

AIR QUALITY ASSESSMENT

**Shadow Run Ranch Residential Development
TM 5223 RPL³, ER 00-02-035, P00-030
County of San Diego, CA**

Lead Agency:

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LIST OF 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 determine the air quality impacts associated with the development of the proposed Shadow Run Residential Development. The Project proposes the subdivision of 248.2 acres into 44 residential lots on 105.1 acres, a biological open space lot of 91.3 acres, a recreation lot containing an existing man-made pond on 8 acres, and an agricultural lot of 39.2 acres on which existing agricultural groves will be maintained by the Project's Homeowner's Association (HOA). Additionally, existing agricultural groves outside of the pads and roads on each lot will be retained. The maintenance of these residential lot groves will also be covered by the HOA. Existing structures, consisting of a manager's residence, sheds, and a barn, will be demolished to make way for the development. All phases (i.e. grading, trenching, paving and construction) of the proposed Project are anticipated to start in 2017 with construction and full Buildout sometime in 2018.

During construction of the proposed Project, fugitive dust emissions will be expected during grading, heavy equipment usage, and from construction workers commuting to and from the site but would not exceed San Diego Air Pollution Control District (SDAPCD) thresholds and will not require mitigation.

A screening-level health risk assessment was conducted to determine the potential for the project to result in a significant impact on nearby sensitive receptors during short-term construction activities. For purposes of this analysis, the primary pollutant of concern is diesel particulate matter (DPM) which is emitted by the operation of heavy diesel equipment during construction activities. The number of individuals exposed to DPM of this concentration due to the project would be less than one in one million. Therefore, no health risks are expected.

Also, no concurrent large projects are expected to be under construction simultaneously to the proposed project so cumulative construction impacts are not expected. Furthermore, since the project's cumulative increase does not exceed General Plan densities for the proposed site, the project would conform to the requirements in the RAQS and SIP. Finally, the proposed project would not be exposed to offensive odors from offsite sources such as the Pala Wastewater Treatment Plant or the Gregory Canyon Landfill due to the fact that the proposed projects are separated by significant intervening topography, however, the County of San Diego will require the project applicant to disclose the relative locations of these offsite uses to perspective buyers. Also, no onsite odors are expected except agricultural odors which will be fully disclosed to future residents. The project will be conditioned for disclosure of expected onsite odors. These odors are typical for rural uses such as those proposed so no odor impacts are expected.

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 bring those impacts to a level that would be considered less than significant.

1.2 Project Location

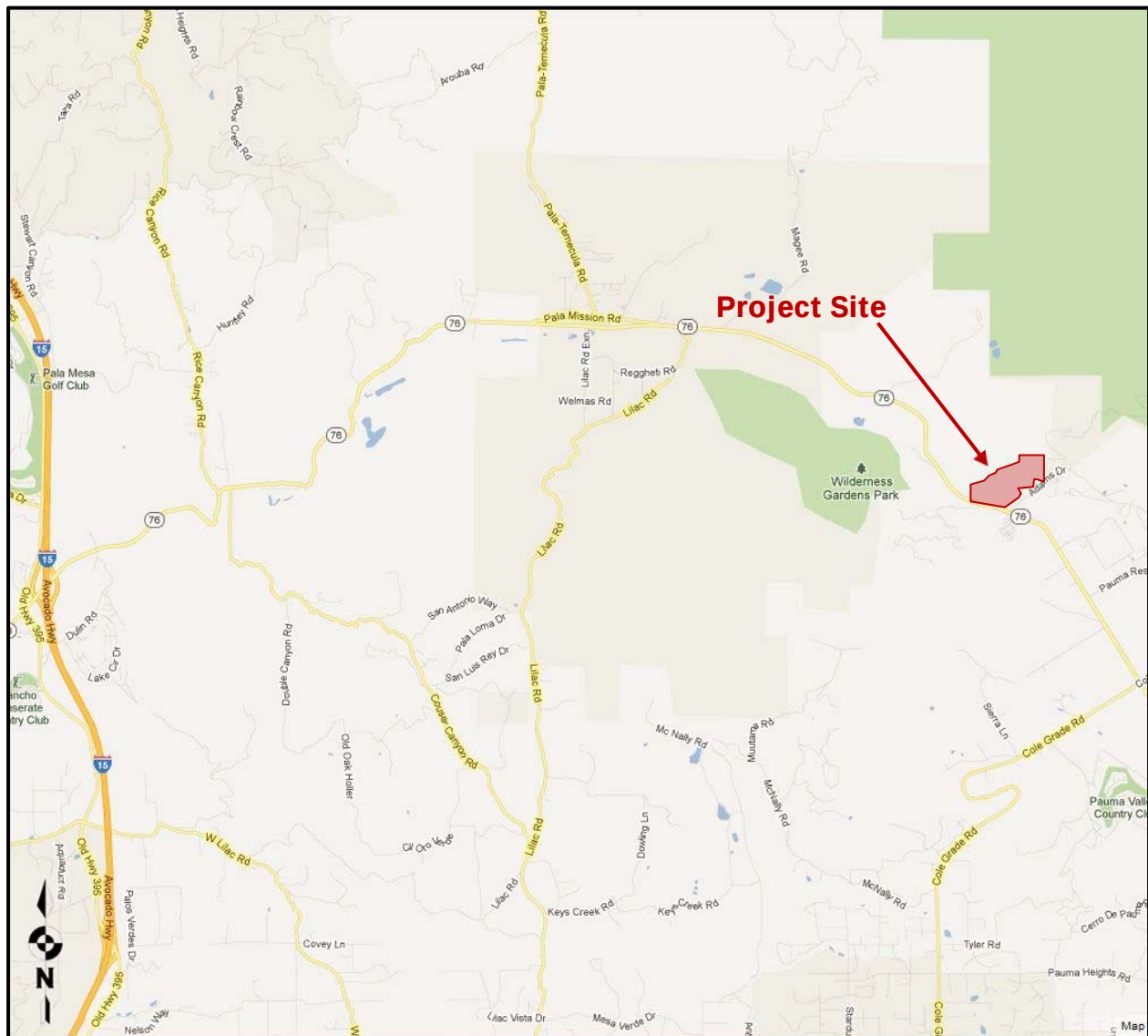
The proposed development is located in the unincorporated County of San Diego, approximately ten miles east of Interstate 15. The Project is adjacent to State Route 76 (SR 76) just north of Adams Drive. Access to the Project site is provided by SR 76. State Route 76 and Pala Temecula Road are arterials that connect the Project to other arterials. Interstate 15 provides regional access to the Project site. A general project vicinity map is shown in Figure 1-A on the following page.

1.3 Project Description

The proposed project seeks the development of 47 lots consisting of 44 residential uses with a 2-acre minimum size and 3 open space areas over a 248.26 acre project site in the Pala/Pauma Sub regional Area. Out of the 248.26 acres only approximately 110 acres will be graded for residential lots and the rest will be used as open space. Grading will include a total of 63,660 cubic yards (cu yd) of earthwork and is expected to balance. Grading could start sometime in 2017 and full Buildout could be as soon as 14-months later in 2018.

Also, as part of this project, existing agricultural groves outside of the pads and roads on each lot will be retained while maintenance of these groves will be covered by the HOA. Existing structures, consisting of a manager's residence, sheds, and a barn, will be demolished to make way for the development. A site development plan is shown in Figure 1-B.

Figure 1-A: Project Vicinity Map



Source: (Google, 2012)

COUNTY OF SAN DIEGO TRACT NO. TM 5223 RPL-3
SHADOW RUN RANCH, PAUMA VALLEY
PRELIMINARY GRADING PLAN
FOR DETAIL OF GRADING
SEE SHEETS 2 & 3

LEGEND

- BROWITCH
- SWALE / PAD DRAINAGE
- STORM DRAIN
- DAYLIGHT
- FILL SLOPES 2:1 MAX
- CUT SLOPES 2:1 MAX
- LOT#
- PAD GRADE
- AC BERM / 8' TRAIL
- SUB BOUNDARY
- FIRE CLEARING
- PROPOSED WATER
- EXISTING YUMA WATER
- DIRECTION OF DRAINAGE % SLOPE
- STREET ELEVATION
- LEACH FIELD
- HYDRO-MOD / INF#

Nearest Residential Receptor 180 meters from Project Boundary

LOT MAP AND SHEET INDEX

SCALE: 1" = 200'

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The Project site lies in the northern portion of San Diego County 10 miles east of Interstate 15, approximately 40 miles north of the City of San Diego, north of Pala Road (State Route 76) and northwest of Adams Drive. The Pala Band of Mission Indians Reservation lies west of the proposed Shadow Run development. The existing use of the Project site is residential and agricultural. The Shadow Run plan area is generally represented by a diverse topography with elevations ranging from 720 feet to 1,620 feet above mean sea level. The northern portion of the site is generally steep sloped generally transitioning into a moderately sloped topography to the south. Land uses directly surrounding the project are agricultural and undeveloped lands.

The Pala Casino Resort and Spa is located west of the Project site and contains on-site facilities for numerous amenities such as shopping, a day spa, golfing, dining, entertainment, a resort hotel, and a small commercial center. The Pala Casino Resort and Spa facilities have recently undergone a major renovation and expansion, which created parking structures further to the west, towards the SPA.

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 heat 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 Pala area generally are very similar to that of nearby Bonsall where daytime highs typically range between 68°F in the winter to approximately 83°F in the summer with August usually being the hottest month. Median temperatures range from approximately 56°F in the winter to approximately 73°F in the summer. The average humidity is approximately 65% in the winter and about 73% in the summer. (City-Data, 2015).

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 with the intention of protecting public health, which includes sensitive populations such as asthmatics, 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 U.S. Environmental Protection Agency (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 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 (SO₂):** *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. SO₂ is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO₂ 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 SO₂ 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 restrict 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 (H₂S):** *is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H₂S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H₂S 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 asthmatics. 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)	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m ³)		0.075 ppm (147 µg/m ³)		
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		-		
Fine Particulate Matter PM _{2.5}	24 Hour	No Separate State Standard		35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12.0 µg/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)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³) ⁸	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m ³)		0.100 ppm ⁸ (188/ µg/m ³)		
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm (for Certain Areas)	-	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method) ⁹
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m ³)	
	1 Hour	0.25 ppm (655 µg/m ³)		75 ppb (196 µg/m ³)	-	
Lead ¹⁰	30 Day Average	1.5 µg/m ³	Atomic Absorption	-	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		1.5 µg/m ³		
	Rolling 3-Month Average	-		0.15 µg/m ³		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more (0.07 -30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape				
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹⁰	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			
1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM₁₀, PM_{2.5}, and visibility reducing articles, are values that are not to be exceeded. All others are not to be equalled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. 2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration 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 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies. 3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas. 4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used. 5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. 6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. 7. Reference method as described by the 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. 8. 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. 9. 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. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm. 10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants. 11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved. 12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively. Source: California Air Resources Board (6/4/13)						

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. 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 18 non-attainment areas for the federal ozone standard, 10 non-attainment areas for the federal PM₁₀ standard, and seven non-attainment areas for the federal PM_{2.5} standard in California. 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 San Diego County. Therefore, the SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status. Currently, San Diego is in “non-attainment” status for federal O₃ and the State PM₁₀ and PM_{2.5} however, an attainment plan is only available for O₃. The RAQS was adopted in 1992 and has been updated as recently as 2009 which was the latest update incorporating minor changes to the prior 2004 update.

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 and projects that create more growth than projected by SANDAG may create a significant impact assuming the project either produces unmitigable emission generation in excess of the regional standards. Also the project would be considered a significant impact if the project produces cumulative impacts.

The 2009 update mostly clarifies and enhances emission reductions by implementing new VOC and NOX reduction measures. 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.

