.4 Paving - 2020**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	0.8720	8.6346	8.9615	0.0139		0.4710	0.4710		0.4351	0.4351		1,318.261 1	1,318.261 1	0.4097		1,328.503 9	
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000	
Total	0.8720	8.6346	8.9615	0.0139		0.4710	0.4710		0.4351	0.4351		1,318.261 1	1,318.261 1	0.4097		1,328.503 9	

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.4 Paving - 2020**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	0.0550	0.0371	0.4252	1.2700e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		126.4121	126.4121	3.7700e-003		126.5064	
Total	0.0550	0.0371	0.4252	1.2700e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		126.4121	126.4121	3.7700e-003		126.5064	

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	0.1576	0.6829	9.7187	0.0139		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003	0.0000	1,318.261	1,318.261	0.4097		1,328.503
Paving	0.0000					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000
Total	0.1576	0.6829	9.7187	0.0139		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003	0.0000	1,318.261	1,318.261	0.4097		1,328.503

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3.4 Paving - 2020**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	0.0550	0.0371	0.4252	1.2700e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		126.4121	126.4121	3.7700e-003		126.5064	
Total	0.0550	0.0371	0.4252	1.2700e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		126.4121	126.4121	3.7700e-003		126.5064	

3.5 Building Construction without cranes - 2020**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	1.3958	11.3290	11.8226	0.0176		0.7094	0.7094		0.6753	0.6753		1,652.918 9	1,652.918 9	0.3317		1,661.212 2	
Total	1.3958	11.3290	11.8226	0.0176		0.7094	0.7094		0.6753	0.6753		1,652.918 9	1,652.918 9	0.3317		1,661.212 2	

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.5 Building Construction without cranes - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0112	0.3383	0.0862	8.2000e-004	0.0203	1.6600e-003	0.0220	5.8500e-003	1.5800e-003	7.4300e-003	88.2120	88.2120	6.5100e-003	88.3747			
Worker	0.0330	0.0223	0.2551	7.6000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201	75.8472	75.8472	2.2600e-003	75.9039			
Total	0.0442	0.3605	0.3413	1.5800e-003	0.0942	2.1800e-003	0.0964	0.0255	2.0600e-003	0.0275	164.0593	164.0593	8.7700e-003			164.2786	

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	0.2137	1.7403	11.9750	0.0176		3.8400e-003	3.8400e-003	3.8400e-003	3.8400e-003	0.0000	1,652.9189	1,652.9189	0.3317			1,661.2122	
Total	0.2137	1.7403	11.9750	0.0176		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	1,652.9189	1,652.9189	0.3317		1,661.2122	

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3.5 Building Construction without cranes - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0112	0.3383	0.0862	8.2000e-004	0.0203	1.6600e-003	0.0220	5.8500e-003	1.5800e-003	7.4300e-003	88.2120	88.2120	6.5100e-003	88.3747			
Worker	0.0330	0.0223	0.2551	7.6000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201	75.8472	75.8472	2.2600e-003	75.9039			
Total	0.0442	0.3605	0.3413	1.5800e-003	0.0942	2.1800e-003	0.0964	0.0255	2.0600e-003	0.0275	164.0593	164.0593	8.7700e-003			164.2786	

3.6 Crane Use - 2020**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	0.3967	4.7176	1.8509	5.0500e-003		0.1945	0.1945		0.1789	0.1789	488.9409	488.9409	0.1581			492.8943	
Total	0.3967	4.7176	1.8509	5.0500e-003		0.1945	0.1945		0.1789	0.1789	488.9409	488.9409	0.1581			492.8943	

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.6 Crane Use - 2020**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	0.0112	0.3383	0.0862	8.2000e-004	0.0203	1.6600e-003	0.0220	5.8500e-003	1.5800e-003	7.4300e-003		88.2120	88.2120	6.5100e-003		88.3747	
Worker	0.0330	0.0223	0.2551	7.6000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201		75.8472	75.8472	2.2600e-003		75.9039	
Total	0.0442	0.3605	0.3413	1.5800e-003	0.0942	2.1800e-003	0.0964	0.0255	2.0600e-003	0.0275		164.0593	164.0593	8.7700e-003		164.2786	

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	0.0620	0.2688	2.2744	5.0500e-003		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	488.9409	488.9409	0.1581		492.8943	
Total	0.0620	0.2688	2.2744	5.0500e-003		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	488.9409	488.9409	0.1581		492.8943	

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.6 Crane Use - 2020**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	0.0112	0.3383	0.0862	8.2000e-004	0.0203	1.6600e-003	0.0220	5.8500e-003	1.5800e-003	7.4300e-003			88.2120	88.2120	6.5100e-003		88.3747
Worker	0.0330	0.0223	0.2551	7.6000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201			75.8472	75.8472	2.2600e-003		75.9039
Total	0.0442	0.3605	0.3413	1.5800e-003	0.0942	2.1800e-003	0.0964	0.0255	2.0600e-003	0.0275			164.0593	164.0593	8.7700e-003		164.2786

3.7 Architectural Coating - 2020**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	2.9066						0.0000	0.0000		0.0000	0.0000			0.0000		0.0000	
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109			281.4481	281.4481	0.0218		281.9928
Total	3.1488	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109			281.4481	281.4481	0.0218		281.9928

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.7 Architectural Coating - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	7.3400e-003	4.9400e-003	0.0567	1.7000e-004	0.0164	1.2000e-004	0.0165	4.3600e-003	1.1000e-004	4.4600e-003	16.8549	16.8549	5.0000e-004	16.8675			
Total	7.3400e-003	4.9400e-003	0.0567	1.7000e-004	0.0164	1.2000e-004	0.0165	4.3600e-003	1.1000e-004	4.4600e-003	16.8549	16.8549	5.0000e-004	16.8675			

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	2.9066						0.0000	0.0000		0.0000	0.0000		0.0000			0.0000	
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0218		281.9928	
Total	2.9363	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0218		281.9928	

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

3.7 Architectural Coating - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	7.3400e-003	4.9400e-003	0.0567	1.7000e-004	0.0164	1.2000e-004	0.0165	4.3600e-003	1.1000e-004	4.4600e-003	16.8549	16.8549	5.0000e-004			16.8675	
Total	7.3400e-003	4.9400e-003	0.0567	1.7000e-004	0.0164	1.2000e-004	0.0165	4.3600e-003	1.1000e-004	4.4600e-003	16.8549	16.8549	5.0000e-004			16.8675	

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

	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	0.4212	1.7225	4.9867	0.0172	1.4424	0.0139	1.4564	0.3855	0.0130	0.3986	1,742.590 6	1,742.590 6	0.0892		1,744.819 4		
Unmitigated	0.4212	1.7225	4.9867	0.0172	1.4424	0.0139	1.4564	0.3855	0.0130	0.3986	1,742.590 6	1,742.590 6	0.0892		1,744.819 4		

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT	Annual VMT	Annual VMT
Single Family Housing	228.48	237.84	206.88	648,471	648,471	648,471	648,471
Total	228.48	237.84	206.88	648,471	648,471	648,471	648,471

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Single Family Housing	10.80	7.30	7.50	42.00	18.00	40.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

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	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	
NaturalGas Unmitigated	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day											lb/day					
Single Family Housing	1537.77	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	
Total		0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

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					
Single Family Housing	1.53777	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115	180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	
Total		0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892

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	37.8622	0.7402	47.3229	0.0823		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030
Unmitigated	37.8622	0.7402	47.3229	0.0823		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

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	0.1481					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9245					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	36.7295	0.7173	45.3386	0.0821		6.3569	6.3569		6.3569	6.3569	666.5215	279.5294	946.0510	0.6151	0.0524	977.0514
Landscaping	0.0601	0.0229	1.9843	1.0000e-004		0.0109	0.0109		0.0109	0.0109		3.5653	3.5653	3.4500e-003		3.6516
Total	37.8622	0.7402	47.3229	0.0822		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1481					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9245					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	36.7295	0.7173	45.3386	0.0821		6.3569	6.3569		6.3569	6.3569	666.5215	279.5294	946.0510	0.6151	0.0524	977.0514
Landscaping	0.0601	0.0229	1.9843	1.0000e-004		0.0109	0.0109		0.0109	0.0109		3.5653	3.5653	3.4500e-003		3.6516
Total	37.8622	0.7402	47.3229	0.0822		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030

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
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10.0 Stationary Equipment

Lisbon Heights - 24-Unit Single Family - San Diego County, Summer

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

Lisbon Heights - 24-Unit Single Family
San Diego County, Winter**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	24.00	Dwelling Unit	3.70	43,200.00	69

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

Project Characteristics -

Land Use - 3.7 acre site

Construction Phase - PE

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - pe

Trips and VMT -

Grading - site is 3.7 acres

Architectural Coating - Rule 67 Paint

Vehicle Trips - 100% correction in trip percentage

Woodstoves -

Area Coating - Rule 67 Paint

Water And Wastewater -

Construction Off-road Equipment Mitigation - Tier IV is standard equipment now

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	8.00	15.00
tblConstructionPhase	NumDays	18.00	10.00
tblConstructionPhase	NumDays	230.00	22.00
tblConstructionPhase	NumDays	18.00	186.00
tblGrading	AcresOfGrading	7.50	3.70
tblLandUse	LotAcreage	7.79	3.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblSolidWaste	SolidWasteGenerationRate	28.29	25.83
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HS_TTP	18.80	18.00
tblVehicleTrips	HW_TTP	41.60	42.00

2.0 Emissions Summary

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

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			
2020	5.0479	19.7852	16.2307	0.0288	6.3494	1.0194	7.2402	3.3559	0.9695	4.1754	0.0000	2,753.411 6	2,753.411 6	0.5746	0.0000	2,766.667 8
Maximum	5.0479	19.7852	16.2307	0.0288	6.3494	1.0194	7.2402	3.3559	0.9695	4.1754	0.0000	2,753.411 6	2,753.411 6	0.5746	0.0000	2,766.667 8