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

San Diego County Air Basin Attainment Status by Pollutant			
Pollutant	Average Time	California Standards	Federal Standards
Ozone (O ₃)	1 Hour	Non-attainment	No Federal Standard
	8 Hour		Basic Non-attainment
Respirable Particulate Matter (PM ₁₀)	24 Hour	Non-attainment	Unclassified ¹
	Annual Arithmetic Mean	No State Standard	Unclassified ²
Fine Particulate Matter PM _{2.5}	24 Hour	No State Standard	Attainment
	Annual Arithmetic Mean	Non-attainment	Attainment
Carbon Monoxide (CO)	8 hour	Attainment	Maintenance Area ³
	1 hour		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	No State Standard	Attainment
	1 Hour	Attainment	No Federal Standard
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	No State Standard	Attainment
	24 Hour	Attainment	Attainment
	1 Hour	Attainment	No Federal Standard
Lead	30 Day Average	Attainment	No Federal Standard
	Calendar Quarter	No State Standard	Attainment
Visibility Reducing Particles	8 Hour (10AM to 6PM, PST)	Unclassified	No Federal Standard
Sulfates	24 Hour	Attainment	No Federal Standard
Hydrogen Sulfide	1 Hour	Unclassified	No Federal Standard
1. Data reflects status as of March 19, 2009. 2. Unclassified; indicates data are not sufficient for determining attainment or nonattainment. 3. Maintenance Area (defined by U.S. Department of Transportation) is any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended.			

2.4 California Environmental Quality Act (CEQA) Significance Thresholds

The California Environmental Quality Act has provided 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; however, the County's Guidelines for Determining Significance and Report Format and Content Requirements should be used for Air Quality Impact Assessments (AQIA) for determining CEQA impacts. These screening criteria can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA. Also, since SDAPCD does not have an AQIA threshold for Volatile Organic Compounds (VOCs), it is acceptable to use the Coachella Valley VOC threshold from 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 screening thresholds for construction and daily operations are shown in Table 2.3 below.

Table 2.3: Screening Threshold 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 cancer risk to over 10 in one million. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology.

The U.S. Environmental Protection Agency (U.S. EPA) uses the term Volatile Organic Compounds (**VOC**) and the California Air Resources Board's (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 that SCAQMD interchanges these words and because CALEEMOD 2013.2.2 directly calculates ROG in place of VOC.

2.6 Local Air Quality

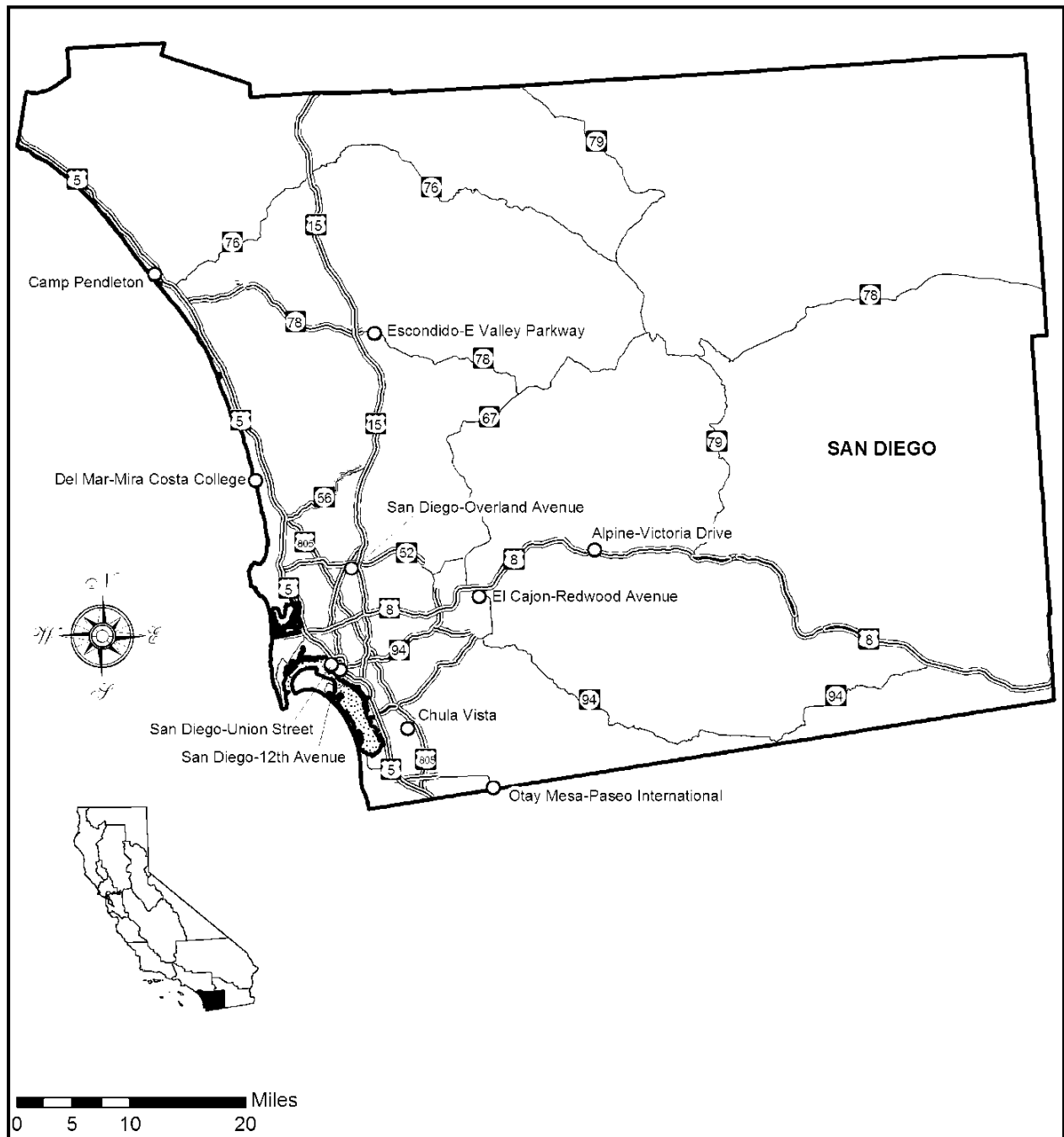
Criteria pollutants are measured continuously throughout the San Diego Air Basin. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS. The SDAPCD is responsible for monitoring and reporting monitoring data. The District operates 10 monitoring sites, which collect data on criteria pollutants. The proposed development project is closest to the Escondido Monitoring station which is located approximately 15.3-miles from the Project site. Table 2.4 on the following page identifies the criteria pollutants monitored at the aforementioned station.

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 on the following page shows the relative locations of the monitoring sites. SDAPCD published the five year air quality summary for all of the monitoring stations within the following link (SDAPCD, 2015).

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

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2012	2013	2014
O ₃ (ppm)	Escondido-E Valley Parkway	1 Hour	0.09 ppm	-	0.08	0.08	0.10
		8 Hour	0.070 ppm	0.075 ppm	0.07	0.07	0.08
PM ₁₀ (µg/m3)		24 Hour	50 µg/m3	150 µg/m3	33	80	43
		Annual Arithmetic Mean	20 µg/m3	-	18.0	23.1	21.6
PM _{2.5} (µg/m3)		24 Hour	-	35 µg/m3	71	56.3	30.4
		Annual Arithmetic Mean	12 µg/m3	15 µg/m3	10.5	10.5	9.5
NO ₂ (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.012	0.012	0.011
		1 Hour	0.18 ppm	-	0.062	0.061	0.063
CO (ppm)		8 Hour	9 ppm	9 ppm	3.8	2.6	3.1
		1 Hour	35 ppm	20 ppm	4.4	3.2	3.8
All ambient emissions reported are assumed to be taken by the district in compliance with both the NAAQS and CAAQS. Methodologies for those measurements are discussed in Table 2.1 of this report.							

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



3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod air quality model, which was developed by ENVIRON International Corporation for South Coast Air Quality Management District (SCAQMD) in 2013. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the project and uses methodologies presented in the US EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in **Attachment A** to this report.

Cancer Risk will be determined for Diesel Particulate Matter (DPM) at the point of maximum exposure for grading footprint of 175 Acres. The SCREEN3 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 SCREEN3 input/output file for the proposed project is shown in **Attachment B** at the end of this report. The worst case exhaust emissions generated from the Project from construction equipment was utilized and calculated within the CalEEMod model. The worst case cancer risk if exposed to a DPM dose for 70 years is defined as:

$$CR_{DPM} = C_{DPM} \times URF_{DPM}$$

$$CR_{DPM} = C_{DPM} \times URF_{DPM}$$

Where, CR_{DPM} = Cancer risk from diesel particulate matter (probability on an individual developing Cancer)

C_{DPM} = Annual average DPM concentration in $\mu\text{g}/\text{m}^3$ (SCREEN3 predicts a 1-hr concentration and is corrected to an annual average by multiplying the 1-hr average by 0.08 (US EPA, 1992)

URF_{DPM} = the inhalation unit risk factor for diesel particulate was established by ARB as 300 in one million per continuous exposure of 1 $\mu\text{g}/\text{m}^3$ of DPM over a 70-year period (South Coast Air Quality Management District, August 2013).

3.2 Construction Assumptions

The Project construction would be expected to take approximately 14 months to complete. Existing onsite structures will be demolished within roughly nine days. The grading operations are expected to take up to six months. After grading is complete trenching and paving operations would take an additional two months and then the residential buildings will be built out over the following 6-months. The entire build out of the Project would be expected no sooner than August 2015 which would encompass about 314 workdays. Table 3.1 on the following page shows the expected timeframes for the construction processes for all the

project infrastructure, facilities, improvements and residential structures at the proposed project location.

Table 3.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Completion	Construction Days	Quantity
Demolition	5/20/2017	5/31/2017	8	
Excavators				1
Mass Site Grading	6/1/2017	12/15/2017	142	
Scrapers				3
Tractors/Loaders/Backhoes				3
Excavators				1
Graders				1
Rubber Tired Dozers				1
Water Trucks				1
Trenching	12/16/2017	1/16/2018	22	
Excavators				2
Other General Industrial Equipment				1
Tractors/Loaders/Backhoes				1
Paving	1/17/2018	2/10/2018	19	
Paving Equipment				2
Rollers				2
Pavers				1
Building Construction	2/13/2018	7/31/2018	121	
Forklift				3
Tractor/loader/backhoe			(Total: 312 Days)	3
Crane				1
Generator				1
Welders				1
Architectural Coating	5/15/2018	7/31/2018	56 (Overlapped with Building Construction)	
This equipment list is based upon equipment inventory within CALEEMOD 2013.2.2. The quantity and types are based upon assumptions from Projects of similar size and scope in the County of San Diego.				

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 shown in Attachment A at the end of this report.

The Project traffic engineer estimated that there will be 528 daily trips which were broken down within the Project traffic study (Source: Shadow Run Ranch Traffic Impact Study, KOA Corporation 2012). These traffic numbers were utilized within the CalEEMod analysis. The model also estimates emission predictions for ROG, NO_x, CO, SO₂, PM₁₀ and PM_{2.5} for area source assumptions. Additionally, it was assumed that an average of 10% of the structural surface area will be re-painted each year and the project would be designed to utilize natural gas hearth options. All hearth options shall not be designed to burn wood.

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 emission factors were utilized within the CalEEMod.

3.4 Micro Scale Operational Emissions

Air pollutant emissions related to project traffic have the potential to create new, or worsen existing localized air quality violations with respect to carbon monoxide (CO). These increased carbon monoxide "Hot Spots" are determined through the utilization of the ITS Transportation Project-Level Carbon Monoxide Protocol (University of California, Davis for California Department of Transportation, 1997).

In the event the proposed project traffic adds vehicular trips to either an intersection that operates at LOS E or F or any intersection where the project trips re-classify the intersection level of service to LOS E or F and when peak-hour trips exceed 3,000 the Project must quantify CO levels (County of San Diego, 2007).

Based on the project traffic study, at no time will the project directly or cumulatively cause existing intersections within the project study area to operate at LOS E or F and would therefore not require micro-scale CO emission analysis and will not be discussed further in this report.

3.5 Odor Impacts (Onsite)

Potential onsite odor generators would include short term construction odors from activities such as paving and possibly painting as well as odors from agricultural uses. Odors created during short term construction activities would most likely be from placing asphalt which has a slight odor from the bitumen and solvents used within hot asphalt. Asphalt operations are fairly quick and are not expected to cause significant long-term odor impacts.

Agricultural uses may produce odors which can be offensive to some individuals but would be consistent with this type of project in a rural setting such as is proposed. As a design feature of this project, all future residents will be provided full disclosure that every lot contains existing agriculture, and any odors associated with the continued agricultural use will be mutual and understood within the development and with existing neighbors. Given this, odors onsite generated from agricultural uses would not be considered offensive to future residents. Therefore, the Project will not have a potential to create offensive odors to any sensitive receptors onsite and would therefore not be considered an impact under CEQA. Further discussion of onsite odor impacts is not included in this report.

3.6 Odor Impacts (Offsite)

Odor producing projects from offsite sources such as the nearby Gregory Canyon Landfill or the Pala Wastewater treatment facility are expected to generate odors but odors from these facilities are not expected to reach any of the proposed uses within the Shadow Run development. This conclusion is based on the fact that odor impacts from these uses would be limited by regulatory oversight from SDAPCD. These facilities would be required to mitigate odors at their property boundary. Also, a large buffer of distance (over 1 mile) and intervening topography separate those operations from the Shadow Run development project. Furthermore the focused air quality study for the Gregory Canyon Landfill indicated that odors would be minimized by covering all waste with soil immediately after waste is dropped off and would therefore not create odor impacts. (Source: Gregory Canyon Landfill/Final EIR – December 2002).

4.0 FINDINGS

4.1 Construction Findings

The Project construction would be expected to take approximately 14 months to complete. Existing onsite structures will be demolished within roughly nine days. The grading operations are expected to take up to six months. Grading operations are anticipated to occur at a daily intensity of 457 cubic yards on average. After grading is complete trenching and paving operations would take an additional two months and then the residential buildings will be built out over the following 6-months.

The entire build out of the Project would be expected no sooner than 2018. Additionally, architectural coatings could be applied concurrent to building construction. A summary of the construction emissions is shown in Table 4.1. Based on CALEEMOD modeling, the proposed project would not generate significant fugitive dust emissions and would not require mitigation for compliance with CEQA.

Table 4.1: Expected Construction Emissions Summary (Unmitigated)

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)
2016	8.660	99.431	63.838	0.087	7.163	4.675	11.838	3.484	4.301	7.784
2017	30.100	29.089	21.646	0.034	0.273	1.962	2.235	0.073	1.853	1.926
Significance Threshold (lb/day)	75	250	550	250	-	-	100	-	-	55
SDAPCD Impact?	No	No	No	No	-	-	No	-	-	No

4.2 Health Risk

Based upon this air quality modeling for construction, we find that worst-case annual PM₁₀ emission from exhaust would be 0.48 tons over the construction life of the project and since there are approximately 312 construction days necessary for construction, it can be expected that exhaust emissions would average out to be 3.077 lb/day. Converting pounds (lbs) per day to grams per second is shown below:

$$\frac{3.077 \frac{lb}{day} * 453 \frac{grams}{lb}}{28,800 \frac{seconds}{Constructionday}} = 0.0484 \frac{grams}{second}$$

The average emission rate over the grading area is $1.09 \times 10^{-7} \text{ g/m}^2/\text{s}$, which was calculated as follows:

$$\frac{0.0484 \frac{grams}{second}}{110 acres * 4,046 \frac{meters^2}{acre}} = 1.09 * 10^{-7} \frac{grams}{meters^2 second}$$

Utilizing the SCREEN3 dispersion model, we find that the peak maximum 1-hr concentration is $9.955 \text{ } \mu\text{g/m}^3$ during the worst-case construction period. Converting the peak 1-hr concentration to an annual concentration reduces the concentration to $0.7964 \text{ } \mu\text{g/m}^3$. Therefore, utilizing the risk equation identified above and calculating that the cancer risk over a 70 year continuous dose would be:

$$CR_{\text{DPM-70yr dose}} = 0.0003 \times 0.7964 = 0.000238$$

The proposed project is expected to generate maximum DPM during grading of the project, which is expected to be approximately 314 workdays. This would work out to 104-24 hr days out of 70 years or $104/25,550$ or 0.0041 times the CR_{DPM} . If one million people were exposed to the maximum DPM for the duration of grading, the estimated increased cancer risk could be:

$$0.00407 \times 0.000238 \times 1,000,000 = 0.97 \text{ individuals per million}$$

The maximum DPM is projected to occur approximately 498 meters from the geometric center of the project. The numerical number of individuals exposed to DPM of this concentration from the project would be less than one in one million and would not be considered an impact. Sensitive receptors including the existing residential development onsite would not be exposed to DPM in excess of that predicted in this analysis as all receptors either within or beyond the 498 meter radius would have a CR of less than 0.6345 individuals per million.

The nearest offsite residential receptor is roughly 180 meters from the project site as identified in Figure 1-B above. At this distance, the peak maximum 1-hr concentration would be $7.971 \text{ } \mu\text{g/m}^3$ during grading having an annual concentration of $0.6377 \text{ } \mu\text{g/m}^3$. Using the same methodology above, the cancer risk after correcting for construction duration would be 0.78

which is less than one in one million and would not be considered an impact. The discreet modeling for this distance is also shown in the attached SCREEN 3 Model.

4.3 Operational Findings

Based on the Project's traffic study the proposed Project could add as many as 528 daily trips once the Project is fully operational sometime in the year 2018. Specific trip characteristics are not expected to be as high as predicted in CalEEMod given the relative close distances to the Casino and its amenities. However, for purposes of this analysis, the expected daily pollutant generation can be calculated utilizing the rural trip assumptions.

The expected daily pollutant generation can be calculated utilizing the product of the average daily miles traveled and the expected emissions inventory calculated by EMFAC2011; CalEEMod performs this calculation. The daily pollutants calculated for summer and winter are shown in Table 4.2 and Table 4.3. Given the findings, no impacts are expected and mitigation would not be necessary. It should be noted however that the project would be required to utilize Title 24, 2013 which has been designed to maximize building efficiency and would reduce emissions by as much as 25% for electrical and natural gas consumption for residential structures. These reductions were not incorporated within this AQ report but were shown on the project Greenhouse Gas Analysis. Given this, all calculations for operations are considered worst-case.

Table 4.2: Expected Summer Daily Pollutant Generation

	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	69.55	0.96	86.61	0.03	11.67	11.67
Energy	0.04	0.31	0.13	0.00	0.02	0.02
Mobile	1.94	4.90	22.33	0.06	4.20	1.17
Total (Lb/Day)	71.53	6.17	109.06	0.10	15.90	12.87
SDAPCD Thresholds	75	250	550	250	100	55
Significant?	No	No	No	No	No	No
Daily pollutant generation assumes trip distances within CALEEMOD 2013.2.2						

Table 4.3: Expected Winter Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM₁₀	PM_{2.5}
Area	69.55	0.96	86.61	0.03	11.67	11.67
Energy	0.04	0.31	0.13	0.00	0.02	0.02
Mobile	2.05	5.22	22.86	0.06	4.21	1.17
Total (Lb/Day)	71.64	6.48	109.60	0.09	15.90	12.87
SDAPCD Thresholds	75	250	550	250	100	55
Significant?	No	No	No	No	No	No
Daily pollutant generation assumes trip distances within CALEEMOD 2013.2.2						

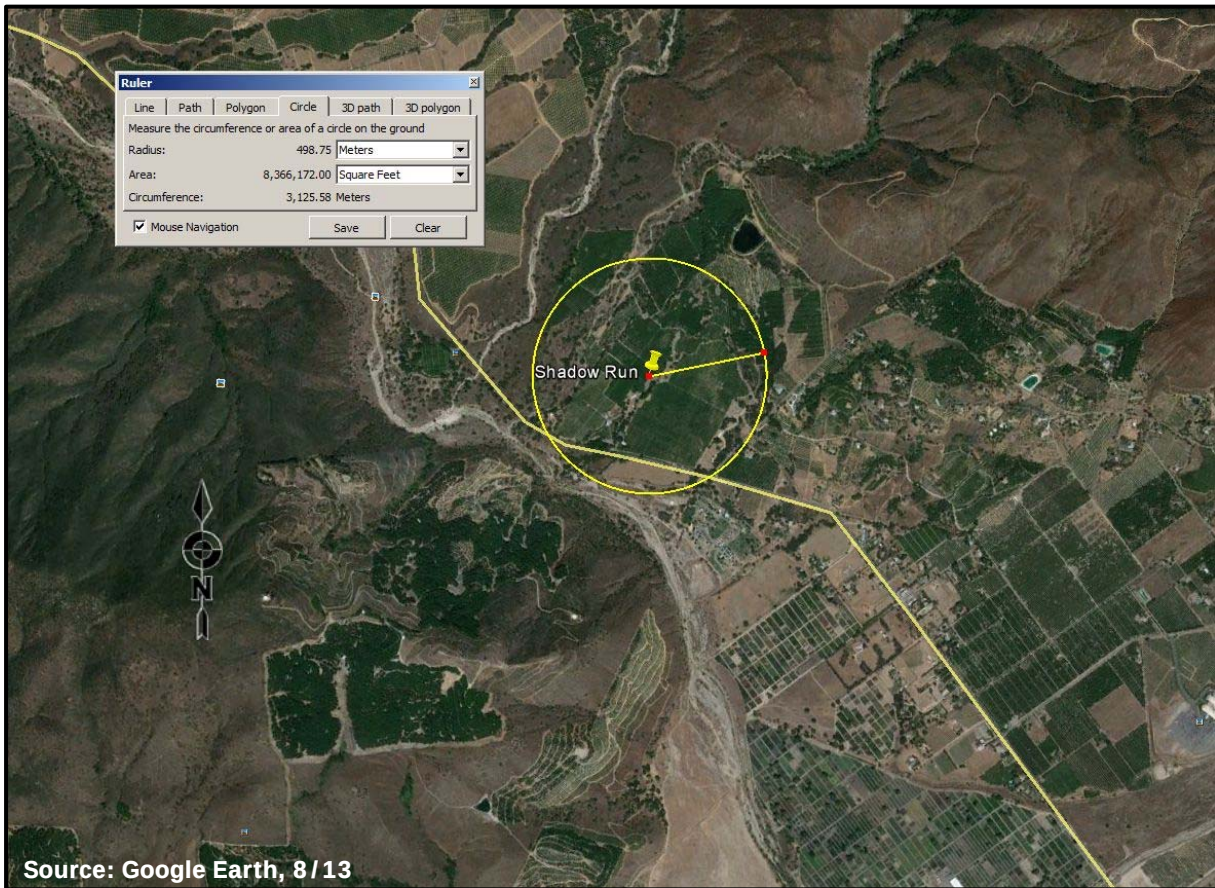
4.4 Cumulative Impact Findings

The proposed A70 zoned project does not propose increasing density to beyond what is currently allowed within the general plan and therefore is consistent with both the RAQS and the SIP.

Furthermore, from a health risk perspective, there are no identified projects within the worst case construction emission radius as predicted by the SCREEN3 model. Figure 4-A on the following page shows the worst case 498 meters radius for a visual understanding of this concept. Since no overlapping construction emissions are expected the worst case health risk probabilities are not expected to increase above 10 in one million and would therefore not be considered an impact.

As identified in Section 4.1 above, no direct impacts are expected. Also, since future construction projects are not expected to overlap with the proposed project, no cumulative projects would be expected either.

Figure 4-A: Worst Case DPM Construction Contour



4.5 Conclusion of Findings

Based upon the analysis of construction and operation activities for the proposed project, construction impacts would not be expected as found using CalEEMod 2013.2.2. Diesel Particulate Matter during construction was also found to be below significance. Therefore, the project would not be required to utilize T-BACT certified equipment to satisfy CEQA. Also, no concurrent large projects are expected to be under construction simultaneously to the proposed project so cumulative construction impacts are not expected. Furthermore, since the project does not create any direct impacts and does not seek to change zoning designations, the project would be consistent with the RAQS and SIP.

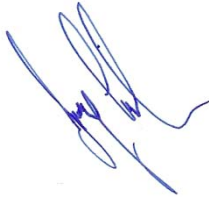
The proposed project would not be exposed to offensive odors from offsite sources such as the Pala Wastewater Treatment Plant or the Gregory Canyon Landfill due to the fact that the proposed projects are over one mile away and are separated by significant intervening topography. It should be noted however, the County of San Diego will require full disclosure of these uses to all perspective buyers.

5.0 References

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- US EPA. (1992). Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised . US EPA.

6.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the air quality environment and impacts within and surrounding the proposed Shadow Run Ranch development. This report was prepared utilizing the latest emission rates and reduction methodologies. This report was prepared by Jeremy Loudon; a County approved CEQA Consultant for Air Quality.