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			
2020	3.3187	2.8694	16.8076	0.0288	6.3494	0.0102	6.3543	3.3559	9.9600e-003	3.3608	0.0000	2,753.411 6	2,753.411 6	0.5746	0.0000	2,766.667 8
Maximum	3.3187	2.8694	16.8076	0.0288	6.3494	0.0102	6.3543	3.3559	9.9600e-003	3.3608	0.0000	2,753.411 6	2,753.411 6	0.5746	0.0000	2,766.667 8

	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
Percent Reduction	34.26	85.50	-3.55	0.00	0.00	99.00	12.24	0.00	98.97	19.51	0.00	0.00	0.00	0.00	0.00	0.00

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

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	37.8622	0.7402	47.3229	0.0823		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030	
Energy	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	
Mobile	0.4091	1.7732	4.8931	0.0163	1.4424	0.0140	1.4565	0.3855	0.0131	0.3986		1,652.7397	1,652.7397	0.0894		1,654.9748	
Total	38.2878	2.6551	52.2763	0.0994	1.4424	6.3933	7.8358	0.3855	6.3924	6.7779	666.5215	2,116.7485	2,783.2701	0.7114	0.0558	2,817.6670	

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	37.8622	0.7402	47.3229	0.0823		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030	
Energy	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	
Mobile	0.4091	1.7732	4.8931	0.0163	1.4424	0.0140	1.4565	0.3855	0.0131	0.3986		1,652.7397	1,652.7397	0.0894		1,654.9748	
Total	38.2878	2.6551	52.2763	0.0994	1.4424	6.3933	7.8358	0.3855	6.3924	6.7779	666.5215	2,116.7485	2,783.2701	0.7114	0.0558	2,817.6670	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

	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	1/1/2020	1/7/2020	5	5	
2	Grading	Grading	1/8/2020	1/28/2020	5	15	
3	Paving	Paving	1/29/2020	2/11/2020	5	10	
4	Building Construction without cranes	Building Construction	2/12/2020	12/29/2020	5	230	
5	Crane Use	Building Construction	4/1/2020	4/30/2020	5	22	
6	Architectural Coating	Architectural Coating	4/14/2020	12/29/2020	5	186	

Acres of Grading (Site Preparation Phase): 3.7

Acres of Grading (Grading Phase): 3.7

Acres of Paving: 0

Residential Indoor: 87,480; Residential Outdoor: 29,160; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction without cranes	Forklifts	2	8.00	89	0.20
Building Construction without cranes	Generator Sets	1	8.00	84	0.74
Building Construction without cranes	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction without cranes	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	6.00	132	0.36
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Crane Use	Cranes	1	7.00	231	0.29
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	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction without cranes	6	9.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Crane Use	1	9.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2020**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					0.7848	0.0000	0.7848	0.0847	0.0000	0.0847			0.0000			0.0000
Off-Road	0.2095	2.1052	2.2797	3.1100e-003		0.1331	0.1331		0.1225	0.1225		300.7685	300.7685	0.0973		303.2004
Total	0.2095	2.1052	2.2797	3.1100e-003	0.7848	0.1331	0.9179	0.0847	0.1225	0.2072		300.7685	300.7685	0.0973		303.2004

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.2 Site Preparation - 2020**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	0.0125	8.3300e-003	0.0802	2.4000e-004	0.0246	1.7000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		23.7340	23.7340	7.1000e-004		23.7518	
Total	0.0125	8.3300e-003	0.0802	2.4000e-004	0.0246	1.7000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003		23.7340	23.7340	7.1000e-004		23.7518	

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					0.7848	0.0000	0.7848	0.0847	0.0000	0.0847		0.0000	0.0000			0.0000	
Off-Road	0.0380	0.1646	2.3421	3.1100e-003		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	300.7685	300.7685	0.0973		303.2004	
Total	0.0380	0.1646	2.3421	3.1100e-003	0.7848	7.6000e-004	0.7855	0.0847	7.6000e-004	0.0855	0.0000	300.7685	300.7685	0.0973		303.2004	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.2 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	0.0125	8.3300e-003	0.0802	2.4000e-004	0.0246	1.7000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003	23.7340	23.7340	7.1000e-004	23.7518			
Total	0.0125	8.3300e-003	0.0802	2.4000e-004	0.0246	1.7000e-004	0.0248	6.5400e-003	1.6000e-004	6.7000e-003	23.7340	23.7340	7.1000e-004	23.7518			

3.3 Grading - 2020**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					6.2837	0.0000	6.2837	3.3385	0.0000	3.3385	0.0000	0.0000			0.0000	
Off-Road	1.7648	19.7629	8.2258	0.0183		0.8903	0.8903		0.8191	0.8191	1,770.8297	1,770.8297	0.5727			1,785.1477
Total	1.7648	19.7629	8.2258	0.0183	6.2837	0.8903	7.1740	3.3385	0.8191	4.1576	1,770.8297	1,770.8297	0.5727			1,785.1477

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.3 Grading - 2020**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	0.0333	0.0222	0.2138	6.4000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		63.2906	63.2906	1.9100e-003		63.3382	
Total	0.0333	0.0222	0.2138	6.4000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179		63.2906	63.2906	1.9100e-003		63.3382	

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					6.2837	0.0000	6.2837	3.3385	0.0000	3.3385		0.0000				0.0000	
Off-Road	0.2237	0.9692	9.1505	0.0183		4.4700e-003	4.4700e-003		4.4700e-003	4.4700e-003	0.0000	1,770.8297	1,770.8297	0.5727		1,785.1477	
Total	0.2237	0.9692	9.1505	0.0183	6.2837	4.4700e-003	6.2882	3.3385	4.4700e-003	3.3429	0.0000	1,770.8297	1,770.8297	0.5727		1,785.1477	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.3 Grading - 2020**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	0.0333	0.0222	0.2138	6.4000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179			63.2906	63.2906	1.9100e-003	63.3382	
Total	0.0333	0.0222	0.2138	6.4000e-004	0.0657	4.6000e-004	0.0662	0.0174	4.2000e-004	0.0179			63.2906	63.2906	1.9100e-003	63.3382	

3.4 Paving - 2020**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	0.8720	8.6346	8.9615	0.0139		0.4710	0.4710		0.4351	0.4351		1,318.261 1	1,318.261 1	0.4097		1,328.503 9	
Paving	0.0000					0.0000	0.0000		0.0000	0.0000				0.0000		0.0000	
Total	0.8720	8.6346	8.9615	0.0139		0.4710	0.4710		0.4351	0.4351		1,318.261 1	1,318.261 1	0.4097		1,328.503 9	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.4 Paving - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000	
Worker	0.0623	0.0416	0.4009	1.1900e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		118.6698	118.6698	3.5700e-003		118.7591	
Total	0.0623	0.0416	0.4009	1.1900e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		118.6698	118.6698	3.5700e-003		118.7591	

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	0.1576	0.6829	9.7187	0.0139		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003	0.0000	1,318.261	1,318.261	0.4097		1,328.503	
Paving	0.0000					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000			0.0000	
Total	0.1576	0.6829	9.7187	0.0139		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003	0.0000	1,318.261	1,318.261	0.4097		1,328.503	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.4 Paving - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	0.0623	0.0416	0.4009	1.1900e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335	118.6698	118.6698	3.5700e-003	118.7591			
Total	0.0623	0.0416	0.4009	1.1900e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		118.6698	118.6698	3.5700e-003		118.7591	

3.5 Building Construction without cranes - 2020**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	1.3958	11.3290	11.8226	0.0176		0.7094	0.7094		0.6753	0.6753	1,652.918 9	1,652.918 9	0.3317			1,661.212 2	
Total	1.3958	11.3290	11.8226	0.0176		0.7094	0.7094		0.6753	0.6753		1,652.918 9	1,652.918 9	0.3317		1,661.212 2	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.5 Building Construction without cranes - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0117	0.3380	0.0956	8.0000e-004	0.0203	1.6900e-003	0.0220	5.8500e-003	1.6100e-003	7.4600e-003	85.9387	85.9387	6.9200e-003	86.1116			
Worker	0.0374	0.0250	0.2405	7.1000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201	71.2019	71.2019	2.1400e-003	71.2555			
Total	0.0491	0.3630	0.3362	1.5100e-003	0.0942	2.2100e-003	0.0965	0.0255	2.0900e-003	0.0276		157.1405	157.1405	9.0600e-003		157.3670	

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	0.2137	1.7403	11.9750	0.0176		3.8400e-003	3.8400e-003	3.8400e-003	3.8400e-003	0.0000	1,652.9189	1,652.9189	0.3317			1,661.2122	
Total	0.2137	1.7403	11.9750	0.0176		3.8400e-003	3.8400e-003		3.8400e-003	3.8400e-003	0.0000	1,652.9189	1,652.9189	0.3317		1,661.2122	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.5 Building Construction without cranes - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0117	0.3380	0.0956	8.0000e-004	0.0203	1.6900e-003	0.0220	5.8500e-003	1.6100e-003	7.4600e-003	85.9387	85.9387	6.9200e-003	86.1116			
Worker	0.0374	0.0250	0.2405	7.1000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201	71.2019	71.2019	2.1400e-003	71.2555			
Total	0.0491	0.3630	0.3362	1.5100e-003	0.0942	2.2100e-003	0.0965	0.0255	2.0900e-003	0.0276	157.1405	157.1405	9.0600e-003			157.3670	