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Date February 21, 2017

ATTACHMENT A

CALEEMOD 2013.2.2

Shadow Run (2018)
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	44.00	Dwelling Unit	110.00	79,200.00	126

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
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

Project Characteristics -

Land Use - 110 Acres will be graded

Construction Phase - Proposed Construction Duration

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Off-Highway Truck was used as a water truck

Off-road Equipment - Proposed Trenching Equipment

Trips and VMT -

Demolition -

Grading - Project would only grade 110 acres

Vehicle Trips - Trip Generation Estimated at 12 Trips per day per dwelling unit

Mobile Land Use Mitigation -

Energy Mitigation - 13% of energy produced by offsite renewables...

Water Mitigation -

Waste Mitigation -

Area Coating - Emission Factor not to exceed 150 g/l

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250

tblConstructionPhase	NumDays	220.00	56.00
tblConstructionPhase	NumDays	3,100.00	121.00
tblConstructionPhase	NumDays	200.00	8.00
tblConstructionPhase	NumDays	310.00	142.00
tblConstructionPhase	NumDays	220.00	19.00
tblConstructionPhase	PhaseEndDate	10/17/2017	7/31/2017
tblConstructionPhase	PhaseStartDate	8/1/2017	5/15/2017
tblGrading	AcresOfGrading	497.00	110.00
tblLandUse	LotAcreage	14.29	110.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	HorsePower	87.00	238.00
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	ST_TR	10.08	12.00
tblVehicleTrips	SU_TR	8.77	12.00
tblVehicleTrips	WD_TR	9.57	12.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	8.6596	99.4305	63.8375	0.0865	7.1629	4.6746	11.8375	3.4836	4.3006	7.7842	0.0000	8,908.1719	8,908.1719	2.6025	0.0000	8,962.8252
2017	30.0997	29.0888	21.6464	0.0339	0.2727	1.9619	2.2346	0.0729	1.8531	1.9260	0.0000	3,272.5329	3,272.5329	0.7080	0.0000	3,287.4015
Total	38.7593	128.5192	85.4839	0.1204	7.4356	6.6365	14.0721	3.5565	6.1537	9.7102	0.0000	12,180.7048	12,180.7048	3.3106	0.0000	12,250.2267

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	8.6596	99.4305	63.8375	0.0865	7.1629	4.6746	11.8375	3.4836	4.3006	7.7842	0.0000	8,908.1719	8,908.1719	2.6025	0.0000	8,962.8252
2017	30.0997	29.0888	21.6464	0.0339	0.2727	1.9619	2.2346	0.0729	1.8531	1.9260	0.0000	3,272.5329	3,272.5329	0.7080	0.0000	3,287.4015
Total	38.7593	128.5192	85.4839	0.1204	7.4356	6.6365	14.0721	3.5565	6.1537	9.7102	0.0000	12,180.7048	12,180.7048	3.3106	0.0000	12,250.2267

[illegible]

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	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.956 2	519.0069	1,740.963 0	1.1341	0.0961	1,794.576 0
Energy	0.0360	0.3072	0.1307	1.9600e- 003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e- 003	7.1900e- 003	394.5716
Mobile	1.9435	4.9049	22.3255	0.0609	4.1343	0.0704	4.2048	1.1036	0.0649	1.1686		4,974.887 2	4,974.887 2	0.1890		4,978.855 5
Total	71.5318	6.1681	109.0643	0.0955	4.1343	11.7695	15.9039	1.1036	11.7637	12.8673	1,221.956 2	5,886.079 0	7,108.035 1	1.3306	0.1033	7,168.003 1

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	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.956 2	519.0069	1,740.963 0	1.1341	0.0961	1,794.576 0
Energy	0.0360	0.3072	0.1307	1.9600e- 003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e- 003	7.1900e- 003	394.5716
Mobile	1.9435	4.9049	22.3255	0.0609	4.1343	0.0704	4.2048	1.1036	0.0649	1.1686		4,974.887 2	4,974.887 2	0.1890		4,978.855 5
Total	71.5318	6.1681	109.0643	0.0955	4.1343	11.7695	15.9039	1.1036	11.7637	12.8673	1,221.956 2	5,886.079 0	7,108.035 1	1.3306	0.1033	7,168.003 1

	ROG	NOx	CO	SO2	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/20/2016	5/31/2016	5	8	
2	Grading	Grading	6/1/2016	12/15/2016	5	142	
3	Trenching	Trenching	12/16/2016	1/16/2017	5	22	
4	Paving	Paving	1/17/2017	2/10/2017	5	19	
5	Building Construction	Building Construction	2/11/2017	7/31/2017	5	121	
6	Architectural Coating	Architectural Coating	5/15/2017	7/31/2017	5	56	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 110

Acres of Paving: 0

Residential Indoor: 160,380; Residential Outdoor: 53,460; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	189	0.50
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	3	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Excavators	2	8.00	162	0.38
Trenching	Other General Industrial Equipment	1	8.00	238	0.34
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	5.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	25.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	16.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1246	0.0000	0.1246	0.0189	0.0000	0.0189			0.0000			0.0000
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.284 1	4,089.284 1	1.1121		4,112.637 4
Total	4.2876	45.6559	35.0303	0.0399	0.1246	2.2921	2.4167	0.0189	2.1365	2.1554		4,089.284 1	4,089.284 1	1.1121		4,112.637 4

3.2 Demolition - 2016**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	0.0123	0.1752	0.1250	4.7000e-004	0.0109	2.3900e-003	0.0133	2.9800e-003	2.2000e-003	5.1800e-003		47.1048	47.1048	3.4000e-004		47.1119
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	0.0614	0.0915	0.9929	2.4000e-003	0.1916	1.3700e-003	0.1930	0.0508	1.2600e-003	0.0521		200.6923	200.6923	9.8400e-003		200.8990
Total	0.0737	0.2667	1.1179	2.8700e-003	0.2025	3.7600e-003	0.2063	0.0538	3.4600e-003	0.0573		247.7971	247.7971	0.0102		248.0109

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					0.1246	0.0000	0.1246	0.0189	0.0000	0.0189			0.0000			0.0000
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.284 1	4,089.284 1	1.1121		4,112.637 4
Total	4.2876	45.6559	35.0303	0.0399	0.1246	2.2921	2.4167	0.0189	2.1365	2.1554	0.0000	4,089.284 1	4,089.284 1	1.1121		4,112.637 4

3.2 Demolition - 2016**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	0.0123	0.1752	0.1250	4.7000e-004	0.0109	2.3900e-003	0.0133	2.9800e-003	2.2000e-003	5.1800e-003		47.1048	47.1048	3.4000e-004		47.1119
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	0.0614	0.0915	0.9929	2.4000e-003	0.1916	1.3700e-003	0.1930	0.0508	1.2600e-003	0.0521		200.6923	200.6923	9.8400e-003		200.8990
Total	0.0737	0.2667	1.1179	2.8700e-003	0.2025	3.7600e-003	0.2063	0.0538	3.4600e-003	0.0573		247.7971	247.7971	0.0102		248.0109

3.3 Grading - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.8436	0.0000	6.8436	3.3989	0.0000	3.3989			0.0000			0.0000
Off-Road	8.5573	99.2779	62.1827	0.0825		4.6723	4.6723		4.2985	4.2985		8,573.6848	8,573.6848	2.5861		8,627.9934
Total	8.5573	99.2779	62.1827	0.0825	6.8436	4.6723	11.5159	3.3989	4.2985	7.6974		8,573.6848	8,573.6848	2.5861		8,627.9934

3.3 Grading - 2016**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	0.1024	0.1526	1.6548	4.0100e-003	0.3193	2.2900e-003	0.3216	0.0847	2.1000e-003	0.0868		334.4872	334.4872	0.0164		334.8317
Total	0.1024	0.1526	1.6548	4.0100e-003	0.3193	2.2900e-003	0.3216	0.0847	2.1000e-003	0.0868		334.4872	334.4872	0.0164		334.8317

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					6.8436	0.0000	6.8436	3.3989	0.0000	3.3989			0.0000			0.0000
Off-Road	8.5573	99.2779	62.1827	0.0825		4.6723	4.6723		4.2985	4.2985	0.0000	8,573.6848	8,573.6848	2.5861		8,627.9934
Total	8.5573	99.2779	62.1827	0.0825	6.8436	4.6723	11.5159	3.3989	4.2985	7.6974	0.0000	8,573.6848	8,573.6848	2.5861		8,627.9934

3.3 Grading - 2016**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	0.1024	0.1526	1.6548	4.0100e-003	0.3193	2.2900e-003	0.3216	0.0847	2.1000e-003	0.0868		334.4872	334.4872	0.0164		334.8317
Total	0.1024	0.1526	1.6548	4.0100e-003	0.3193	2.2900e-003	0.3216	0.0847	2.1000e-003	0.0868		334.4872	334.4872	0.0164		334.8317

3.4 Trenching - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7405	19.8340	11.9336	0.0207		0.9968	0.9968		0.9170	0.9170		2,147.6674	2,147.6674	0.6478		2,161.2715
Total	1.7405	19.8340	11.9336	0.0207		0.9968	0.9968		0.9170	0.9170		2,147.6674	2,147.6674	0.6478		2,161.2715

3.4 Trenching - 2016**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	0.0410	0.0610	0.6619	1.6000e-003	0.1277	9.2000e-004	0.1287	0.0339	8.4000e-004	0.0347		133.7949	133.7949	6.5600e-003		133.9327
Total	0.0410	0.0610	0.6619	1.6000e-003	0.1277	9.2000e-004	0.1287	0.0339	8.4000e-004	0.0347		133.7949	133.7949	6.5600e-003		133.9327

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7405	19.8340	11.9336	0.0207		0.9968	0.9968		0.9170	0.9170	0.0000	2,147.6674	2,147.6674	0.6478		2,161.2715
Total	1.7405	19.8340	11.9336	0.0207		0.9968	0.9968		0.9170	0.9170	0.0000	2,147.6674	2,147.6674	0.6478		2,161.2715

3.4 Trenching - 2016**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	0.0410	0.0610	0.6619	1.6000e-003	0.1277	9.2000e-004	0.1287	0.0339	8.4000e-004	0.0347		133.7949	133.7949	6.5600e-003		133.9327
Total	0.0410	0.0610	0.6619	1.6000e-003	0.1277	9.2000e-004	0.1287	0.0339	8.4000e-004	0.0347		133.7949	133.7949	6.5600e-003		133.9327

3.4 Trenching - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6282	18.2456	11.7763	0.0207		0.9081	0.9081		0.8355	0.8355		2,113.6861	2,113.6861	0.6476		2,127.2864
Total	1.6282	18.2456	11.7763	0.0207		0.9081	0.9081		0.8355	0.8355		2,113.6861	2,113.6861	0.6476		2,127.2864

3.4 Trenching - 2017**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	0.0369	0.0555	0.5985	1.6000e-003	0.1277	8.9000e-004	0.1286	0.0339	8.2000e-004	0.0347		128.6303	128.6303	6.0800e-003		128.7580
Total	0.0369	0.0555	0.5985	1.6000e-003	0.1277	8.9000e-004	0.1286	0.0339	8.2000e-004	0.0347		128.6303	128.6303	6.0800e-003		128.7580

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6282	18.2456	11.7763	0.0207		0.9081	0.9081		0.8355	0.8355	0.0000	2,113.6861	2,113.6861	0.6476		2,127.2864
Total	1.6282	18.2456	11.7763	0.0207		0.9081	0.9081		0.8355	0.8355	0.0000	2,113.6861	2,113.6861	0.6476		2,127.2864

3.4 Trenching - 2017**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	0.0369	0.0555	0.5985	1.6000e-003	0.1277	8.9000e-004	0.1286	0.0339	8.2000e-004	0.0347		128.6303	128.6303	6.0800e-003		128.7580
Total	0.0369	0.0555	0.5985	1.6000e-003	0.1277	8.9000e-004	0.1286	0.0339	8.2000e-004	0.0347		128.6303	128.6303	6.0800e-003		128.7580

3.5 Paving - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

3.5 Paving - 2017**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	0.0554	0.0832	0.8977	2.4000e-003	0.1916	1.3300e-003	0.1929	0.0508	1.2200e-003	0.0520		192.9455	192.9455	9.1200e-003		193.1370
Total	0.0554	0.0832	0.8977	2.4000e-003	0.1916	1.3300e-003	0.1929	0.0508	1.2200e-003	0.0520		192.9455	192.9455	9.1200e-003		193.1370

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360

3.5 Paving - 2017**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	0.0554	0.0832	0.8977	2.4000e-003	0.1916	1.3300e-003	0.1929	0.0508	1.2200e-003	0.0520		192.9455	192.9455	9.1200e-003		193.1370
Total	0.0554	0.0832	0.8977	2.4000e-003	0.1916	1.3300e-003	0.1929	0.0508	1.2200e-003	0.0520		192.9455	192.9455	9.1200e-003		193.1370

3.6 Building Construction - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490

3.6 Building Construction - 2017**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	0.0462	0.3927	0.5121	1.0800e-003	0.0300	5.6500e-003	0.0357	8.5700e-003	5.1900e-003	0.0138		106.8819	106.8819	8.0000e-004		106.8988
Worker	0.0591	0.0888	0.9576	2.5600e-003	0.2044	1.4200e-003	0.2058	0.0542	1.3100e-003	0.0555		205.8085	205.8085	9.7300e-003		206.0128
Total	0.1053	0.4814	1.4697	3.6400e-003	0.2344	7.0700e-003	0.2415	0.0628	6.5000e-003	0.0693		312.6904	312.6904	0.0105		312.9115

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490

3.6 Building Construction - 2017**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	0.0462	0.3927	0.5121	1.0800e-003	0.0300	5.6500e-003	0.0357	8.5700e-003	5.1900e-003	0.0138		106.8819	106.8819	8.0000e-004		106.8988
Worker	0.0591	0.0888	0.9576	2.5600e-003	0.2044	1.4200e-003	0.2058	0.0542	1.3100e-003	0.0555		205.8085	205.8085	9.7300e-003		206.0128
Total	0.1053	0.4814	1.4697	3.6400e-003	0.2344	7.0700e-003	0.2415	0.0628	6.5000e-003	0.0693		312.6904	312.6904	0.0105		312.9115

3.7 Architectural Coating - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.5486					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	26.8809	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

3.7 Architectural Coating - 2017**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	0.0111	0.0167	0.1796	4.8000e-004	0.0383	2.7000e-004	0.0386	0.0102	2.4000e-004	0.0104		38.5891	38.5891	1.8200e-003		38.6274
Total	0.0111	0.0167	0.1796	4.8000e-004	0.0383	2.7000e-004	0.0386	0.0102	2.4000e-004	0.0104		38.5891	38.5891	1.8200e-003		38.6274

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	26.5486					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	26.8809	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721

3.7 Architectural Coating - 2017

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	0.0111	0.0167	0.1796	4.8000e-004	0.0383	2.7000e-004	0.0386	0.0102	2.4000e-004	0.0104		38.5891	38.5891	1.8200e-003		38.6274
Total	0.0111	0.0167	0.1796	4.8000e-004	0.0383	2.7000e-004	0.0386	0.0102	2.4000e-004	0.0104		38.5891	38.5891	1.8200e-003		38.6274

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9435	4.9049	22.3255	0.0609	4.1343	0.0704	4.2048	1.1036	0.0649	1.1686		4,974.887 2	4,974.887 2	0.1890		4,978.855 5
Unmitigated	1.9435	4.9049	22.3255	0.0609	4.1343	0.0704	4.2048	1.1036	0.0649	1.1686		4,974.887 2	4,974.887 2	0.1890		4,978.855 5

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	528.00	528.00	528.00	1,953,949	1,953,949
Total	528.00	528.00	528.00	1,953,949	1,953,949

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	16.80	7.10	7.90	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	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	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716
NaturalGas Unmitigated	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716

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	3333.57	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716
Total		0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716

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	3.33357	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716
Total		0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716

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	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.9562	519.0069	1,740.9630	1.1341	0.0961	1,794.5760
Unmitigated	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.9562	519.0069	1,740.9630	1.1341	0.0961	1,794.5760

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	0.4073					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	67.3374	0.9136	82.9524	0.0324		11.6543	11.6543		11.6540	11.6540	1,221.956 2	512.4706	1,734.426 7	1.1277	0.0961	1,787.903 6
Landscaping	0.1127	0.0424	3.6557	1.9000e- 004		0.0200	0.0200		0.0200	0.0200		6.5363	6.5363	6.4800e- 003		6.6723
Total	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.956 2	519.0069	1,740.963 0	1.1341	0.0961	1,794.576 0

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	0.4073					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	67.3374	0.9136	82.9524	0.0324		11.6543	11.6543		11.6540	11.6540	1,221.956 2	512.4706	1,734.426 7	1.1277	0.0961	1,787.903 6
Landscaping	0.1127	0.0424	3.6557	1.9000e-004		0.0200	0.0200		0.0200	0.0200		6.5363	6.5363	6.4800e-003		6.6723
Total	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.956 2	519.0069	1,740.963 0	1.1341	0.0961	1,794.576 0

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

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 Vegetation

Shadow Run (2018)
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	44.00	Dwelling Unit	110.00	79,200.00	126

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
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

Project Characteristics -

Land Use - 110 Acres will be graded

Construction Phase - Proposed Construction Duration

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Off-Highway Truck was used as a water truck

Off-road Equipment - Proposed Trenching Equipment

Trips and VMT -

Demolition -

Grading - Project would only grade 110 acres

Vehicle Trips - Trip Generation Estimated at 12 Trips per day per dwelling unit

Mobile Land Use Mitigation -

Energy Mitigation - 13% of energy produced by offsite renewables...

Water Mitigation -

Waste Mitigation -

Area Coating - Emission Factor not to exceed 150 g/l

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250

tblConstructionPhase	NumDays	220.00	56.00
tblConstructionPhase	NumDays	3,100.00	121.00
tblConstructionPhase	NumDays	200.00	8.00
tblConstructionPhase	NumDays	310.00	142.00
tblConstructionPhase	NumDays	220.00	19.00
tblConstructionPhase	PhaseEndDate	10/17/2017	7/31/2017
tblConstructionPhase	PhaseStartDate	8/1/2017	5/15/2017
tblGrading	AcresOfGrading	497.00	110.00
tblLandUse	LotAcreage	14.29	110.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	HorsePower	87.00	238.00
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	ST_TR	10.08	12.00
tblVehicleTrips	SU_TR	8.77	12.00
tblVehicleTrips	WD_TR	9.57	12.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	8.6642	99.4490	63.7523	0.0862	7.1629	4.6746	11.8375	3.4836	4.3006	7.7842	0.0000	8,887.6824	8,887.6824	2.6025	0.0000	8,942.3356
2017	30.1099	29.1105	21.7688	0.0337	0.2727	1.9619	2.2347	0.0729	1.8531	1.9260	0.0000	3,256.6454	3,256.6454	0.7080	0.0000	3,271.5141
Total	38.7741	128.5596	85.5212	0.1200	7.4356	6.6365	14.0722	3.5565	6.1537	9.7103	0.0000	12,144.3278	12,144.3278	3.3106	0.0000	12,213.8497

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	8.6642	99.4490	63.7523	0.0862	7.1629	4.6746	11.8375	3.4836	4.3006	7.7842	0.0000	8,887.6824	8,887.6824	2.6025	0.0000	8,942.3356
2017	30.1099	29.1105	21.7688	0.0337	0.2727	1.9619	2.2347	0.0729	1.8531	1.9260	0.0000	3,256.6454	3,256.6454	0.7080	0.0000	3,271.5141
Total	38.7741	128.5596	85.5212	0.1200	7.4356	6.6365	14.0722	3.5565	6.1537	9.7103	0.0000	12,144.3278	12,144.3278	3.3106	0.0000	12,213.8497

[illegible]

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	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.956 2	519.0069	1,740.963 0	1.1341	0.0961	1,794.576 0
Energy	0.0360	0.3072	0.1307	1.9600e- 003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e- 003	7.1900e- 003	394.5716
Mobile	2.0483	5.2151	22.8564	0.0579	4.1343	0.0707	4.2050	1.1036	0.0651	1.1687		4,735.307 5	4,735.307 5	0.1891		4,739.278 0
Total	71.6365	6.4784	109.5953	0.0924	4.1343	11.7698	15.9041	1.1036	11.7639	12.8675	1,221.956 2	5,646.499 2	6,868.455 4	1.3307	0.1033	6,928.425 7

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	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.956 2	519.0069	1,740.963 0	1.1341	0.0961	1,794.576 0
Energy	0.0360	0.3072	0.1307	1.9600e- 003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e- 003	7.1900e- 003	394.5716
Mobile	2.0483	5.2151	22.8564	0.0579	4.1343	0.0707	4.2050	1.1036	0.0651	1.1687		4,735.307 5	4,735.307 5	0.1891		4,739.278 0
Total	71.6365	6.4784	109.5953	0.0924	4.1343	11.7698	15.9041	1.1036	11.7639	12.8675	1,221.956 2	5,646.499 2	6,868.455 4	1.3307	0.1033	6,928.425 7

	ROG	NOx	CO	SO2	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/20/2016	5/31/2016	5	8	
2	Grading	Grading	6/1/2016	12/15/2016	5	142	
3	Trenching	Trenching	12/16/2016	1/16/2017	5	22	
4	Paving	Paving	1/17/2017	2/10/2017	5	19	
5	Building Construction	Building Construction	2/11/2017	7/31/2017	5	121	
6	Architectural Coating	Architectural Coating	5/15/2017	7/31/2017	5	56	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 110

Acres of Paving: 0

Residential Indoor: 160,380; Residential Outdoor: 53,460; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	189	0.50
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	3	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Excavators	2	8.00	162	0.38
Trenching	Other General Industrial Equipment	1	8.00	238	0.34
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	5.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	25.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	16.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1246	0.0000	0.1246	0.0189	0.0000	0.0189			0.0000			0.0000
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.284 1	4,089.284 1	1.1121		4,112.6374
Total	4.2876	45.6559	35.0303	0.0399	0.1246	2.2921	2.4167	0.0189	2.1365	2.1554		4,089.284 1	4,089.284 1	1.1121		4,112.637 4

3.2 Demolition - 2016**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	0.0136	0.1808	0.1615	4.7000e-004	0.0109	2.4000e-003	0.0133	2.9800e-003	2.2100e-003	5.1900e-003		46.9944	46.9944	3.4000e-004		47.0015
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	0.0642	0.1027	0.9418	2.2600e-003	0.1916	1.3700e-003	0.1930	0.0508	1.2600e-003	0.0521		188.3986	188.3986	9.8400e-003		188.6053
Total	0.0778	0.2835	1.1033	2.7300e-003	0.2025	3.7700e-003	0.2063	0.0538	3.4700e-003	0.0573		235.3930	235.3930	0.0102		235.6068

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					0.1246	0.0000	0.1246	0.0189	0.0000	0.0189			0.0000			0.0000
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.284 1	4,089.284 1	1.1121		4,112.6374
Total	4.2876	45.6559	35.0303	0.0399	0.1246	2.2921	2.4167	0.0189	2.1365	2.1554	0.0000	4,089.284 1	4,089.284 1	1.1121		4,112.637 4

3.2 Demolition - 2016**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	0.0136	0.1808	0.1615	4.7000e-004	0.0109	2.4000e-003	0.0133	2.9800e-003	2.2100e-003	5.1900e-003		46.9944	46.9944	3.4000e-004		47.0015
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	0.0642	0.1027	0.9418	2.2600e-003	0.1916	1.3700e-003	0.1930	0.0508	1.2600e-003	0.0521		188.3986	188.3986	9.8400e-003		188.6053
Total	0.0778	0.2835	1.1033	2.7300e-003	0.2025	3.7700e-003	0.2063	0.0538	3.4700e-003	0.0573		235.3930	235.3930	0.0102		235.6068

3.3 Grading - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.8436	0.0000	6.8436	3.3989	0.0000	3.3989			0.0000			0.0000
Off-Road	8.5573	99.2779	62.1827	0.0825		4.6723	4.6723		4.2985	4.2985		8,573.6848	8,573.6848	2.5861		8,627.9934
Total	8.5573	99.2779	62.1827	0.0825	6.8436	4.6723	11.5159	3.3989	4.2985	7.6974		8,573.6848	8,573.6848	2.5861		8,627.9934