3.6 Crane Use - 2020**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	0.3967	4.7176	1.8509	5.0500e-003		0.1945	0.1945		0.1789	0.1789	488.9409	488.9409	0.1581			492.8943	
Total	0.3967	4.7176	1.8509	5.0500e-003		0.1945	0.1945		0.1789	0.1789	488.9409	488.9409	0.1581			492.8943	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.6 Crane Use - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0117	0.3380	0.0956	8.0000e-004	0.0203	1.6900e-003	0.0220	5.8500e-003	1.6100e-003	7.4600e-003	85.9387	85.9387	6.9200e-003	86.1116			
Worker	0.0374	0.0250	0.2405	7.1000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201	71.2019	71.2019	2.1400e-003	71.2555			
Total	0.0491	0.3630	0.3362	1.5100e-003	0.0942	2.2100e-003	0.0965	0.0255	2.0900e-003	0.0276		157.1405	157.1405	9.0600e-003		157.3670	

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	0.0620	0.2688	2.2744	5.0500e-003		1.2400e-003	1.2400e-003	1.2400e-003	1.2400e-003	0.0000	488.9409	488.9409	0.1581			492.8943	
Total	0.0620	0.2688	2.2744	5.0500e-003		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	488.9409	488.9409	0.1581		492.8943	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.6 Crane Use - 2020**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	0.0117	0.3380	0.0956	8.0000e-004	0.0203	1.6900e-003	0.0220	5.8500e-003	1.6100e-003	7.4600e-003		85.9387	85.9387	6.9200e-003		86.1116	
Worker	0.0374	0.0250	0.2405	7.1000e-004	0.0739	5.2000e-004	0.0745	0.0196	4.8000e-004	0.0201		71.2019	71.2019	2.1400e-003		71.2555	
Total	0.0491	0.3630	0.3362	1.5100e-003	0.0942	2.2100e-003	0.0965	0.0255	2.0900e-003	0.0276		157.1405	157.1405	9.0600e-003		157.3670	

3.7 Architectural Coating - 2020**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	2.9066						0.0000	0.0000		0.0000	0.0000		0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	3.1488	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

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3.7 Architectural Coating - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	8.3100e-003	5.5500e-003	0.0535	1.6000e-004	0.0164	1.2000e-004	0.0165	4.3600e-003	1.1000e-004	4.4600e-003	15.8226	15.8226	4.8000e-004	15.8346			
Total	8.3100e-003	5.5500e-003	0.0535	1.6000e-004	0.0164	1.2000e-004	0.0165	4.3600e-003	1.1000e-004	4.4600e-003	15.8226	15.8226	4.8000e-004	15.8346			

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	2.9066						0.0000	0.0000		0.0000	0.0000		0.0000			0.0000	
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0218		281.9928	
Total	2.9363	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0218		281.9928	

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

3.7 Architectural Coating - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day											lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	8.3100e-003	5.5500e-003	0.0535	1.6000e-004	0.0164	1.2000e-004	0.0165	4.3600e-003	1.1000e-004	4.4600e-003	15.8226	15.8226	4.8000e-004			15.8346	
Total	8.3100e-003	5.5500e-003	0.0535	1.6000e-004	0.0164	1.2000e-004	0.0165	4.3600e-003	1.1000e-004	4.4600e-003	15.8226	15.8226	4.8000e-004			15.8346	

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

	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	0.4091	1.7732	4.8931	0.0163	1.4424	0.0140	1.4565	0.3855	0.0131	0.3986	1,652.739 7	1,652.739 7	0.0894		1,654.974 8		
Unmitigated	0.4091	1.7732	4.8931	0.0163	1.4424	0.0140	1.4565	0.3855	0.0131	0.3986	1,652.739 7	1,652.739 7	0.0894		1,654.974 8		

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT	Annual VMT	Annual VMT
Single Family Housing	228.48	237.84	206.88	648,471	648,471	648,471	648,471
Total	228.48	237.84	206.88	648,471	648,471	648,471	648,471

4.3 Trip Type Information

Land Use	Miles						Trip %			Trip Purpose %		
	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	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	42.00	18.00	40.00	86	11	3	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

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	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115	180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892		
NaturalGas Unmitigated	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115	180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892		

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Land Use	kBTU/yr	lb/day											lb/day					
Single Family Housing	1537.77	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115	180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892		
Total		0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115	180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892		

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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					
Single Family Housing	1.53777	0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115	180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892	
Total		0.0166	0.1417	0.0603	9.0000e-004		0.0115	0.0115		0.0115	0.0115		180.9141	180.9141	3.4700e-003	3.3200e-003	181.9892

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	37.8622	0.7402	47.3229	0.0823		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030
Unmitigated	37.8622	0.7402	47.3229	0.0823		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030

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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	0.1481					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9245					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	36.7295	0.7173	45.3386	0.0821		6.3569	6.3569		6.3569	6.3569	666.5215	279.5294	946.0510	0.6151	0.0524	977.0514
Landscaping	0.0601	0.0229	1.9843	1.0000e-004		0.0109	0.0109		0.0109	0.0109		3.5653	3.5653	3.4500e-003		3.6516
Total	37.8622	0.7402	47.3229	0.0822		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1481					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9245					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	36.7295	0.7173	45.3386	0.0821		6.3569	6.3569		6.3569	6.3569	666.5215	279.5294	946.0510	0.6151	0.0524	977.0514
Landscaping	0.0601	0.0229	1.9843	1.0000e-004		0.0109	0.0109		0.0109	0.0109		3.5653	3.5653	3.4500e-003		3.6516
Total	37.8622	0.7402	47.3229	0.0822		6.3678	6.3678		6.3678	6.3678	666.5215	283.0947	949.6162	0.6185	0.0524	980.7030

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
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10.0 Stationary Equipment

Lisbon Heights - 24-Unit Single Family - San Diego County, Winter

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Lisbon Heights - 24-Unit Single Family - San Diego County, Annual

Lisbon Heights - 24-Unit Single Family
San Diego County, Annual**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	24.00	Dwelling Unit	3.70	43,200.00	69

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - 3.7 acre site

Construction Phase - PE

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - pe

Trips and VMT -

Grading - site is 3.7 acres

Architectural Coating - Rule 67 Paint

Vehicle Trips - 100% correction in trip percentage

Woodstoves -

Area Coating - Rule 67 Paint

Water And Wastewater -

Construction Off-road Equipment Mitigation - Tier IV is standard equipment now

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	8.00	15.00
tblConstructionPhase	NumDays	18.00	10.00
tblConstructionPhase	NumDays	230.00	22.00
tblConstructionPhase	NumDays	18.00	186.00
tblGrading	AcresOfGrading	7.50	3.70
tblLandUse	LotAcreage	7.79	3.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblSolidWaste	SolidWasteGenerationRate	28.29	25.83
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HS_TTP	18.80	18.00
tblVehicleTrips	HW_TTP	41.60	42.00

2.0 Emissions Summary

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2.1 Overall Construction**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	tons/yr												MT/yr			
2020	0.4827	1.7551	1.7131	2.7900e-003	0.0633	0.1037	0.1670	0.0291	0.0989	0.1279	0.0000	240.3527	240.3527	0.0451	0.0000	241.4798
Maximum	0.4827	1.7551	1.7131	2.7900e-003	0.0633	0.1037	0.1670	0.0291	0.0989	0.1279	0.0000	240.3527	240.3527	0.0451	0.0000	241.4798

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	tons/yr												MT/yr			
2020	0.3077	0.2732	1.7462	2.7900e-003	0.0633	8.6000e-004	0.0642	0.0291	8.4000e-004	0.0299	0.0000	240.3524	240.3524	0.0451	0.0000	241.4795
Maximum	0.3077	0.2732	1.7462	2.7900e-003	0.0633	8.6000e-004	0.0642	0.0291	8.4000e-004	0.0299	0.0000	240.3524	240.3524	0.0451	0.0000	241.4795

	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
Percent Reduction	36.24	84.43	-1.94	0.00	0.00	99.17	61.58	0.00	99.15	76.61	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	12-1-2019	2-29-2020	0.3002	0.0299
5	3-1-2020	5-31-2020	0.5737	0.1382
6	6-1-2020	8-31-2020	0.5906	0.1786
7	9-1-2020	9-30-2020	0.1926	0.0582
		Highest	0.5906	0.1786

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	tons/yr											MT/yr					
Area	1.7071	0.0315	2.0375	3.3800e-003		0.2616	0.2616		0.2616	0.2616	24.7910	10.6881	35.4791	0.0232	1.9500e-003	36.6392	
Energy	3.0300e-003	0.0259	0.0110	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	93.4517	93.4517	3.1300e-003	1.0800e-003	93.8511	
Mobile	0.0693	0.3085	0.8400	2.8500e-003	0.2444	2.4200e-003	0.2468	0.0655	2.2700e-003	0.0677	0.0000	262.5548	262.5548	0.0139	0.0000	262.9030	
Waste						0.0000	0.0000		0.0000	0.0000	5.2433	0.0000	5.2433	0.3099	0.0000	12.9900	
Water						0.0000	0.0000		0.0000	0.0000	0.4961	10.2334	10.7295	0.0514	1.2900e-003	12.3976	
Total	1.7794	0.3659	2.8885	6.4000e-003	0.2444	0.2661	0.5105	0.0655	0.2660	0.3314	30.5303	376.9280	407.4583	0.4015	4.3200e-003	418.7808	