3.3 Grading - 2016**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	0.1070	0.1712	1.5696	3.7600e-003	0.3193	2.2900e-003	0.3216	0.0847	2.1000e-003	0.0868		313.9976	313.9976	0.0164		314.3422
Total	0.1070	0.1712	1.5696	3.7600e-003	0.3193	2.2900e-003	0.3216	0.0847	2.1000e-003	0.0868		313.9976	313.9976	0.0164		314.3422

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					6.8436	0.0000	6.8436	3.3989	0.0000	3.3989			0.0000			0.0000
Off-Road	8.5573	99.2779	62.1827	0.0825		4.6723	4.6723		4.2985	4.2985	0.0000	8,573.6848	8,573.6848	2.5861		8,627.9934
Total	8.5573	99.2779	62.1827	0.0825	6.8436	4.6723	11.5159	3.3989	4.2985	7.6974	0.0000	8,573.6848	8,573.6848	2.5861		8,627.9934

3.3 Grading - 2016**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	0.1070	0.1712	1.5696	3.7600e-003	0.3193	2.2900e-003	0.3216	0.0847	2.1000e-003	0.0868		313.9976	313.9976	0.0164		314.3422
Total	0.1070	0.1712	1.5696	3.7600e-003	0.3193	2.2900e-003	0.3216	0.0847	2.1000e-003	0.0868		313.9976	313.9976	0.0164		314.3422

3.4 Trenching - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7405	19.8340	11.9336	0.0207		0.9968	0.9968		0.9170	0.9170		2,147.6674	2,147.6674	0.6478		2,161.2715
Total	1.7405	19.8340	11.9336	0.0207		0.9968	0.9968		0.9170	0.9170		2,147.6674	2,147.6674	0.6478		2,161.2715

3.4 Trenching - 2016**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	0.0428	0.0685	0.6278	1.5000e-003	0.1277	9.2000e-004	0.1287	0.0339	8.4000e-004	0.0347		125.5991	125.5991	6.5600e-003		125.7369
Total	0.0428	0.0685	0.6278	1.5000e-003	0.1277	9.2000e-004	0.1287	0.0339	8.4000e-004	0.0347		125.5991	125.5991	6.5600e-003		125.7369

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7405	19.8340	11.9336	0.0207		0.9968	0.9968		0.9170	0.9170	0.0000	2,147.6674	2,147.6674	0.6478		2,161.2715
Total	1.7405	19.8340	11.9336	0.0207		0.9968	0.9968		0.9170	0.9170	0.0000	2,147.6674	2,147.6674	0.6478		2,161.2715

3.4 Trenching - 2016**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	0.0428	0.0685	0.6278	1.5000e-003	0.1277	9.2000e-004	0.1287	0.0339	8.4000e-004	0.0347		125.5991	125.5991	6.5600e-003		125.7369
Total	0.0428	0.0685	0.6278	1.5000e-003	0.1277	9.2000e-004	0.1287	0.0339	8.4000e-004	0.0347		125.5991	125.5991	6.5600e-003		125.7369

3.4 Trenching - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6282	18.2456	11.7763	0.0207		0.9081	0.9081		0.8355	0.8355		2,113.6861	2,113.6861	0.6476		2,127.2864
Total	1.6282	18.2456	11.7763	0.0207		0.9081	0.9081		0.8355	0.8355		2,113.6861	2,113.6861	0.6476		2,127.2864

3.4 Trenching - 2017**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	0.0384	0.0623	0.5645	1.5000e-003	0.1277	8.9000e-004	0.1286	0.0339	8.2000e-004	0.0347		120.7433	120.7433	6.0800e-003		120.8709
Total	0.0384	0.0623	0.5645	1.5000e-003	0.1277	8.9000e-004	0.1286	0.0339	8.2000e-004	0.0347		120.7433	120.7433	6.0800e-003		120.8709

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6282	18.2456	11.7763	0.0207		0.9081	0.9081		0.8355	0.8355	0.0000	2,113.6861	2,113.6861	0.6476		2,127.2864
Total	1.6282	18.2456	11.7763	0.0207		0.9081	0.9081		0.8355	0.8355	0.0000	2,113.6861	2,113.6861	0.6476		2,127.2864

3.4 Trenching - 2017**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	0.0384	0.0623	0.5645	1.5000e-003	0.1277	8.9000e-004	0.1286	0.0339	8.2000e-004	0.0347		120.7433	120.7433	6.0800e-003		120.8709
Total	0.0384	0.0623	0.5645	1.5000e-003	0.1277	8.9000e-004	0.1286	0.0339	8.2000e-004	0.0347		120.7433	120.7433	6.0800e-003		120.8709

3.5 Paving - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360

3.5 Paving - 2017**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	0.0577	0.0934	0.8467	2.2600e-003	0.1916	1.3300e-003	0.1929	0.0508	1.2200e-003	0.0520		181.1149	181.1149	9.1200e-003		181.3064
Total	0.0577	0.0934	0.8467	2.2600e-003	0.1916	1.3300e-003	0.1929	0.0508	1.2200e-003	0.0520		181.1149	181.1149	9.1200e-003		181.3064

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360

3.5 Paving - 2017**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	0.0577	0.0934	0.8467	2.2600e-003	0.1916	1.3300e-003	0.1929	0.0508	1.2200e-003	0.0520		181.1149	181.1149	9.1200e-003		181.3064
Total	0.0577	0.0934	0.8467	2.2600e-003	0.1916	1.3300e-003	0.1929	0.0508	1.2200e-003	0.0520		181.1149	181.1149	9.1200e-003		181.3064

3.6 Building Construction - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490

3.6 Building Construction - 2017**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	0.0535	0.4016	0.6991	1.0800e-003	0.0300	5.7100e-003	0.0357	8.5700e-003	5.2500e-003	0.0138		105.9799	105.9799	8.3000e-004		105.9973
Worker	0.0615	0.0996	0.9032	2.4100e-003	0.2044	1.4200e-003	0.2058	0.0542	1.3100e-003	0.0555		193.1892	193.1892	9.7300e-003		193.3934
Total	0.1150	0.5012	1.6023	3.4900e-003	0.2344	7.1300e-003	0.2415	0.0628	6.5600e-003	0.0693		299.1691	299.1691	0.0106		299.3907

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490

3.6 Building Construction - 2017**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	0.0535	0.4016	0.6991	1.0800e-003	0.0300	5.7100e-003	0.0357	8.5700e-003	5.2500e-003	0.0138		105.9799	105.9799	8.3000e-004		105.9973
Worker	0.0615	0.0996	0.9032	2.4100e-003	0.2044	1.4200e-003	0.2058	0.0542	1.3100e-003	0.0555		193.1892	193.1892	9.7300e-003		193.3934
Total	0.1150	0.5012	1.6023	3.4900e-003	0.2344	7.1300e-003	0.2415	0.0628	6.5600e-003	0.0693		299.1691	299.1691	0.0106		299.3907

3.7 Architectural Coating - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.5486					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	26.8809	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721

3.7 Architectural Coating - 2017**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	0.0115	0.0187	0.1694	4.5000e-004	0.0383	2.7000e-004	0.0386	0.0102	2.4000e-004	0.0104		36.2230	36.2230	1.8200e-003		36.2613
Total	0.0115	0.0187	0.1694	4.5000e-004	0.0383	2.7000e-004	0.0386	0.0102	2.4000e-004	0.0104		36.2230	36.2230	1.8200e-003		36.2613

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	26.5486					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	26.8809	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721

3.7 Architectural Coating - 2017

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	0.0115	0.0187	0.1694	4.5000e-004	0.0383	2.7000e-004	0.0386	0.0102	2.4000e-004	0.0104		36.2230	36.2230	1.8200e-003		36.2613
Total	0.0115	0.0187	0.1694	4.5000e-004	0.0383	2.7000e-004	0.0386	0.0102	2.4000e-004	0.0104		36.2230	36.2230	1.8200e-003		36.2613

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0483	5.2151	22.8564	0.0579	4.1343	0.0707	4.2050	1.1036	0.0651	1.1687		4,735.3075	4,735.3075	0.1891		4,739.2780
Unmitigated	2.0483	5.2151	22.8564	0.0579	4.1343	0.0707	4.2050	1.1036	0.0651	1.1687		4,735.3075	4,735.3075	0.1891		4,739.2780

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	528.00	528.00	528.00	1,953,949	1,953,949
Total	528.00	528.00	528.00	1,953,949	1,953,949

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	16.80	7.10	7.90	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	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	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716
NaturalGas Unmitigated	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716

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	3333.57	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716
Total		0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716

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	3.33357	0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716
Total		0.0360	0.3072	0.1307	1.9600e-003		0.0248	0.0248		0.0248	0.0248		392.1849	392.1849	7.5200e-003	7.1900e-003	394.5716

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	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.9562	519.0069	1,740.9630	1.1341	0.0961	1,794.5760
Unmitigated	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.9562	519.0069	1,740.9630	1.1341	0.0961	1,794.5760

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	0.4073					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	67.3374	0.9136	82.9524	0.0324		11.6543	11.6543		11.6540	11.6540	1,221.956 2	512.4706	1,734.426 7	1.1277	0.0961	1,787.903 6
Landscaping	0.1127	0.0424	3.6557	1.9000e- 004		0.0200	0.0200		0.0200	0.0200		6.5363	6.5363	6.4800e- 003		6.6723
Total	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.956 2	519.0069	1,740.963 0	1.1341	0.0961	1,794.576 0

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	0.4073					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	67.3374	0.9136	82.9524	0.0324		11.6543	11.6543		11.6540	11.6540	1,221.956 2	512.4706	1,734.426 7	1.1277	0.0961	1,787.903 6
Landscaping	0.1127	0.0424	3.6557	1.9000e-004		0.0200	0.0200		0.0200	0.0200		6.5363	6.5363	6.4800e-003		6.6723
Total	69.5523	0.9560	86.6082	0.0326		11.6743	11.6743		11.6739	11.6739	1,221.956 2	519.0069	1,740.963 0	1.1341	0.0961	1,794.576 0

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

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 Vegetation

Shadow Run (2018)
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	44.00	Dwelling Unit	110.00	79,200.00	126

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2018
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

Project Characteristics -

Land Use - 110 Acres will be graded

Construction Phase - Proposed Construction Duration

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Off-Highway Truck was used as a water truck

Off-road Equipment - Proposed Trenching Equipment

Trips and VMT -

Demolition -

Grading - Project would only grade 110 acres

Vehicle Trips - Trip Generation Estimated at 12 Trips per day per dwelling unit

Mobile Land Use Mitigation -

Energy Mitigation - 13% of energy produced by offsite renewables...

Water Mitigation -

Waste Mitigation -

Area Coating - Emission Factor not to exceed 150 g/l

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250

tblConstructionPhase	NumDays	220.00	56.00
tblConstructionPhase	NumDays	3,100.00	121.00
tblConstructionPhase	NumDays	200.00	8.00
tblConstructionPhase	NumDays	310.00	142.00
tblConstructionPhase	NumDays	220.00	19.00
tblConstructionPhase	PhaseEndDate	10/17/2017	7/31/2017
tblConstructionPhase	PhaseStartDate	8/1/2017	5/15/2017
tblGrading	AcresOfGrading	497.00	110.00
tblLandUse	LotAcreage	14.29	110.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	HorsePower	87.00	238.00
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	ST_TR	10.08	12.00
tblVehicleTrips	SU_TR	8.77	12.00
tblVehicleTrips	WD_TR	9.57	12.00

2.0 Emissions Summary

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					
2016	0.6419	7.3539	4.7399	6.4200e-003	0.5100	0.3466	0.8566	0.2477	0.3190	0.5666	0.0000	599.7078	599.7078	0.1750	0.0000	603.3821
2017	0.9750	1.9840	1.4629	2.2900e-003	0.0174	0.1289	0.1462	4.6500e-003	0.1210	0.1257	0.0000	201.9079	201.9079	0.0464	0.0000	202.8823
Total	1.6169	9.3379	6.2029	8.7100e-003	0.5274	0.4755	1.0028	0.2523	0.4400	0.6923	0.0000	801.6157	801.6157	0.2214	0.0000	806.2644

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					
2016	0.6419	7.3539	4.7399	6.4200e-003	0.5100	0.3466	0.8566	0.2477	0.3190	0.5666	0.0000	599.7071	599.7071	0.1750	0.0000	603.3814
2017	0.9750	1.9840	1.4629	2.2900e-003	0.0174	0.1289	0.1462	4.6500e-003	0.1210	0.1257	0.0000	201.9077	201.9077	0.0464	0.0000	202.8821
Total	1.6169	9.3379	6.2029	8.7100e-003	0.5274	0.4755	1.0028	0.2523	0.4400	0.6923	0.0000	801.6148	801.6148	0.2214	0.0000	806.2635

[illegible]

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	3.1546	0.0413	3.7301	1.3500e-003		0.4796	0.4796		0.4796	0.4796	45.4501	19.5948	65.0449	0.0425	3.5700e-003	67.0451
Energy	6.5600e-003	0.0561	0.0239	3.6000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	167.3747	167.3747	5.3700e-003	2.0400e-003	168.1209
Mobile	0.3523	0.9452	4.0729	0.0106	0.7348	0.0128	0.7476	0.1965	0.0118	0.2083	0.0000	787.2034	787.2034	0.0312	0.0000	787.8580
Waste						0.0000	0.0000		0.0000	0.0000	10.4865	0.0000	10.4865	0.6197	0.0000	23.5010
Water						0.0000	0.0000		0.0000	0.0000	0.9095	18.7613	19.6708	0.0942	2.3600e-003	22.3806
Total	3.5135	1.0425	7.8268	0.0123	0.7348	0.4970	1.2317	0.1965	0.4960	0.6925	56.8462	992.9342	1,049.7803	0.7929	7.9700e-003	1,068.9055

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	3.1546	0.0413	3.7301	1.3500e-003		0.4796	0.4796		0.4796	0.4796	45.4501	19.5948	65.0449	0.0425	3.5700e-003	67.0451
Energy	6.5600e-003	0.0561	0.0239	3.6000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	167.2422	167.2422	5.3600e-003	2.0400e-003	167.9879
Mobile	0.3523	0.9452	4.0729	0.0106	0.7348	0.0128	0.7476	0.1965	0.0118	0.2083	0.0000	787.2034	787.2034	0.0312	0.0000	787.8580
Waste						0.0000	0.0000		0.0000	0.0000	10.4865	0.0000	10.4865	0.6197	0.0000	23.5010
Water						0.0000	0.0000		0.0000	0.0000	0.7276	16.3215	17.0491	0.0754	1.9000e-003	19.2202
Total	3.5135	1.0425	7.8268	0.0123	0.7348	0.4970	1.2317	0.1965	0.4960	0.6925	56.6643	990.3619	1,047.0261	0.7741	7.5100e-003	1,065.6122

	ROG	NOx	CO	SO2	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	0.32	0.26	0.26	2.37	5.77	0.31

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/20/2016	5/31/2016	5	8	
2	Grading	Grading	6/1/2016	12/15/2016	5	142	
3	Trenching	Trenching	12/16/2016	1/16/2017	5	22	
4	Paving	Paving	1/17/2017	2/10/2017	5	19	
5	Building Construction	Building Construction	2/11/2017	7/31/2017	5	121	
6	Architectural Coating	Architectural Coating	5/15/2017	7/31/2017	5	56	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 110

Acres of Paving: 0

Residential Indoor: 160,380; Residential Outdoor: 53,460; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	189	0.50
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	3	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Excavators	2	8.00	162	0.38
Trenching	Other General Industrial Equipment	1	8.00	238	0.34
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	5.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	25.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	16.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0000e-004	0.0000	5.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0172	0.1826	0.1401	1.6000e-004		9.1700e-003	9.1700e-003		8.5500e-003	8.5500e-003	0.0000	14.8389	14.8389	4.0400e-003	0.0000	14.9237
Total	0.0172	0.1826	0.1401	1.6000e-004	5.0000e-004	9.1700e-003	9.6700e-003	8.0000e-005	8.5500e-003	8.6300e-003	0.0000	14.8389	14.8389	4.0400e-003	0.0000	14.9237

3.2 Demolition - 2016**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	5.0000e-005	7.3000e-004	6.0000e-004	0.0000	4.0000e-005	1.0000e-005	5.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1708	0.1708	0.0000	0.0000	0.1708
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	2.4000e-004	4.0000e-004	3.7700e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.5000e-004	2.0000e-004	1.0000e-005	2.0000e-004	0.0000	0.6905	0.6905	4.0000e-005	0.0000	0.6912
Total	2.9000e-004	1.1300e-003	4.3700e-003	1.0000e-005	7.9000e-004	2.0000e-005	8.0000e-004	2.1000e-004	2.0000e-005	2.2000e-004	0.0000	0.8612	0.8612	4.0000e-005	0.0000	0.8620

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					5.0000e-004	0.0000	5.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0172	0.1826	0.1401	1.6000e-004		9.1700e-003	9.1700e-003		8.5500e-003	8.5500e-003	0.0000	14.8389	14.8389	4.0400e-003	0.0000	14.9237
Total	0.0172	0.1826	0.1401	1.6000e-004	5.0000e-004	9.1700e-003	9.6700e-003	8.0000e-005	8.5500e-003	8.6300e-003	0.0000	14.8389	14.8389	4.0400e-003	0.0000	14.9237

3.2 Demolition - 2016**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	5.0000e-005	7.3000e-004	6.0000e-004	0.0000	4.0000e-005	1.0000e-005	5.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1708	0.1708	0.0000	0.0000	0.1708
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	2.4000e-004	4.0000e-004	3.7700e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.5000e-004	2.0000e-004	1.0000e-005	2.0000e-004	0.0000	0.6905	0.6905	4.0000e-005	0.0000	0.6912
Total	2.9000e-004	1.1300e-003	4.3700e-003	1.0000e-005	7.9000e-004	2.0000e-005	8.0000e-004	2.1000e-004	2.0000e-005	2.2000e-004	0.0000	0.8612	0.8612	4.0000e-005	0.0000	0.8620

3.3 Grading - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4859	0.0000	0.4859	0.2413	0.0000	0.2413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6076	7.0487	4.4150	5.8600e-003		0.3317	0.3317		0.3052	0.3052	0.0000	552.2320	552.2320	0.1666	0.0000	555.7301
Total	0.6076	7.0487	4.4150	5.8600e-003	0.4859	0.3317	0.8176	0.2413	0.3052	0.5465	0.0000	552.2320	552.2320	0.1666	0.0000	555.7301

3.3 Grading - 2016**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	7.1100e-003	0.0120	0.1114	2.7000e-004	0.0221	1.6000e-004	0.0223	5.8800e-003	1.5000e-004	6.0300e-003	0.0000	20.4268	20.4268	1.0600e-003	0.0000	20.4490
Total	7.1100e-003	0.0120	0.1114	2.7000e-004	0.0221	1.6000e-004	0.0223	5.8800e-003	1.5000e-004	6.0300e-003	0.0000	20.4268	20.4268	1.0600e-003	0.0000	20.4490

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					0.4859	0.0000	0.4859	0.2413	0.0000	0.2413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6076	7.0487	4.4150	5.8600e-003		0.3317	0.3317		0.3052	0.3052	0.0000	552.2314	552.2314	0.1666	0.0000	555.7294
Total	0.6076	7.0487	4.4150	5.8600e-003	0.4859	0.3317	0.8176	0.2413	0.3052	0.5465	0.0000	552.2314	552.2314	0.1666	0.0000	555.7294

3.3 Grading - 2016**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	7.1100e-003	0.0120	0.1114	2.7000e-004	0.0221	1.6000e-004	0.0223	5.8800e-003	1.5000e-004	6.0300e-003	0.0000	20.4268	20.4268	1.0600e-003	0.0000	20.4490
Total	7.1100e-003	0.0120	0.1114	2.7000e-004	0.0221	1.6000e-004	0.0223	5.8800e-003	1.5000e-004	6.0300e-003	0.0000	20.4268	20.4268	1.0600e-003	0.0000	20.4490

3.4 Trenching - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5700e-003	0.1091	0.0656	1.1000e-004		5.4800e-003	5.4800e-003		5.0400e-003	5.0400e-003	0.0000	10.7158	10.7158	3.2300e-003	0.0000	10.7837
Total	9.5700e-003	0.1091	0.0656	1.1000e-004		5.4800e-003	5.4800e-003		5.0400e-003	5.0400e-003	0.0000	10.7158	10.7158	3.2300e-003	0.0000	10.7837

3.4 Trenching - 2016**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	3.7000e-004	3.4500e-003	1.0000e-005	6.9000e-004	1.0000e-005	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6329	0.6329	3.0000e-005	0.0000	0.6336
Total	2.2000e-004	3.7000e-004	3.4500e-003	1.0000e-005	6.9000e-004	1.0000e-005	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6329	0.6329	3.0000e-005	0.0000	0.6336

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	9.5700e-003	0.1091	0.0656	1.1000e-004		5.4800e-003	5.4800e-003		5.0400e-003	5.0400e-003	0.0000	10.7158	10.7158	3.2300e-003	0.0000	10.7837
Total	9.5700e-003	0.1091	0.0656	1.1000e-004		5.4800e-003	5.4800e-003		5.0400e-003	5.0400e-003	0.0000	10.7158	10.7158	3.2300e-003	0.0000	10.7837

3.4 Trenching - 2016**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	3.7000e-004	3.4500e-003	1.0000e-005	6.9000e-004	1.0000e-005	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6329	0.6329	3.0000e-005	0.0000	0.6336
Total	2.2000e-004	3.7000e-004	3.4500e-003	1.0000e-005	6.9000e-004	1.0000e-005	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6329	0.6329	3.0000e-005	0.0000	0.6336

3.4 Trenching - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.9500e-003	0.1004	0.0648	1.1000e-004		4.9900e-003	4.9900e-003		4.6000e-003	4.6000e-003	0.0000	10.5463	10.5463	3.2300e-003	0.0000	10.6141
Total	8.9500e-003	0.1004	0.0648	1.1000e-004		4.9900e-003	4.9900e-003		4.6000e-003	4.6000e-003	0.0000	10.5463	10.5463	3.2300e-003	0.0000	10.6141

3.4 Trenching - 2017**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	2.0000e-004	3.4000e-004	3.1100e-003	1.0000e-005	6.9000e-004	0.0000	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6085	0.6085	3.0000e-005	0.0000	0.6091
Total	2.0000e-004	3.4000e-004	3.1100e-003	1.0000e-005	6.9000e-004	0.0000	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6085	0.6085	3.0000e-005	0.0000	0.6091

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	8.9500e-003	0.1004	0.0648	1.1000e-004		4.9900e-003	4.9900e-003		4.6000e-003	4.6000e-003	0.0000	10.5463	10.5463	3.2300e-003	0.0000	10.6141
Total	8.9500e-003	0.1004	0.0648	1.1000e-004		4.9900e-003	4.9900e-003		4.6000e-003	4.6000e-003	0.0000	10.5463	10.5463	3.2300e-003	0.0000	10.6141

3.4 Trenching - 2017**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	2.0000e-004	3.4000e-004	3.1100e-003	1.0000e-005	6.9000e-004	0.0000	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6085	0.6085	3.0000e-005	0.0000	0.6091
Total	2.0000e-004	3.4000e-004	3.1100e-003	1.0000e-005	6.9000e-004	0.0000	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6085	0.6085	3.0000e-005	0.0000	0.6091

3.5 Paving - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0181	0.1928	0.1399	2.1000e-004		0.0108	0.0108		9.9500e-003	9.9500e-003	0.0000	19.6588	19.6588	6.0200e-003	0.0000	19.7852
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0181	0.1928	0.1399	2.1000e-004		0.0108	0.0108		9.9500e-003	9.9500e-003	0.0000	19.6588	19.6588	6.0200e-003	0.0000	19.7852

3.5 Paving - 2017**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	5.1000e-004	8.7000e-004	8.0500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5765	1.5765	8.0000e-005	0.0000	1.5782
Total	5.1000e-004	8.7000e-004	8.0500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5765	1.5765	8.0000e-005	0.0000	1.5782

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	0.0181	0.1928	0.1399	2.1000e-004		0.0108	0.0108		9.9500e-003	9.9500e-003	0.0000	19.6587	19.6587	6.0200e-003	0.0000	19.7852
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0181	0.1928	0.1399	2.1000e-004		0.0108	0.0108		9.9500e-003	9.9500e-003	0.0000	19.6587	19.6587	6.0200e-003	0.0000	19.7852