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2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr											MT/yr					
Area	1.7071	0.0315	2.0375	3.3800e-003		0.2616	0.2616		0.2616	0.2616	24.7910	10.6881	35.4791	0.0232	1.9500e-003	36.6392	
Energy	3.0300e-003	0.0259	0.0110	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	93.4517	93.4517	3.1300e-003	1.0800e-003	93.8511	
Mobile	0.0693	0.3085	0.8400	2.8500e-003	0.2444	2.4200e-003	0.2468	0.0655	2.2700e-003	0.0677	0.0000	262.5548	262.5548	0.0139	0.0000	262.9030	
Waste						0.0000	0.0000		0.0000	0.0000	5.2433	0.0000	5.2433	0.3099	0.0000	12.9900	
Water						0.0000	0.0000		0.0000	0.0000	0.4961	10.2334	10.7295	0.0514	1.2900e-003	12.3976	
Total	1.7794	0.3659	2.8885	6.4000e-003	0.2444	0.2661	0.5105	0.0655	0.2660	0.3314	30.5303	376.9280	407.4583	0.4015	4.3200e-003	418.7808	

	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
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**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	1/7/2020	5	5	
2	Grading	Grading	1/8/2020	1/28/2020	5	15	
3	Paving	Paving	1/29/2020	2/11/2020	5	10	
4	Building Construction without cranes	Building Construction	2/12/2020	12/29/2020	5	230	
5	Crane Use	Building Construction	4/1/2020	4/30/2020	5	22	
6	Architectural Coating	Architectural Coating	4/14/2020	12/29/2020	5	186	

Acres of Grading (Site Preparation Phase): 3.7

Acres of Grading (Grading Phase): 3.7

Acres of Paving: 0

Residential Indoor: 87,480; Residential Outdoor: 29,160; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction without cranes	Forklifts	2	8.00	89	0.20
Building Construction without cranes	Generator Sets	1	8.00	84	0.74
Building Construction without cranes	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction without cranes	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	6.00	132	0.36
Paving	Rollers	1	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Crane Use	Cranes	1	7.00	231	0.29
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	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction without cranes	6	9.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Crane Use	1	9.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2020**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	tons/yr											MT/yr					
Fugitive Dust					1.9600e-003	0.0000	1.9600e-003	2.1000e-004	0.0000	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Off-Road	5.2000e-004	5.2600e-003	5.7000e-003	1.0000e-005		3.3000e-004	3.3000e-004		3.1000e-004	3.1000e-004	0.0000	0.6821	0.6821	2.2000e-004	0.0000	0.6877	
Total	5.2000e-004	5.2600e-003	5.7000e-003	1.0000e-005	1.9600e-003	3.3000e-004	2.2900e-003	2.1000e-004	3.1000e-004	5.2000e-004	0.0000	0.6821	0.6821	2.2000e-004	0.0000	0.6877	

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3.2 Site Preparation - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	3.0000e-005	2.0000e-005	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0544	0.0544	0.0000	0.0000	0.0000	0.0544	
Total	3.0000e-005	2.0000e-005	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0544	0.0544	0.0000	0.0000	0.0000	0.0544	

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	tons/yr											MT/yr					
Fugitive Dust					1.9600e-003	0.0000	1.9600e-003	2.1000e-004	0.0000	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Off-Road	9.0000e-005	4.1000e-004	5.8600e-003	1.0000e-005	1.9600e-003	0.0000	0.0000		0.0000	0.0000	0.6821	0.6821	2.2000e-004	0.0000	0.6877		
Total	9.0000e-005	4.1000e-004	5.8600e-003	1.0000e-005	1.9600e-003	0.0000	1.9600e-003	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6821	0.6821	2.2000e-004	0.0000	0.6877	

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3.2 Site Preparation - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	3.0000e-005	2.0000e-005	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0544	0.0544	0.0000	0.0000	0.0000	0.0544	
Total	3.0000e-005	2.0000e-005	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0544	0.0544	0.0000	0.0000	0.0000	0.0544	

3.3 Grading - 2020**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	tons/yr										MT/yr					
Fugitive Dust					0.0471	0.0000	0.0471	0.0250	0.0000	0.0250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1482	0.0617	1.4000e-004	0.0471	6.6800e-003	6.6800e-003	0.0250	6.1400e-003	6.1400e-003	0.0000	12.0485	12.0485	3.9000e-003	0.0000	12.1459
Total	0.0132	0.1482	0.0617	1.4000e-004	0.0471	6.6800e-003	0.0538	0.0250	6.1400e-003	0.0312	0.0000	12.0485	12.0485	3.9000e-003	0.0000	12.1459

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3.3 Grading - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	2.2000e-004	1.6000e-004	1.6100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4349	0.4349	1.0000e-005	0.0000	0.4353	
Total	2.2000e-004	1.6000e-004	1.6100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4349	0.4349	1.0000e-005	0.0000	0.4353	

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	tons/yr											MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0471	0.0000	0.0471	0.0250	0.0000	0.0250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Off-Road	1.6800e-003	7.2700e-003	0.0686	1.4000e-004	0.0471	3.0000e-005	3.0000e-005	0.0250	3.0000e-005	0.0251	0.0000	12.0485	12.0485	3.9000e-003	0.0000	12.1459	
Total	1.6800e-003	7.2700e-003	0.0686	1.4000e-004	0.0471	3.0000e-005	0.0472	0.0250	3.0000e-005	0.0251	0.0000	12.0485	12.0485	3.9000e-003	0.0000	12.1459	

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3.3 Grading - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	2.2000e-004	1.6000e-004	1.6100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4349	0.4349	1.0000e-005	0.0000	0.4353	
Total	2.2000e-004	1.6000e-004	1.6100e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4349	0.4349	1.0000e-005	0.0000	0.4353	

3.4 Paving - 2020**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	tons/yr										MT/yr					
Off-Road	4.3600e-003	0.0432	0.0448	7.0000e-005		2.3600e-003	2.3600e-003		2.1800e-003	2.1800e-003	0.0000	5.9795	5.9795	1.8600e-003	0.0000	6.0260
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.3600e-003	0.0432	0.0448	7.0000e-005		2.3600e-003	2.3600e-003		2.1800e-003	2.1800e-003	0.0000	5.9795	5.9795	1.8600e-003	0.0000	6.0260

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3.4 Paving - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	2.8000e-004	2.0000e-004	2.0100e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5437	0.5437	2.0000e-005	0.0000	0.5441	
Total	2.8000e-004	2.0000e-004	2.0100e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5437	0.5437	2.0000e-005	0.0000	0.5441	

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	tons/yr											MT/yr					
Off-Road	7.9000e-004	3.4100e-003	0.0486	7.0000e-005		2.0000e-005	2.0000e-005	2.0000e-005	2.0000e-005	0.0000	5.9795	5.9795	1.8600e-003	0.0000	6.0260		
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total	7.9000e-004	3.4100e-003	0.0486	7.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	5.9795	5.9795	1.8600e-003	0.0000	6.0260	

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3.4 Paving - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	2.8000e-004	2.0000e-004	2.0100e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5437	0.5437	2.0000e-005	0.0000	0.5441	
Total	2.8000e-004	2.0000e-004	2.0100e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5437	0.5437	2.0000e-005	0.0000	0.5441	

3.5 Building Construction without cranes - 2020**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	tons/yr											MT/yr					
Off-Road	0.1605	1.3028	1.3596	2.0300e-003		0.0816	0.0816		0.0777	0.0777	0.0000	172.4428	172.4428	0.0346	0.0000	173.3080	
Total	0.1605	1.3028	1.3596	2.0300e-003		0.0816	0.0816		0.0777	0.0777	0.0000	172.4428	172.4428	0.0346	0.0000	173.3080	

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3.5 Building Construction without cranes - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	1.3100e-003	0.0393	0.0105	9.0000e-005	2.2900e-003	1.9000e-004	2.4800e-003	6.6000e-004	1.8000e-004	8.4000e-004	0.0000	9.1032	9.1032	7.0000e-004	0.0000	9.1207	
Worker	3.8100e-003	2.8200e-003	0.0277	8.0000e-005	8.3000e-003	6.0000e-005	8.3600e-003	2.2100e-003	5.0000e-005	2.2600e-003	0.0000	7.5025	7.5025	2.3000e-004	0.0000	7.5081	
Total	5.1200e-003	0.0421	0.0382	1.7000e-004	0.0106	2.5000e-004	0.0108	2.8700e-003	2.3000e-004	3.1000e-003	0.0000	16.6057	16.6057	9.3000e-004	0.0000	16.6288	

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	tons/yr											MT/yr					
Off-Road	0.0246	0.2001	1.3771	2.0300e-003		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	172.4426	172.4426	0.0346	0.0000	173.3078	
Total	0.0246	0.2001	1.3771	2.0300e-003		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	172.4426	172.4426	0.0346	0.0000	173.3078	

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3.5 Building Construction without cranes - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	1.3100e-003	0.0393	0.0105	9.0000e-005	2.2900e-003	1.9000e-004	2.4800e-003	6.6000e-004	1.8000e-004	8.4000e-004	0.0000	9.1032	9.1032	7.0000e-004	0.0000	9.1207	
Worker	3.8100e-003	2.8200e-003	0.0277	8.0000e-005	8.3000e-003	6.0000e-005	8.3600e-003	2.2100e-003	5.0000e-005	2.2600e-003	0.0000	7.5025	7.5025	2.3000e-004	0.0000	7.5081	
Total	5.1200e-003	0.0421	0.0382	1.7000e-004	0.0106	2.5000e-004	0.0108	2.8700e-003	2.3000e-004	3.1000e-003	0.0000	16.6057	16.6057	9.3000e-004	0.0000	16.6288	

3.6 Crane Use - 2020**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	tons/yr											MT/yr					
Off-Road	4.3600e-003	0.0519	0.0204	6.0000e-005	2.1400e-003	2.1400e-003	2.1400e-003	1.9700e-003	1.9700e-003	0.0000	4.8792	4.8792	1.5800e-003	0.0000	4.9186		
Total	4.3600e-003	0.0519	0.0204	6.0000e-005	2.1400e-003	2.1400e-003	2.1400e-003	1.9700e-003	1.9700e-003	0.0000	4.8792	4.8792	1.5800e-003	0.0000	4.9186		

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3.6 Crane Use - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	1.3000e-004	3.7600e-003	1.0000e-003	1.0000e-005	2.2000e-004	2.0000e-005	2.4000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.8707	0.8707	7.0000e-005	0.0000	0.8724	
Worker	3.6000e-004	2.7000e-004	2.6500e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7176	0.7176	2.0000e-005	0.0000	0.7182	
Total	4.9000e-004	4.0300e-003	3.6500e-003	2.0000e-005	1.0100e-003	3.0000e-005	1.0400e-003	2.7000e-004	3.0000e-005	3.0000e-004	0.0000	1.5884	1.5884	9.0000e-005	0.0000	1.5906	

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	tons/yr											MT/yr					
Off-Road	6.8000e-004	2.9600e-003	0.0250	6.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8792	4.8792	1.5800e-003	0.0000	4.9186	
Total	6.8000e-004	2.9600e-003	0.0250	6.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.8792	4.8792	1.5800e-003	0.0000	4.9186	

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3.6 Crane Use - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	1.3000e-004	3.7600e-003	1.0000e-003	1.0000e-005	2.2000e-004	2.0000e-005	2.4000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	0.8707	0.8707	7.0000e-005	0.0000	0.8724	
Worker	3.6000e-004	2.7000e-004	2.6500e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7176	0.7176	2.0000e-005	0.0000	0.7182	
Total	4.9000e-004	4.0300e-003	3.6500e-003	2.0000e-005	1.0100e-003	3.0000e-005	1.0400e-003	2.7000e-004	3.0000e-005	3.0000e-004	0.0000	1.5884	1.5884	9.0000e-005	0.0000	1.5906	

3.7 Architectural Coating - 2020**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	tons/yr											MT/yr					
Archit. Coating	0.2703						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Off-Road	0.0225	0.1566	0.1703	2.8000e-004		0.0103	0.0103		0.0103	0.0103	0.0000	23.7453	23.7453	1.8400e-003	0.0000	23.7912	
Total	0.2928	0.1566	0.1703	2.8000e-004		0.0103	0.0103		0.0103	0.0103	0.0000	23.7453	23.7453	1.8400e-003	0.0000	23.7912	

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3.7 Architectural Coating - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	6.9000e-004	5.1000e-004	4.9800e-003	1.0000e-005	1.4900e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3483	1.3483	4.0000e-005	0.0000	1.3493	
Total	6.9000e-004	5.1000e-004	4.9800e-003	1.0000e-005	1.4900e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3483	1.3483	4.0000e-005	0.0000	1.3493	

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	tons/yr											MT/yr					
Archit. Coating	0.2703						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Off-Road	2.7600e-003	0.0120	0.1704	2.8000e-004		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	23.7452	23.7452	1.8400e-003	0.0000	23.7912	
Total	0.2731	0.0120	0.1704	2.8000e-004		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	23.7452	23.7452	1.8400e-003	0.0000	23.7912	

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3.7 Architectural Coating - 2020**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	tons/yr											MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Worker	6.9000e-004	5.1000e-004	4.9800e-003	1.0000e-005	1.4900e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3483	1.3483	4.0000e-005	0.0000	1.3493	
Total	6.9000e-004	5.1000e-004	4.9800e-003	1.0000e-005	1.4900e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3483	1.3483	4.0000e-005	0.0000	1.3493	

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	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	tons/yr											MT/yr					
Mitigated	0.0693	0.3085	0.8400	2.8500e-003	0.2444	2.4200e-003	0.2468	0.0655	2.2700e-003	0.0677	0.0000	262.5548	262.5548	0.0139	0.0000	262.9030	
Unmitigated	0.0693	0.3085	0.8400	2.8500e-003	0.2444	2.4200e-003	0.2468	0.0655	2.2700e-003	0.0677	0.0000	262.5548	262.5548	0.0139	0.0000	262.9030	

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT	Annual VMT	Annual VMT
Single Family Housing	228.48	237.84	206.88	648,471	648,471	648,471	648,471
Total	228.48	237.84	206.88	648,471	648,471	648,471	648,471

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Single Family Housing	10.80	7.30	7.50	42.00	18.00	40.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

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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	tons/yr										MT/yr					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	63.4993	63.4993	2.5600e-003	5.3000e-004	63.7208
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	63.4993	63.4993	2.5600e-003	5.3000e-004	63.7208
NaturalGas Mitigated	3.0300e-003	0.0259	0.0110	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9524	29.9524	5.7000e-004	5.5000e-004	30.1304
NaturalGas Unmitigated	3.0300e-003	0.0259	0.0110	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9524	29.9524	5.7000e-004	5.5000e-004	30.1304

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	561286	3.0300e-003	0.0259	0.0110	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9524	29.9524	5.7000e-004	5.5000e-004	30.1304
Total		3.0300e-003	0.0259	0.0110	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9524	29.9524	5.7000e-004	5.5000e-004	30.1304

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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	tons/yr										MT/yr					
Single Family Housing	561286	3.0300e-003	0.0259	0.0110	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9524	29.9524	5.7000e-004	5.5000e-004	30.1304
Total		3.0300e-003	0.0259	0.0110	1.7000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9524	29.9524	5.7000e-004	5.5000e-004	30.1304

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	194301	63.4993	2.5600e-003	5.3000e-004	63.7208
Total		63.4993	2.5600e-003	5.3000e-004	63.7208

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	194301	63.4993	2.5600e-003	5.3000e-004	63.7208
Total		63.4993	2.5600e-003	5.3000e-004	63.7208

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	tons/yr										MT/yr					
Mitigated	1.7071	0.0315	2.0375	3.3800e-003		0.2616	0.2616		0.2616	0.2616	24.7910	10.6881	35.4791	0.0232	1.9500e-003	36.6392
Unmitigated	1.7071	0.0315	2.0375	3.3800e-003		0.2616	0.2616		0.2616	0.2616	24.7910	10.6881	35.4791	0.0232	1.9500e-003	36.6392

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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	tons/yr										MT/yr					
Architectural Coating	0.0270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.5059	0.0294	1.8589	3.3700e-003		0.2606	0.2606		0.2606	0.2606	24.7910	10.3970	35.1880	0.0229	1.9500e-003	36.3410
Landscaping	5.4100e-003	2.0600e-003	0.1786	1.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	0.2911	0.2911	2.8000e-004	0.0000	0.2981
Total	1.7071	0.0315	2.0375	3.3800e-003		0.2616	0.2616		0.2616	0.2616	24.7910	10.6881	35.4791	0.0232	1.9500e-003	36.6392

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6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.5059	0.0294	1.8589	3.3700e-003		0.2606	0.2606		0.2606	0.2606	24.7910	10.3970	35.1880	0.0229	1.9500e-003	36.3410
Landscaping	5.4100e-003	2.0600e-003	0.1786	1.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	0.2911	0.2911	2.8000e-004	0.0000	0.2981
Total	1.7071	0.0315	2.0375	3.3800e-003		0.2616	0.2616		0.2616	0.2616	24.7910	10.6881	35.4791	0.0232	1.9500e-003	36.6392

7.0 Water Detail**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	10.7295	0.0514	1.2900e-003	12.3976
Unmitigated	10.7295	0.0514	1.2900e-003	12.3976

7.2 Water by Land Use**Unmitigated**

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.5637 / 0.985809	10.7295	0.0514	1.2900e-003	12.3976
Total		10.7295	0.0514	1.2900e-003	12.3976

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7.2 Water by Land Use**Mitigated**

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.5637 / 0.985809	10.7295	0.0514	1.2900e- 003	12.3976
Total		10.7295	0.0514	1.2900e- 003	12.3976

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.2433	0.3099	0.0000	12.9900
Unmitigated	5.2433	0.3099	0.0000	12.9900

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8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	25.83	5.2433	0.3099	0.0000	12.9900
Total		5.2433	0.3099	0.0000	12.9900

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	25.83	5.2433	0.3099	0.0000	12.9900
Total		5.2433	0.3099	0.0000	12.9900

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

ATTACHMENT B

AERMOD input/output

1

AERMOD PRIME - (DATED 15181)

AERMODPrMSPx VERSION
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Run Began on 10/10/2018 at 9:20:23

** BREEZE AERMOD
** Trinity Consultants
** VERSION 8.1

CO STARTING
CO TITLEONE PM10 Construction
CO MODELOPT DFAULT CONC
CO RUNORNOT RUN
CO AVERTIME ANNUAL
CO POLLUTID PM10
CO FINISHED

SO STARTING
SO ELEVUNIT METERS
SO LOCATION 695KM001 AREAPOLY 495750.8 3619374.8 93.99
** SRCDESCR Area Source Construction
SO SRCPARAM 695KM001 4.71E-09 3 8 5
SO AREAVERT 695KM001 495750.8 3619374.8 495783.1 3619375.4 495781.1 3619416.7 495862.4
3619417.4
SO AREAVERT 695KM001 495861 3619533.9 495750.8 3619533.9 495750.5 3619533.3 495750.8
3619374.8
SO SRCGROUP ALL
SO FINISHED

RE STARTING
RE ELEVUNIT METERS
RE GRIDCART 695KM002 STA
RE GRIDCART 695KM002 XYINC 495060.6 12 140 3620075.7 12 -130
RE GRIDCART 695KM002 ELEV 1 94.1 91.0 102.3 121.0 105.9 97.0 92.5 113.2 125.0
114.1 113.9
RE GRIDCART 695KM002 ELEV 1 126.4
RE GRIDCART 695KM002 ELEV 2 94.5 95.3 119.8 101.5 98.0 92.3 105.7 121.1 117.8
105.2 118.3
RE GRIDCART 695KM002 ELEV 2 131.4
RE GRIDCART 695KM002 ELEV 3 85.8 96.5 116.9 95.4 89.8 90.9 101.4 119.4 106.7
108.8 131.8 129.3
RE GRIDCART 695KM002 ELEV 4 103.5 109.5 97.6 88.7 84.1 106.3 121.3 108.9 101.9
112.1 127.0
RE GRIDCART 695KM002 ELEV 4 117.3
RE GRIDCART 695KM002 ELEV 5 98.2 92.0 87.9 81.8 95.1 117.2 114.2 97.0 103.2 114.9
111.3 101.0
RE GRIDCART 695KM002 ELEV 6 86.6 85.4 80.6 83.8 95.9 99.6 96.7 93.6 101.9 108.6
100.7 97.4
RE GRIDCART 695KM002 ELEV 7 75.4 77.3 78.9 83.4 89.2 88.6 88.5 90.9 94.6 94.6
93.9 102.9
RE GRIDCART 695KM002 ELEV 8 75.9 74.2 76.6 78.8 81.4 81.9 83.1 85.3 87.5 93.5
99.1 108.1
RE GRIDCART 695KM002 ELEV 9 99.0 93.2 86.5 103.4 102.9 104.4 96.6 95.5 100.2 91.4

99.3 105.7
 RE GRIDCART 695KM002 ELEV 10 111.0 99.4 90.2 102.0 114.1 108.5 109.5 104.2 104.9
 116.7 97.7
 RE GRIDCART 695KM002 ELEV 10 100.0
 RE GRIDCART 695KM002 ELEV 11 121.1 105.9 96.2 100.2 115.7 119.0 120.4 113.6 126.1
 122.7 103.5
 RE GRIDCART 695KM002 ELEV 11 109.8
 RE GRIDCART 695KM002 ELEV 12 135.4 112.8 110.6 103.2 116.3 129.0 131.4 120.5 138.5
 113.2 109.0
 RE GRIDCART 695KM002 ELEV 12 130.3
 RE GRIDCART 695KM002 HILL 1 143.3 142.2 124.9 121.0 129.2 129.2 131.1 126.1 125.0
 131.2 136.1
 RE GRIDCART 695KM002 HILL 1 136.1
 RE GRIDCART 695KM002 HILL 2 124.0 120.6 120.6 124.4 128.7 129.2 125.9 121.1 123.6
 132.3 132.1
 RE GRIDCART 695KM002 HILL 2 131.4
 RE GRIDCART 695KM002 HILL 3 124.0 120.6 119.6 122.0 129.2 129.2 129.2 119.4 125.3
 132.3 131.8
 RE GRIDCART 695KM002 HILL 3 129.3
 RE GRIDCART 695KM002 HILL 4 108.6 113.2 120.5 129.2 129.2 129.2 129.2 129.2 131.9
 131.9 128.5
 RE GRIDCART 695KM002 HILL 4 132.3
 RE GRIDCART 695KM002 HILL 5 108.3 115.5 120.5 129.2 129.2 128.5 129.2 129.2 117.0
 116.6 128.9
 RE GRIDCART 695KM002 HILL 5 132.3
 RE GRIDCART 695KM002 HILL 6 108.3 85.4 115.5 129.2 129.2 129.2 129.2 129.2 114.2
 108.6 128.9
 RE GRIDCART 695KM002 HILL 6 133.5
 RE GRIDCART 695KM002 HILL 7 149.0 77.3 78.9 83.4 128.1 129.2 129.2 123.9 110.2
 110.4 130.5
 RE GRIDCART 695KM002 HILL 7 131.5
 RE GRIDCART 695KM002 HILL 8 149.4 149.4 149.4 118.0 122.2 124.6 140.5 140.5 140.5
 93.5 130.5
 RE GRIDCART 695KM002 HILL 8 130.5
 RE GRIDCART 695KM002 HILL 9 149.2 149.4 149.4 103.5 113.7 104.4 140.5 140.5 140.5
 141.2 121.6
 RE GRIDCART 695KM002 HILL 9 130.5
 RE GRIDCART 695KM002 HILL 10 149.4 149.4 149.4 115.1 114.1 122.5 124.6 141.3 143.7
 116.7 142.7
 RE GRIDCART 695KM002 HILL 10 132.4
 RE GRIDCART 695KM002 HILL 11 149.4 149.4 149.4 149.4 122.2 131.2 132.9 144.2 140.5
 122.7 144.2
 RE GRIDCART 695KM002 HILL 11 136.9
 RE GRIDCART 695KM002 HILL 12 149.4 149.4 149.4 149.4 122.8 129.0 131.4 144.2 138.5
 144.2 144.2
 RE GRIDCART 695KM002 HILL 12 130.3
 RE GRIDCART 695KM002 END
 RE DISCCART 495731.5 3619533.6 109.54 129.23
 ** RCPDESCR 1
 RE DISCCART 495730.6 3619456.4 100.41 129.23
 ** RCPDESCR 2
 RE DISCCART 495732.5 3619393.7 94.76 129.23
 ** RCPDESCR 3
 RE DISCCART 495794.3 3619399.5 99.24 129.23
 ** RCPDESCR 4

```
RE DISCCART 495856 3619403.4 97.58 129.23
** RCPDESCR 5
RE DISCCART 495882.1 3619438.1 98.56 129.23
** RCPDESCR 6
RE DISCCART 495812.6 3619548.1 119.01 128.15
** RCPDESCR 7
RE FINISHED
```

```
ME STARTING
ME SURFFILE "C:\Users\XeonRT\AMAZON~1\LDN\17-903~1\AERMOD\KMA2012V15181.SFC"
** SURFFILE "C:\Users\XeonRT\AMAZON~1\LDN\17-903~1\AERMOD\KMA2012V15181.SFC"
ME PROFILE "C:\Users\XeonRT\AMAZON~1\LDN\17-903~1\AERMOD\KMA2012V15181.PFL"
** PROFILE "C:\Users\XeonRT\AMAZON~1\LDN\17-903~1\AERMOD\KMA2012V15181.PFL"
ME SURFDATA 93107 2012 OVERLANDSURFACESTATION
ME UAIRDATA 3190 2012 OVERLANDUPPERSTATION
ME SITEDATA 00001016 2012
ME PROFBASE 116 METERS
ME STARTEND 2012 1 1 1 2012 12 31 24
ME FINISHED
```

```
OU STARTING
OU FILEFORM FIX
OU PLOTFILE ANNUAL ALL ALL`ANNUAL.plt 10000
OU FINISHED
```

```
** ****
** It is recommended that the user not edit any data below this line
** ****
```

```
** TAG NAM C7IEK2SH
** TAG PRM 0 2 F F 1 255,0,0,0
** TAG CRD
488896.6,3619427.9,0,488848.8,3619301.1,0,488820.3,3619211.0,0,488778.0,3619064.9,0,488736.6
,3618882.0,0,488720.1,3618788.2,0,488715.5,3618762.5,0,488716.4,3618762.5,0

** TERRFILE C:\USERS\XeonRT\AMAZON~1\LDN\18-108~1\AERMOD\NEDU85~1\NEDU85802387.TIF 2 0
WGS84 11 0 494195.4 3616807.0 494198.3 3621778.7 499112.4 3621777.1 499112.0
3616805.3
** AMPTYPE NED
** AMPDATUM 3
** AMPZONE 11
** AMPHEMISPHERE N

** PROJECTIONWKT
PROJCS["UTM_4326_Zone11",GEOGCS["WGS_84",DATUM["World_Geodetic_System_1984",SPHEROID["WGS_19
84",6378137,298.257223563],TOWGS84[0,0,0,0,0,0]],PRIMEM["Greenwich",0],UNIT["Degree",0.017
4532925199433]],PROJECTION["Universal_Transverse_Mercator"],PARAMETER["Zone",11],UNIT["Meter
",1,AUTHORITY["EPSG","9001"]]]
** PROJECTION UTM
** DATUM WGE
** UNITS METER
** ZONE 11
** HEMISPHERE N
** ORIGINLON 0
```

```
** ORIGINLAT  0
** PARALLEL1  0
** PARALLEL2  0
** AZIMUTH   0
** SCALEFACT  0
** FALSEEAST  0
** FALSENORTH 0

** POSTFMT  UNFORM
** TEMPLATE USERDEFINED
** AERMODEXE AERMOD_BREEZE_15181.EXE
** AERMAPEXE AERMAP_EPA_11103.EXE
```

```
*****
*** SETUP Finishes Successfully ***
*****
```

```
▲ *** AERMOD - VERSION 15181 ***   *** PM10 Construction
      ***          10/10/18
*** AERMET - VERSION 15181 ***   ***
      ***          09:20:23
```

```
PAGE    1
**MODELOPTs: RegDEFAULT CONC      ELEV      RURAL
```

```
***      MODEL SETUP OPTIONS SUMMARY      ***
-----
```

```
**Model Is Setup For Calculation of Average CONCntration Values.
```

```
-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F
```

```
**Model Uses RURAL Dispersion Only.
```

```
**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.

**Other Options Specified:
TEMP_Sub - Meteorological data includes TEMP substitutions
```

```
**Model Assumes No FLAGPOLE Receptor Heights.
```

```
**The User Specified a Pollutant Type of: PM10
```

```
**Model Calculates ANNUAL Averages Only
```

**This Run Includes: 1 Source(s); 1 Source Group(s); and 151 Receptor(s)

with: 0 POINT(s), including
 0 POINTCAP(s) and 0 POINTHOR(s)

and: 0 VOLUME source(s)

and: 1 AREA type source(s)

and: 0 LINE source(s)

and: 0 OPENPIT source(s)

****Model Set To Continue RUNning After the Setup Testing.**

**The AERMET Input Meteorological Data Version Date: 15181

****Output Options Selected:**

Model Outputs Tables of ANNUAL Averages by Receptor

Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 116.00 ; Decay Coef. =
 0.000 ; Rot. Angle = 0.0
 Emission Units = GRAMS/SEC ; Emission Rate
 Unit Factor = 0.10000E+07
 Output Units = MICROGRAMS/M**3

****Approximate Storage Requirements of Model = 3.5 MB of RAM.**

**Input Runstream File: AERMOD.INP

**Output Print File: AERMOD.OUT

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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** AREA POLY SOURCE DATA ***

NUMBER	EMISSION RATE	LOCATION OF AREA	BASE	RELEASE NUMBER	INIT.	
URBAN EMISSION RATE						
SOURCE	PART. (GRAMS/SEC	X	Y	ELEV.	HEIGHT OF VERTS.	SZ
SOURCE	SCALAR VARY					
ID	CATS. /METER**2)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)
BY						

695KM001 0 0.47100E-08 495750.8 3619374.8 94.0 3.00 8 5.00
NO

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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	695KM001 ,

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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: 695KM002 ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

495060.6, 495200.6, 495340.6, 495480.6, 495620.6, 495760.6, 495900.6,
496040.6, 496180.6, 496320.6,
496460.6, 496600.6,

*** Y-COORDINATES OF GRID ***
(METERS)

3620075.7, 3619945.7, 3619815.7, 3619685.7, 3619555.7, 3619425.7, 3619295.7,
3619165.7, 3619035.7, 3618905.7,
3618775.7, 3618645.7,

▲ *** AERMOD - VERSION 15181 *** *** PM10 Construction
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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** NETWORK ID: 695KM002 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)					X-COORD (METERS)	
495760.60	495060.60	495200.60	495340.60	495480.60	495620.60	
495900.60	496040.60	496180.60				
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
3618645.70	135.40	112.80	110.60	103.20	116.30	
129.00	131.40	120.50	138.50			
3618775.70	121.10	105.90	96.20	100.20	115.70	
119.00	120.40	113.60	126.10			
3618905.70	111.00	99.40	90.20	102.00	114.10	
108.50	109.50	104.20	104.90			
3619035.70	99.00	93.20	86.50	103.40	102.90	
104.40	96.60	95.50	100.20			
3619165.70	75.90	74.20	76.60	78.80	81.40	
81.90	83.10	85.30	87.50			
3619295.70	75.40	77.30	78.90	83.40	89.20	
88.60	88.50	90.90	94.60			
3619425.70	86.60	85.40	80.60	83.80	95.90	
99.60	96.70	93.60	101.90			
3619555.70	98.20	92.00	87.90	81.80	95.10	
117.20	114.20	97.00	103.20			
3619685.70	103.50	109.50	97.60	88.70	84.10	
106.30	121.30	108.90	101.90			
3619815.70	85.80	96.50	116.90	95.40	89.80	
90.90	101.40	119.40	106.70			
3619945.70	94.50	95.30	119.80	101.50	98.00	
92.30	105.70	121.10	117.80			
3620075.70	94.10	91.00	102.30	121.00	105.90	
97.00	92.50	113.20	125.00			
▲ *** AERMOD - VERSION	15181 ***	*** PM10 Construction				
	***	10/10/18				
*** AERMET - VERSION	15181 ***	***				
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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** NETWORK ID: 695KM002 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)				X-COORD (METERS)	
496320.60	496460.60	496600.60			
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
3618645.70	113.20	109.00	130.30		
3618775.70	122.70	103.50	109.80		
3618905.70	116.70	97.70	100.00		
3619035.70	91.40	99.30	105.70		
3619165.70	93.50	99.10	108.10		
3619295.70	94.60	93.90	102.90		

3619425.70		108.60	100.70	97.40
3619555.70		114.90	111.30	101.00
3619685.70		112.10	127.00	117.30
3619815.70		108.80	131.80	129.30
3619945.70		105.20	118.30	131.40
3620075.70		114.10	113.90	126.40

▲ *** AERMOD - VERSION 15181 *** *** PM10 Construction
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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** NETWORK ID: 695KM002 ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)		X-COORD (METERS)				
		495060.60	495200.60	495340.60	495480.60	495620.60
495760.60		495900.60	496040.60	496180.60		

3618645.70		149.40	149.40	149.40	149.40	122.80
129.00	131.40	144.20	138.50			
3618775.70		149.40	149.40	149.40	149.40	122.20
131.20	132.90	144.20	140.50			
3618905.70		149.40	149.40	149.40	115.10	114.10
122.50	124.60	141.30	143.70			
3619035.70		149.20	149.40	149.40	103.50	113.70
104.40	140.50	140.50	140.50			
3619165.70		149.40	149.40	149.40	118.00	122.20
124.60	140.50	140.50	140.50			
3619295.70		149.00	77.30	78.90	83.40	128.10
129.20	129.20	123.90	110.20			
3619425.70		108.30	85.40	115.50	129.20	129.20
129.20	129.20	129.20	114.20			
3619555.70		108.30	115.50	120.50	129.20	129.20
128.50	129.20	129.20	117.00			
3619685.70		108.60	113.20	120.50	129.20	129.20
129.20	129.20	129.20	131.90			
3619815.70		124.00	120.60	119.60	122.00	129.20
129.20	129.20	119.40	125.30			
3619945.70		124.00	120.60	120.60	124.40	128.70
129.20	125.90	121.10	123.60			
3620075.70		143.30	142.20	124.90	121.00	129.20
129.20	131.10	126.10	125.00			

▲ *** AERMOD - VERSION 15181 *** *** PM10 Construction
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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** NETWORK ID: 695KM002 ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)	496320.60	496460.60	496600.60	X-COORD (METERS)
3618645.70	144.20	144.20	130.30	
3618775.70	122.70	144.20	136.90	
3618905.70	116.70	142.70	132.40	
3619035.70	141.20	121.60	130.50	
3619165.70	93.50	130.50	130.50	
3619295.70	110.40	130.50	131.50	
3619425.70	108.60	128.90	133.50	
3619555.70	116.60	128.90	132.30	
3619685.70	131.90	128.50	132.30	
3619815.70	132.30	131.80	129.30	
3619945.70	132.30	132.10	131.40	
3620075.70	131.20	136.10	136.10	

**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(495731.5, 3619533.6, 109.5, 129.2, 0.0); (495730.6, 3619456.4,
 100.4, 129.2, 0.0); (495732.5, 3619393.7, 94.8, 129.2, 0.0); (495794.3, 3619399.5,
 99.2, 129.2, 0.0); (495856.0, 3619403.4, 97.6, 129.2, 0.0); (495882.1, 3619438.1,
 98.6, 129.2, 0.0); (495812.6, 3619548.1, 119.0, 128.2, 0.0);

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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING

* * *

(1=YES ; 0=NO)

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2012 1 1 1
AND END DATE: 2012 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

1.54, 3.09, 5.14, 8.23, 10.80,
↑ *** AERMOD - VERSION 15181 *** *** PM10 Construction
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*** UP TO THE ETBRT 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\Users\XEONRT\AMAZON~1\LDN\17-903~1\AERMOD\KMA2012V15181.SFC
Met Version: 15181

Profile file: C:\Users\XEONRT\AMAZON~1\LDN\17-903~1\AERMOD\KMA2012V15181.PEL

Surface format: FFREE

Profile format: EREE

Surface station no.: 93107 Upper air station no.: 3190
Name: OVERLANDSURFACESTATION Name:
OVERLANDUPPERSTATION
Year: 2012 Year: 2012

- - - - -
 12 01 01 1 01 -0.5 0.025 -9.000 -9.000 -999. 9. 2.6 0.26 1.32 1.00
 0.45 125. 10.0 283.8 10.0
 12 01 01 1 02 -2.3 0.053 -9.000 -9.000 -999. 29. 5.8 0.34 1.32 1.00
 0.89 334. 10.0 283.8 10.0
 12 01 01 1 03 -0.6 0.027 -9.000 -9.000 -999. 11. 3.0 0.38 1.32 1.00
 0.45 5. 10.0 285.9 10.0
 12 01 01 1 04 -0.5 0.025 -9.000 -9.000 -999. 9. 2.6 0.26 1.32 1.00
 0.45 77. 10.0 284.9 10.0
 12 01 01 1 05 -0.6 0.027 -9.000 -9.000 -999. 10. 2.9 0.34 1.32 1.00
 0.45 336. 10.0 285.4 10.0
 12 01 01 1 06 -0.5 0.025 -9.000 -9.000 -999. 10. 2.7 0.29 1.32 1.00
 0.45 233. 10.0 284.2 10.0
 12 01 01 1 07 -0.5 0.025 -9.000 -9.000 -999. 10. 2.7 0.29 1.32 1.00
 0.45 175. 10.0 283.1 10.0
 12 01 01 1 08 27.3 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.31 1.32 0.49
 0.00 0. 10.0 283.1 10.0
 12 01 01 1 09 55.2 0.108 0.487 0.014 75. 85. -2.0 0.37 1.32 0.29
 0.45 329. 10.0 286.4 10.0
 12 01 01 1 10 123.3 0.120 0.896 0.007 208. 100. -1.3 0.37 1.32 0.22
 0.45 321. 10.0 291.4 10.0
 12 01 01 1 11 169.2 0.295 1.303 0.005 468. 384. -13.6 0.37 1.32 0.20
 1.79 320. 10.0 295.4 10.0
 12 01 01 1 12 191.0 0.299 1.625 0.005 805. 392. -12.5 0.37 1.32 0.19
 1.79 310. 10.0 297.0 10.0
 12 01 01 1 13 186.3 0.298 1.865 0.005 1245. 391. -12.7 0.37 1.32 0.19
 1.79 307. 10.0 298.8 10.0
 12 01 01 1 14 160.2 0.293 1.884 0.005 1493. 381. -14.1 0.37 1.32 0.20
 1.79 305. 10.0 299.9 10.0
 12 01 01 1 15 107.4 0.331 1.688 0.005 1601. 456. -30.0 0.37 1.32 0.23
 2.24 305. 10.0 299.2 10.0
 12 01 01 1 16 36.1 0.304 1.180 0.005 1627. 403. -69.5 0.37 1.32 0.32
 2.24 300. 10.0 296.4 10.0
 12 01 01 1 17 -4.7 0.079 -9.000 -9.000 -999. 139. 9.2 0.33 1.32 0.60
 1.34 299. 10.0 294.2 10.0
 12 01 01 1 18 -2.2 0.052 -9.000 -9.000 -999. 36. 5.8 0.33 1.32 1.00
 0.89 279. 10.0 292.0 10.0
 12 01 01 1 19 -0.5 0.025 -9.000 -9.000 -999. 10. 2.6 0.26 1.32 1.00
 0.45 63. 10.0 289.9 10.0
 12 01 01 1 20 -0.6 0.027 -9.000 -9.000 -999. 11. 3.1 0.38 1.32 1.00
 0.45 19. 10.0 288.1 10.0
 12 01 01 1 21 -2.2 0.052 -9.000 -9.000 -999. 29. 5.7 0.33 1.32 1.00
 0.89 290. 10.0 287.0 10.0
 12 01 01 1 22 -2.4 0.054 -9.000 -9.000 -999. 30. 6.0 0.37 1.32 1.00
 0.89 329. 10.0 285.4 10.0
 12 01 01 1 23 -2.3 0.053 -9.000 -9.000 -999. 29. 5.8 0.34 1.32 1.00
 0.89 330. 10.0 284.9 10.0
 12 01 01 1 24 -0.6 0.026 -9.000 -9.000 -999. 10. 2.9 0.33 1.32 1.00
 0.45 291. 10.0 284.9 10.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.0	1	125.	0.45	283.8	48.0	-99.00	0.27

F indicates top of profile (=1) or below (=0)

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS
FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): 695KM001 ,

*** NETWORK ID: 695KM002 ; NETWORK TYPE: GRIDCART ***

** CONC OF PM10 IN MICROGRAMS/M**3

**

Y-COORD (METERS)	495060.60	495200.60	495340.60	495480.60	X-COORD (METERS) 495620.60
495760.60	495900.60	496040.60	496180.60	-	-

Y-COORD (METERS)	495060.60	495200.60	495340.60	495480.60	X-COORD (METERS) 495620.60
3618645.70	0.00002	0.00022	0.00029	0.00055	0.00012
0.00004	0.00004	0.00009	0.00004	-	-
3618775.70	0.00007	0.00055	0.00096	0.00087	0.00014
0.00010	0.00009	0.00022	0.00009	-	-
3618905.70	0.00027	0.00092	0.00116	0.00107	0.00024
0.00048	0.00041	0.00077	0.00067	-	-
3619035.70	0.00091	0.00116	0.00129	0.00130	0.00130
0.00111	0.00182	0.00158	0.00117	-	-
3619165.70	0.00092	0.00116	0.00145	0.00197	0.00254
0.00253	0.00243	0.00205	0.00170	-	-
3619295.70	0.00088	0.00124	0.00183	0.00285	0.00499
0.00628	0.00553	0.00385	0.00243	-	-
3619425.70	0.00086	0.00115	0.00162	0.00285	0.00813
0.02496	0.01561	0.00431	0.00143	-	-
3619555.70	0.00079	0.00106	0.00135	0.00188	0.00462
0.00113	0.00103	0.00173	0.00070	-	-
3619685.70	0.00048	0.00028	0.00115	0.00150	0.00192
0.00083	0.00023	0.00033	0.00044	-	-
3619815.70	0.00049	0.00073	0.00011	0.00120	0.00115
0.00089	0.00048	0.00011	0.00021	-	-
3619945.70	0.00052	0.00062	0.00010	0.00063	0.00073
0.00053	0.00024	0.00007	0.00007	-	-
3620075.70	0.00044	0.00048	0.00044	0.00008	0.00029
0.00035	0.00029	0.00008	0.00004	-	-

▲ *** AERMOD - VERSION 15181 *** *** PM10 Construction

*** 10/10/18

*** AERMET - VERSION 15181 *** ***

*** 09:20:23

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

Y-COORD (METERS)			X-COORD (METERS)
	496320.60	496460.60	496600.60
3618645.70	0.00022	0.00030	0.00007
3618775.70	0.00013	0.00049	0.00032
3618905.70	0.00023	0.00073	0.00062
3619035.70	0.00108	0.00089	0.00057
3619165.70	0.00142	0.00099	0.00047
3619295.70	0.00146	0.00094	0.00054
3619425.70	0.00052	0.00063	0.00051
3619555.70	0.00019	0.00020	0.00034
3619685.70	0.00016	0.00006	0.00008
3619815.70	0.00015	0.00004	0.00004
3619945.70	0.00016	0.00005	0.00003
3620075.70	0.00006	0.00006	0.00003
↑ *** AERMOD - VERSION 15181 *** *** PM10 Construction			
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**MODELOPTs: RegDEFAULT CONC ELEV RURAL
*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS
FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): 695KM001 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

		** CONC OF PM10	IN MICROGRAMS/M**3	
**				
X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)
CONC				
-----	-----	-----	-----	-----
495731.50 0.01370	3619533.60	0.00197	495730.60	3619456.40
495732.50 0.02047	3619393.70	0.02097	495794.30	3619399.50
495856.00 0.01913	3619403.40	0.02169	495882.10	3619438.10
495812.60	3619548.10	0.00161		

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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER
1 YEARS ***

** CONC OF PM10 IN MICROGRAMS/M**3
**

NETWORK			AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS 129.20, 0.00) GC 695KM002	0.02496 AT (495760.60,	3619425.70,	99.60,
129.23,	2ND HIGHEST VALUE IS 0.00) DC	0.02169 AT (495856.00,	3619403.40,	97.58,
129.23,	3RD HIGHEST VALUE IS 0.00) DC	0.02097 AT (495732.50,	3619393.70,	94.76,
129.23,	4TH HIGHEST VALUE IS 0.00) DC	0.02047 AT (495794.30,	3619399.50,	99.24,
129.23,	5TH HIGHEST VALUE IS 0.00) DC	0.01913 AT (495882.10,	3619438.10,	98.56,
129.20,	6TH HIGHEST VALUE IS 0.00) GC 695KM002	0.01561 AT (495900.60,	3619425.70,	96.70,
129.23,	7TH HIGHEST VALUE IS 0.00) DC	0.01370 AT (495730.60,	3619456.40,	100.41,
129.20,	8TH HIGHEST VALUE IS 0.00) GC 695KM002	0.00813 AT (495620.60,	3619425.70,	95.90,
129.20,	9TH HIGHEST VALUE IS 0.00) GC 695KM002	0.00628 AT (495760.60,	3619295.70,	88.60,
129.20,	10TH HIGHEST VALUE IS 0.00) GC 695KM002	0.00553 AT (495900.60,	3619295.70,	88.50,

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

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**MODELOPTs: RegDEFAULT CONC ELEV RURAL

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 178 Informational Message(s)

A Total of 8784 Hours Were Processed

A Total of 101 Calm Hours Identified

A Total of 77 Missing Hours Identified (0.88 Percent)

***** FATAL ERROR MESSAGES *****

*** NONE ***

***** WARNING MESSAGES *****

*** NONE ***

*** AERMOD Finishes Successfully ***

ATTACHMENT C

Construction Cancer Risk Calculations

Air Quality Construction Health Risk Calculations		Lisbon Heights
From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	0.00056
	Number of Workdays	250
	Emission per day (lb/day)	0.00448
	Construction day (Hours)	8
	Emission Rate (Grams/Second)	7.04667E-05
	Project Site Size (Acres)	3.7
	Project Site Size (meters)	14973.382
	Length of Smalles Side (meters)	122.3657714
Used as an input to AERMOD	Emission Rate over Grading Area	4.70613E-09
Construction Emission Concentration from AERMOD		0.0193
Duration	Construction Days	Construction Days converted to years
	250	0.684931507
Age (Years)	3rd Trimester (0.25)	0-2 2-9 2-16 16-30 16-70
Cair (annual)	0.0193	0.0193 0.0193 0.0193 0.0193 0.0193
Average Breathing Rate per age group BR/BW	225	658 535 452 210 185
A (Default is 1)	1	1 1 1 1 1
Exposure Frequency = EF (days/365days)	0.96	0.96 0.96 0.96 0.96 0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001 0.000001 0.000001 0.000001 0.000001
Dose-inh	0.00000417	0.00001219 0.0000091 0.00000837 0.00000389 0.00000343
Construction Days	183	0.501369863
potency factor for Diesel	1.1	1.1
Age Sensitivity Factor	10	10 11 12 13 14
ED	0.25	0.501369863 0.501369863 0.501369863 0.501369863 0.501369863
AT	70	70 70 70 70 70
FAH (USE 1 if School for 3rd and 2-9) Page 8-5	0.85	0.85 0.72 0.72 0.73 0.73
Risk for Each Age Group	1.39208E-07	8.16444E-07 6.18529E-07 5.70077E-07 2.90916E-07 2.75997E-07
	0.139208143	0.81644368 0.618529441 0.570077092 0.290915539 0.275996794
Cancer Risk Per Million 9-years	1.57	
Cancer Risk Per Million 30-years	1.82	
Cancer Risk Per Million 70-years	1.80	