3.5 Paving - 2017**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	5.1000e-004	8.7000e-004	8.0500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5765	1.5765	8.0000e-005	0.0000	1.5782
Total	5.1000e-004	8.7000e-004	8.0500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5765	1.5765	8.0000e-005	0.0000	1.5782

3.6 Building Construction - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1877	1.5975	1.0968	1.6200e-003		0.1078	0.1078		0.1012	0.1012	0.0000	144.8849	144.8849	0.0357	0.0000	145.6337
Total	0.1877	1.5975	1.0968	1.6200e-003		0.1078	0.1078		0.1012	0.1012	0.0000	144.8849	144.8849	0.0357	0.0000	145.6337

3.6 Building Construction - 2017

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	3.0500e-003	0.0245	0.0385	7.0000e-005	1.7800e-003	3.4000e-004	2.1200e-003	5.1000e-004	3.2000e-004	8.3000e-004	0.0000	5.8454	5.8454	4.0000e-005	0.0000	5.8463
Worker	3.4800e-003	5.9300e-003	0.0547	1.5000e-004	0.0121	9.0000e-005	0.0122	3.2100e-003	8.0000e-005	3.2900e-003	0.0000	10.7092	10.7092	5.3000e-004	0.0000	10.7204
Total	6.5300e-003	0.0304	0.0932	2.2000e-004	0.0139	4.3000e-004	0.0143	3.7200e-003	4.0000e-004	4.1200e-003	0.0000	16.5546	16.5546	5.7000e-004	0.0000	16.5668

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	0.1877	1.5975	1.0968	1.6200e-003		0.1078	0.1078		0.1012	0.1012	0.0000	144.8847	144.8847	0.0357	0.0000	145.6335
Total	0.1877	1.5975	1.0968	1.6200e-003		0.1078	0.1078		0.1012	0.1012	0.0000	144.8847	144.8847	0.0357	0.0000	145.6335

3.6 Building Construction - 2017

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	3.0500e-003	0.0245	0.0385	7.0000e-005	1.7800e-003	3.4000e-004	2.1200e-003	5.1000e-004	3.2000e-004	8.3000e-004	0.0000	5.8454	5.8454	4.0000e-005	0.0000	5.8463
Worker	3.4800e-003	5.9300e-003	0.0547	1.5000e-004	0.0121	9.0000e-005	0.0122	3.2100e-003	8.0000e-005	3.2900e-003	0.0000	10.7092	10.7092	5.3000e-004	0.0000	10.7204
Total	6.5300e-003	0.0304	0.0932	2.2000e-004	0.0139	4.3000e-004	0.0143	3.7200e-003	4.0000e-004	4.1200e-003	0.0000	16.5546	16.5546	5.7000e-004	0.0000	16.5668

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7434					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-003	0.0612	0.0523	8.0000e-005		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	7.1491	7.1491	7.5000e-004	0.0000	7.1650
Total	0.7527	0.0612	0.0523	8.0000e-005		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	7.1491	7.1491	7.5000e-004	0.0000	7.1650

3.7 Architectural Coating - 2017

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-004	5.2000e-004	4.7500e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9293	0.9293	5.0000e-005	0.0000	0.9303
Total	3.0000e-004	5.2000e-004	4.7500e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9293	0.9293	5.0000e-005	0.0000	0.9303

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	0.7434					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3000e-003	0.0612	0.0523	8.0000e-005		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	7.1491	7.1491	7.5000e-004	0.0000	7.1650
Total	0.7527	0.0612	0.0523	8.0000e-005		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	7.1491	7.1491	7.5000e-004	0.0000	7.1650

3.7 Architectural Coating - 2017

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-004	5.2000e-004	4.7500e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9293	0.9293	5.0000e-005	0.0000	0.9303
Total	3.0000e-004	5.2000e-004	4.7500e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9293	0.9293	5.0000e-005	0.0000	0.9303

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3523	0.9452	4.0729	0.0106	0.7348	0.0128	0.7476	0.1965	0.0118	0.2083	0.0000	787.2034	787.2034	0.0312	0.0000	787.8580
Unmitigated	0.3523	0.9452	4.0729	0.0106	0.7348	0.0128	0.7476	0.1965	0.0118	0.2083	0.0000	787.2034	787.2034	0.0312	0.0000	787.8580

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	528.00	528.00	528.00	1,953,949	1,953,949
Total	528.00	528.00	528.00	1,953,949	1,953,949

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	16.80	7.10	7.90	41.60	18.80	39.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511818	0.073499	0.191840	0.131575	0.036332	0.005186	0.012677	0.022513	0.001864	0.002072	0.006564	0.000601	0.003458

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	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	0.0000	102.3116	102.3116	4.1200e-003	8.5000e-004	102.6622
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	102.4441	102.4441	4.1200e-003	8.5000e-004	102.7951
NaturalGas Mitigated	6.5600e-003	0.0561	0.0239	3.6000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	64.9306	64.9306	1.2400e-003	1.1900e-003	65.3258
NaturalGas Unmitigated	6.5600e-003	0.0561	0.0239	3.6000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	64.9306	64.9306	1.2400e-003	1.1900e-003	65.3258

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	1.21675e+006	6.5600e-003	0.0561	0.0239	3.6000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	64.9306	64.9306	1.2400e-003	1.1900e-003	65.3258
Total		6.5600e-003	0.0561	0.0239	3.6000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	64.9306	64.9306	1.2400e-003	1.1900e-003	65.3258

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	1.21675e+006	6.5600e-003	0.0561	0.0239	3.6000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	64.9306	64.9306	1.2400e-003	1.1900e-003	65.3258
Total		6.5600e-003	0.0561	0.0239	3.6000e-004		4.5300e-003	4.5300e-003		4.5300e-003	4.5300e-003	0.0000	64.9306	64.9306	1.2400e-003	1.1900e-003	65.3258

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	313468	102.4441	4.1200e-003	8.5000e-004	102.7951
Total		102.4441	4.1200e-003	8.5000e-004	102.7951

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	313063	102.3116	4.1200e-003	8.5000e-004	102.6622
Total		102.3116	4.1200e-003	8.5000e-004	102.6622

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	3.1546	0.0413	3.7301	1.3500e-003		0.4796	0.4796		0.4796	0.4796	45.4501	19.5948	65.0449	0.0425	3.5700e-003	67.0451
Unmitigated	3.1546	0.0413	3.7301	1.3500e-003		0.4796	0.4796		0.4796	0.4796	45.4501	19.5948	65.0449	0.0425	3.5700e-003	67.0451

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	0.0743					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.7608	0.0375	3.4011	1.3300e-003		0.4778	0.4778		0.4778	0.4778	45.4501	19.0611	64.5113	0.0419	3.5700e-003	66.5003
Landscaping	0.0101	3.8200e-003	0.3290	2.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	0.5337	0.5337	5.3000e-004	0.0000	0.5448
Total	3.1546	0.0413	3.7301	1.3500e-003		0.4796	0.4796		0.4796	0.4796	45.4501	19.5948	65.0449	0.0425	3.5700e-003	67.0451

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	0.0743					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.7608	0.0375	3.4011	1.3300e-003		0.4778	0.4778		0.4778	0.4778	45.4501	19.0611	64.5113	0.0419	3.5700e-003	66.5003
Landscaping	0.0101	3.8200e-003	0.3290	2.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	0.5337	0.5337	5.3000e-004	0.0000	0.5448
Total	3.1546	0.0413	3.7301	1.3500e-003		0.4796	0.4796		0.4796	0.4796	45.4501	19.5948	65.0449	0.0425	3.5700e-003	67.0451

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.0491	0.0754	1.9000e-003	19.2202
Unmitigated	19.6708	0.0942	2.3600e-003	22.3806

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.86678 / 1.80732	19.6708	0.0942	2.3600e-003	22.3806
Total		19.6708	0.0942	2.3600e-003	22.3806

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.29342 / 1.80732	17.0491	0.0754	1.9000e-003	19.2202
Total		17.0491	0.0754	1.9000e-003	19.2202

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.4865	0.6197	0.0000	23.5010
Unmitigated	10.4865	0.6197	0.0000	23.5010

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	51.66	10.4865	0.6197	0.0000	23.5010
Total		10.4865	0.6197	0.0000	23.5010

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	51.66	10.4865	0.6197	0.0000	23.5010
Total		10.4865	0.6197	0.0000	23.5010

9.0 Operational Offroad

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

ATTACHMENT B

SCREEN3

SCREEN

03/16/15
10:59:52*** SCREEN3 MODEL RUN ***
*** VERSION DATED 13043 ***

Shadow Run Ranch

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	0.109000E-06
SOURCE HEIGHT (M)	=	3.0000
LENGTH OF LARGER SIDE (M)	=	667.1988
LENGTH OF SMALLER SIDE (M)	=	667.1988
RECEPTOR HEIGHT (M)	=	1.5000
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.

THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 0.000 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
10.	6.372	6	1.0	1.0	10000.0	3.00	44.
100.	7.263	6	1.0	1.0	10000.0	3.00	45.
200.	8.137	6	1.0	1.0	10000.0	3.00	45.
300.	8.911	6	1.0	1.0	10000.0	3.00	45.
400.	9.606	6	1.0	1.0	10000.0	3.00	45.
500.	9.953	6	1.0	1.0	10000.0	3.00	45.
600.	8.785	6	1.0	1.0	10000.0	3.00	45.
700.	7.678	6	1.0	1.0	10000.0	3.00	45.
800.	6.830	6	1.0	1.0	10000.0	3.00	45.
900.	6.181	6	1.0	1.0	10000.0	3.00	45.
1000.	5.669	6	1.0	1.0	10000.0	3.00	45.
1100.	5.262	6	1.0	1.0	10000.0	3.00	45.
1200.	4.927	6	1.0	1.0	10000.0	3.00	45.
1300.	4.642	6	1.0	1.0	10000.0	3.00	45.
1400.	4.396	6	1.0	1.0	10000.0	3.00	45.
1500.	4.181	6	1.0	1.0	10000.0	3.00	45.
1600.	3.989	6	1.0	1.0	10000.0	3.00	45.
1700.	3.817	6	1.0	1.0	10000.0	3.00	45.
1800.	3.662	6	1.0	1.0	10000.0	3.00	45.

SCREEN							
1900.	3.522	6	1.0	1.0	10000.0	3.00	45.
2000.	3.395	6	1.0	1.0	10000.0	3.00	45.
2100.	3.280	6	1.0	1.0	10000.0	3.00	45.
2200.	3.175	6	1.0	1.0	10000.0	3.00	45.
2300.	3.078	6	1.0	1.0	10000.0	3.00	45.
2400.	2.990	6	1.0	1.0	10000.0	3.00	45.
2500.	2.908	6	1.0	1.0	10000.0	3.00	45.
2600.	2.830	6	1.0	1.0	10000.0	3.00	45.
2700.	2.758	6	1.0	1.0	10000.0	3.00	45.
2800.	2.690	6	1.0	1.0	10000.0	3.00	45.
2900.	2.626	6	1.0	1.0	10000.0	3.00	45.
3000.	2.567	6	1.0	1.0	10000.0	3.00	45.
3500.	2.317	6	1.0	1.0	10000.0	3.00	45.
4000.	2.117	6	1.0	1.0	10000.0	3.00	45.
4500.	1.948	6	1.0	1.0	10000.0	3.00	45.
5000.	1.802	6	1.0	1.0	10000.0	3.00	45.
5500.	1.674	6	1.0	1.0	10000.0	3.00	45.
6000.	1.561	6	1.0	1.0	10000.0	3.00	45.
6500.	1.460	6	1.0	1.0	10000.0	3.00	45.
7000.	1.369	6	1.0	1.0	10000.0	3.00	44.
7500.	1.291	6	1.0	1.0	10000.0	3.00	45.
8000.	1.220	6	1.0	1.0	10000.0	3.00	45.
8500.	1.155	6	1.0	1.0	10000.0	3.00	44.
9000.	1.095	6	1.0	1.0	10000.0	3.00	45.
9500.	1.040	6	1.0	1.0	10000.0	3.00	45.
10000.	0.9895	6	1.0	1.0	10000.0	3.00	44.

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:
 498. 9.955 6 1.0 1.0 10000.0 3.00 45.

 *** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
180.	7.971	6	1.0	1.0	10000.0	3.00	45.

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	9.955	498.	0.

 ** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **