

*City of Malibu*

# Malibu Memorial Cemetery Project

## Air Quality Study



March 2016



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March 3, 2016  
Project No. 15-02065

Jake Jesson  
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Green Acres, LLC  
22837 Pacific Coast Highway #775  
Malibu, California 90265  
jjesson@weintraubre.com

**RE: AIR QUALITY STUDY  
Malibu Memorial Cemetery Project, Malibu, California**

Dear Mr. Jesson:

Rincon Consultants, Inc. is pleased to submit the attached Air Quality Study for the proposed Malibu Memorial Cemetery project in Malibu, California. Emissions that result from the construction of the proposed project would not exceed the recommended South Coast Air Quality Management District (SCAQMD) construction thresholds. The proposed project would not result in emissions would exceed the recommended SCAQMD operational thresholds for any criteria pollutant, or cumulative SCAQMD thresholds. As such, impacts related to air quality as a result of the proposed project would not be significant. If you have any questions regarding this study or if we can provide you with other environmental consulting services, please feel free to contact us.

Sincerely,

**RINCON CONSULTANTS, INC.**

A handwritten signature in black ink, appearing to read "Chris Bersbach", written over a light blue grid background.

Chris Bersbach  
Technical Services Program Supervisor

A handwritten signature in black ink, appearing to read "Joe Power", written over a light blue grid background.

Joe Power, AICP  
Principal

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## Air Quality Study

*Prepared for:*

**Green Acres, LLC**  
22837 Pacific Coast Highway, #775  
Malibu, California 90265

*Prepared with the assistance of:*

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# Malibu Memorial Cemetery Project Air Quality Study

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# MALIBU MEMORIAL CEMETERY PROJECT MALIBU, LOS ANGELES COUNTY AIR QUALITY STUDY

This report is an analysis of the potential air quality impacts of the proposed Malibu Memorial Cemetery project located in Malibu, California in Los Angeles County. The report has been prepared by Rincon Consultants, Inc. under contract to Green Acres, LLC for use by the City of Malibu, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the proposed project's air quality emissions and the associated impacts. This analysis considers both temporary the air quality impacts that would result from project construction and potential long-term air quality impacts associated with operation of the proposed project.

## PROJECT DESCRIPTION

Green Acres, LLC, is developing the Malibu Memorial Cemetery Park and Chapel Project, comprised of approximately 21.0 acres of a 28.7-acre property located east of Malibu Canyon Road, west of Civic Center Way, and north of Pacific Coast Highway in the City of Malibu, California (the "Project"). The unstable slope areas along the perimeter of the site comprise the remaining 7 acres of the parcel that Green Acres has elected not to develop. The proposed Memorial Park project contains approximately 17,500 GSF of FAR development and would include the construction of a 8,500 SF Main Chapel facility, 8,500 SF subterranean parking basement, 48 free-standing Mausoleum structures totaling approximately 9,000 SF (approximately 186 SF/each), approximately 30,600 plot spaces for various crypt configurations, cremation and fractional burial options, as well as surface unenclosed parking for guest vehicles along the entry drive and Chapel ring.

The original Project EIR was approved by the City of Malibu in 1998. To satisfy Mitigation Measure 8.1 of the Rancho Malibu Hotel Environmental Impact Report (City of Malibu 1997), a Cultural Resources Management Plan (CRMP) was developed to reduce potential impacts to an archaeological site located on the property (Wlodarski 1995). The revised CRMP was developed in response to three basic factors: 1) the need to incorporate burial crypts within areas of the site previously slated to be grubbed and capped; 2) changes in the condition of the site over the past 15 years since the plan was developed; and, 3) new grading of unstable slopes and required retaining walls on the site. The project was revised in October 2015 to exclude work in unstable slope areas, remove mounding within sensitive areas, and contain grading within the City-stipulated thresholds of 1,000 cubic yards per acre, reducing the overall project footprint to 21 acres.

## SETTING

### Current Air Quality

California's weather is heavily influenced by a semi-permanent high-pressure system west of the Pacific. The Mediterranean climate of the region and the coastal influence produce moderate temperatures year round, with rainfall concentrated in the winter months. The sea breeze,



which is the predominant wind, is a primary factor in creating this climate and typically flows from the west-southwest in a day-night cycle with speeds generally ranging from 5 to 15 miles per hour. The sea breeze maintains the cool temperatures and clean air circulation and generally prevents warmer inland temperatures and air pollution from permeating into the peninsula, except under certain seasonal conditions such as the offshore Santa Ana winds.

The City of Malibu is located within the South Coast Air Basin. The South Coast Air Basin's air quality is affected not only by the emission sources located in the region, but also to a large extent by three natural factors: terrain; a dominant on-shore flow; and atmospheric inversion. The first of these factors is a natural barrier to emission dispersion north and east of the metropolitan Los Angeles area. The dominant on-shore flow provides the driving mechanism for both air pollution transport and dispersion. Air pollution originating in the industrial areas along the coast and immediately inland is driven toward the natural terrain barrier, limiting horizontal dispersion. The effect of this second factor can be seen as a gradual degradation of air quality from coastal to inland areas. Malibu is typical of some of the South Coast Air Basin's best air quality areas because of its location along the coast upwind from most mobile and stationary sources. The greatest impacts can be seen in the San Gabriel Valley and near Riverside at the foot of the San Gabriel Mountains. The third factor affecting the regional air quality is atmospheric inversions, which limit dispersion of air pollution on a vertical scale. Inversions can be classified into one of two general categories: (1) inversion aloft or (2) surface based inversions. These two categories are the result of different meteorological conditions and tend to affect different sources. Inversions aloft are a critical factor in the degradation of regional air quality. The condition is defined by a vertical temperature profile, which initially conforms to standard conditions. For example, temperature typically decreases with height. However, under inversion conditions temperature begins to increase at some height above the ground. This height is called the base of the inversion. The temperature increase continues through an unspecified layer after which the temperature change with height returns to standard conditions. The inversion layer is typically very stable and acts as a cap to the vertical dispersions of pollutants.

## **Air Pollution Regulation**

Federal and state standards have been established for six criteria pollutants, including ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulates less than 10 and 2.5 microns in diameter (PM<sub>10</sub> and PM<sub>2.5</sub>), and lead (Pb). California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 1 lists the current federal and state standards for criteria pollutants.

Malibu is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD is required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in "attainment" or "non-attainment." The Basin, in which the project area is located, is a non-attainment area for both the federal and state standards for ozone and PM<sub>10</sub>. The Basin is in attainment for the state and federal standards for nitrogen dioxide, and for carbon monoxide. Characteristics of ozone, carbon monoxide, nitrogen dioxide, and suspended particulates are described below.





**Table 1  
 Current Federal and State Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Federal Standard</b>	<b>California Standard</b>
Ozone	0.075 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg) 0.100 ppm (1-hr avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.5 ppm (3-hr avg) 0.075 ppm (1-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	1.5 µg/m <sup>3</sup> (calendar quarter)	1.5 µg/m <sup>3</sup> (30-day avg)
Particulate Matter (PM <sub>10</sub> )	150 µg/m <sup>3</sup> (24-hr avg)	20 µg/m <sup>3</sup> (annual avg) 50 µg/m <sup>3</sup> (24-hr avg)
Particulate Matter (PM <sub>2.5</sub> )	15 µg/m <sup>3</sup> (annual avg) 35 µg/m <sup>3</sup> (24-hr avg)	12 µg/m <sup>3</sup> (annual avg)

*ppm= parts per million*

*µg/m<sup>3</sup> = micrograms per cubic meter*

*Source: California Air Resources Board, <http://www.arb.ca.gov/research/aags/aags2.pdf>, last updated October 17, 2015.*

Ozone. Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO<sub>x</sub>) and reactive organic gases (ROG). NO<sub>x</sub> is formed during the combustion of fuels, while reactive organic gases are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it mostly occurs in substantial concentrations between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide. CO is a local pollutant that is found in high concentrations only near a source of carbon monoxide. The major source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. CO's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulty in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Nitrogen Dioxide. NO<sub>2</sub> is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> commonly called NO<sub>x</sub>. Nitrogen dioxide is an acute irritant. A relationship between NO<sub>2</sub> and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. NO<sub>2</sub> absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM<sub>10</sub> and acid rain.



Suspended Particulates. Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are PM<sub>10</sub> (which measures no more than 10 microns in diameter) and PM<sub>2.5</sub>, (a fine particulate measuring no more than 2.5 microns in diameter). The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and PM<sub>2.5</sub> can be different. Major man-made sources of PM<sub>10</sub> are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include windblown dust, wildfire smoke, and sea spray salt. The finer, PM<sub>2.5</sub> particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. PM<sub>2.5</sub> is more likely to penetrate deeply into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

## **Local Air Quality**

The air quality monitoring station located nearest to the project site is the Veteran's Administration (VA) Hospital in West Los Angeles, approximately 14 miles east of the project site. However, this station does not monitor PM<sub>10</sub> or PM<sub>2.5</sub> emissions. Therefore, the West Palm Avenue monitoring station was also used, as shown in Table 2. Ambient air quality data obtained from these stations characterize the air quality representative of the ambient air quality in the project area.

Table 2 indicates the number of days that each of the standards has been exceeded at the closest monitoring station. As shown, the ozone concentration did not exceed state standards in 2012 or 2013 but did exceed the standard once in 2014. The PM<sub>10</sub> concentration exceeded the state standards once in 2012 and once in 2013 but did not exceed the federal standards in 2012 or 2013. The PM<sub>2.5</sub> concentration exceeded federal standards two days in 2012, four days in 2013, and two days in 2014. PM<sub>2.5</sub> and CO levels for 2014 were not available. No exceedances of either the state or federal standards for NO<sub>2</sub> or CO are known to have occurred at either monitoring station in the last three years. Table 2 indicates that background CO levels are well within standards.

## **Air Quality Management Plan**

Under state law, the SCAQMD is required to prepare a plan for air quality improvement for pollutants for which the District is in non-compliance. The SCAQMD updates the plan every three years. Each iteration of the SCAQMD's Air Quality Management Plan (AQMP) is an update of the previous plan and has a 20-year horizon. SCAQMD staff is currently developing the 2016 AQMP. The 2012 AQMP incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2007 AQMP. The SCAQMD adopted the 2012 AQMP in February 2013.



**Table 2  
Ambient Air Quality Data**

<b>Pollutant</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Ozone, ppm - Worst Hour	0.09	0.08	0.12
Number of days of State exceedances (>0.09 ppm)	0	0	1
Number of days of Federal exceedances (>0.12 ppm)	0	0	0
Carbon Monoxide, ppm - Worst 8 Hours	1.15	ND	ND
Number of days of State/Federal exceedances (>9.0 ppm)	0	ND	ND
Nitrogen Dioxide, ppm - Worst Hour	61.0	51.0	63.0
Number of days of State exceedances (>0.25 ppm)	0	0	0
Particulate Matter <10 microns, $\mu\text{g}/\text{m}^3$ Worst 24 Hours <sup>1</sup>	54.0	51.0	58.0
Number of samples of State exceedances (>50 $\mu\text{g}/\text{m}^3$ )	1	1	ND
Number of samples of Federal exceedances (>150 $\mu\text{g}/\text{m}^3$ )	0	0	ND
Particulate Matter <2.5 microns, $\mu\text{g}/\text{m}^3$ Worst 24 Hours <sup>1</sup>	62.2	49.7	74.7
Number of samples of Federal exceedances (>35 $\mu\text{g}/\text{m}^3$ )	2	4	2

*West Los Angeles-VA Hospital Monitoring Station*

*ND – No Data*

<sup>1</sup> *Burbank-West Palm Avenue Monitoring Station*

*Source: ARB 2012, 2013, 2014 Annual Air Quality Data Summaries available at <http://www.arb.ca.gov/adam/topfour/topfour1.php>*

The Final 2012 AQMP also addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. This Plan builds upon the approaches taken in the 2007 AQMP for the South Coast Air Basin for the attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the urgent need to engage in interagency coordinated planning to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act. The Final 2012 AQMP also includes a discussion of the emerging issues of ultrafine particle and near-roadway exposures, an analysis of the energy supply and demand issues that face the Basin and their relationship to air quality. The Plan also includes new demonstrations of 1-hour ozone attainment and vehicle miles travelled (VMT) emissions offsets, as per recent U.S. EPA requirements. The 2012 AQMP is incorporated by reference and available to download at <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan>.



## **Sensitive Receptors**

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore schools and hospitals. Sensitive receptors likely to be affected by air quality impacts associated with project construction include residents to the northeast of the project site, as well as Webster Elementary School. Based on the project plans, construction activities may occur within approximately 350 feet of Our Lady of Malibu Church, 400 feet of the nearest condominiums to the east of the project site, 550 feet of Webster Elementary School, and 1,600 feet of Pepperdine University. Therefore, the sensitive receptor closest to the project site, where construction activities may occur, would be Our Lady of Malibu Church, which is located across Civic Center Way approximately 350 feet north of the project site boundary. Air pollutant emissions associated with long-term use of the site are not location specific, but rather are a contribution to the airshed as a whole.

## **IMPACT ANALYSIS**

### **Methodology and Significance Thresholds**

This air quality analysis conforms to the methodologies recommended in the SCAQMD's *CEQA Air Quality Handbook* (1993). The handbook includes thresholds for emissions associated with both construction and operation of proposed projects.

The construction activities associated with development would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes excavators, graders, dump trucks, and loaders. Some of this equipment would be used during grading activities as well as when structures are constructed. It is assumed that all construction equipment used would be diesel-powered. The regional construction emissions associated with development of the proposed project were calculated using the California Emissions Estimator Model (CalEEMod) software developed for the SCAQMD by estimating the types and number of pieces of equipment that would be used on-site during each of the construction phases. These construction emissions are analyzed using the regional thresholds established by the SCAQMD and published in the *CEQA Air Quality Handbook*.

Operational emissions associated with on-site development were estimated using CalEEMod. Operational emissions include mobile source emissions, energy emissions, and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of on-site development. Emissions attributed to energy use include natural gas consumption for space and water heating. Area source emissions are generated by landscape maintenance equipment, consumer products and architectural coating. In addition to emissions estimated using CalEEMod, emission factors from the OFFROAD2007 tool were used to estimate the emissions associated with operation of a backhoe on a daily basis for excavation activities related to the project's cemetery use. To determine



whether a regional air quality impact would occur, the increase in emissions would be compared with the SCAQMD's recommended regional thresholds for operational emissions.

**Regional Thresholds.** To determine whether a proposed project would have a significant impact to air quality, Appendix G of the *CEQA Guidelines* questions whether a project would:

- a) *Conflict with or obstruct implementation of the applicable air quality plan;*
- b) *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 in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);*
- d) *Expose sensitive receptors to substantial pollutant concentrations; or*
- e) *Create objectionable odors affecting a substantial number of people.*

The SCAQMD has developed specific numeric thresholds that apply to projects within the South Coast Air Basin. The SCAQMD has established the following significance thresholds for construction activities within the South Coast Air Basin:

- *75 pounds per day of ROG*
- *100 pounds per day of NO<sub>x</sub>*
- *550 pounds per day of CO*
- *150 pounds per day of PM<sub>10</sub>*
- *55 pounds per day of PM<sub>2.5</sub>*

The SCAQMD has also established the following significance thresholds for project operations within the South Coast Air Basin:

- *55 pounds per day of ROG*
- *55 pounds per day of NO<sub>x</sub>*
- *550 pounds per day of CO*
- *150 pounds per day of SO<sub>x</sub>*
- *150 pounds per day of PM<sub>10</sub>*
- *55 pounds per day of PM<sub>2.5</sub>*

**Localized Significance Thresholds.** In addition to the above thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the *CEQA Air Quality Handbook*. LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), project size, distance to the sensitive receptor, etc. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation.



LSTs have been developed for NO<sub>x</sub>, CO, PM<sub>10</sub> and PM<sub>2.5</sub>. LSTs are not applicable to mobile (off-site) sources such as cars on a roadway (SCAQMD, June 2003). LSTs have been developed for emissions within construction areas up to five acres in size. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project site is located in Source Receptor Area 2 (SRA-2) and this analysis assumes that there would be no more than five acres of the site under active construction at one time. Therefore, the five-acre LSTs are used for significance determinations herein. According to the SCAQMD's publication *Final Localized Significant (LST) Thresholds Methodology*, the use of LSTs is voluntary, to be implemented at the discretion of local agencies. LSTs for construction are shown in Table 3.

**Table 3**  
**SCAQMD LSTs for SRA-2**

Pollutant	Allowable emissions as a function of receptor distance in feet from a five-acre site (lbs/day)				
	82 Feet	164 Feet	328 Feet	656 Feet	1,640 Feet
<b>Construction LSTs</b>					
Gradual conversion of NO <sub>x</sub> to NO <sub>2</sub>	221	212	226	250	312
CO	1,531	1,985	2,762	4,383	10,467
PM <sub>10</sub>	13	40	55	84	174
PM <sub>2.5</sub>	6	8	14	29	95
<b>Operational LSTs</b>					
Gradual conversion of NO <sub>x</sub> to NO <sub>2</sub>	221	212	226	250	312
CO	1,531	1,985	2,762	4,383	10,467
PM <sub>10</sub>	3	10	13	21	42
PM <sub>2.5</sub>	2	2	4	7	23

Source: SCAQMD, October 2009, <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2>, accessed online October 2015.

## Construction Impacts

Project construction would generate temporary air pollutant emissions. These impacts are associated with fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) and exhaust emissions from heavy construction vehicles and soil hauling trucks, in addition to ROG that would be released during the drying phase upon application of architectural coatings. Construction would generally consist of site preparation, grading, erection of the proposed buildings, paving and architectural coating.



The site preparation phase would involve the greatest amount of heavy equipment and the greatest generation of fugitive dust. For the purposes of construction emissions modeling, it was assumed that the project would comply with the SCAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located within the South Coast Air Basin. Therefore, the following conditions, which would be required to reduce fugitive dust in compliance with SCAQMD Rule 403, were included in CalEEMod for the site preparation and grading phases of construction.

1. **Minimization of Disturbance.** Construction contractors should minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.
2. **Soil Treatment.** Construction contractors should treat all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least twice daily, preferably in the late morning and after work is done for the day.
3. **Soil Stabilization.** Construction contractors should monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area shall be seeded and watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.
4. **No Grading During High Winds.** Construction contractors should stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured continuously over a one-hour period).
5. **Street Sweeping.** Construction contractors should sweep all on-site driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

Table 4 summarizes the estimated maximum daily emissions of pollutants during each of the major phases of construction.

With adherence to the conditions listed above, as required by SCAQMD Rule 403, maximum daily emissions of fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) would not exceed SCAQMD regional or LST thresholds for any pollutant. Therefore, temporary construction impacts would be less than significant.



**Table 4**  
**Estimated Construction Maximum Daily Air Pollutant Emissions (lbs/day)**

Construction Phase	Maximum Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Maximum lbs/day	73.2	96.7	69.4	21.2	12.7
SCAQMD Thresholds	75	100	550	150	55
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
Maximum On-site lbs/day	n/a	28.5	18.5	2.0	1.8
Local Significance Thresholds <sup>f</sup> (LSTs) (On-site only)	n/a	226	2,762	55	14
<b>Threshold Exceeded?</b>	<b>n/a</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

*Notes: All calculations were made using CalEEMod. Note that Winter emissions are shown above. Winter emissions were greater than Summer emissions and therefore provide a more conservative estimate of construction impacts. See the Appendix for calculations. Site Preparation, Grading, Paving, Building Construction and Architectural Coating totals include worker trips, soil export hauling trips, construction vehicle emissions and fugitive dust.  
<sup>f</sup> LSTs are for a five-acre project in SRA-2 within a distance of 328 feet from the site boundary.*

### Long-Term Regional Impacts

**Operational Air Pollutant Emissions.** Table 5 summarizes projected emissions associated with operation of the proposed project. The majority of project-related operational emissions would be due to vehicle trips to and from the site. The Institute of Transportation Engineers traffic generation rates for cemetery uses were used for the traffic analysis in order to provide a conservative estimate of the potential traffic generation impacts.

As shown in Table 5, project generated emissions would not exceed the SCAQMD thresholds for ROG, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>. Air quality impacts associated with operation of the proposed project would therefore be less than significant.





**Table 5  
 Project Operational Emissions**

Emissions Source	Estimated Emissions (lbs/day)					
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Mobile (off-site)	0.6	1.2	5.0	<0.1	0.7	0.2
Energy (on-site)	<0.1	0.1	0.1	<0.1	<0.1	<0.1
Area (on-site)	24.2	<0.1	<0.1	0.0	<0.1	<0.1
Daily Backhoe Activity (on-site) <sup>1</sup>	0.2	1.4	1.4	<0.1	0.1	0.1
<b>Maximum lbs/day</b>	<b>24.9</b>	<b>2.7</b>	<b>6.5</b>	<b>&lt;0.1</b>	<b>0.8</b>	<b>0.3</b>
SCAQMD Thresholds	55	55	550	150	150	55
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<u>Local Significance Thresholds<sup>2</sup> (LSTs) (On-site only)</u>	n/a	226	2,762	n/a	13	4
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

See Appendix for CalEEMod computer model output. Note that Winter emissions are shown above. Winter emissions were greater than Summer emissions and therefore provide a more conservative estimate of Operational impacts.

<sup>1</sup> OFFROAD2007, based on estimated average daily backhoe operation of up to 4 hours per day. Refer to Appendix for calculations.

<sup>2</sup> LSTs are for a five-acre project in SRA-2 within a distance of 328 feet from the site boundary.

**Carbon Monoxide Hotspot Analysis.** Areas with high vehicle density, such as congested intersections, have the potential to create high concentrations of CO, known as CO hotspots. A project's localized air quality impact is considered significant if CO emissions create a hotspot where either the California one-hour standard of 20 ppm or the federal and state eight-hour standard of 9.0 ppm is exceeded. This typically occurs at severely congested intersections (level of service [LOS] E or worse). Pursuant to SCAQMD guidance, a CO hotspot analysis should be conducted for intersections where the proposed project would have a significant impact at a signalized intersection, causing the LOS to change to E or F, or when the volume to capacity ratio (V/C) increases by 2% or more as a result of a proposed project for intersections rated D or worse (SCAQMD, 2003). The proposed project would result in approximately 100 daily weekday trips, 125 Saturday trips and 160 Sunday trips. Based on the high volume of traffic that is already carried by the local roadways (see Table 6 from most recent available traffic data for area roadways), this incremental increase in trips would not substantially affect LOS or result in a CO hotspot.

**Toxic Air Contaminants.** The California Air Resources Board's (ARB's) *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. Sensitive receptors within 500 feet of Malibu Canyon Road include Webster Elementary School (approximately 200 feet from Malibu Canyon Road), Our



Lady of Malibu Church (approximately 300 feet from Malibu Canyon Road), and single-family residences north of the project site (approximately 75 feet from Malibu Canyon Road). Recent daily traffic counts for Malibu Canyon Road are not available; however, the project traffic study, conducted by Overland Traffic Consultants, shows that traffic volumes are higher on Pacific Coast Highway than on Malibu Canyon Road (see Table 6 above). According to California Department of Transportation (Caltrans) traffic data for 2014, average daily traffic on Pacific Coast Highway at Malibu Canyon Road is between 32,500 and 36,500. Because traffic levels on Malibu Canyon Road are lower than Pacific Coast Highway, the addition of truck trips on Malibu Canyon Road during project construction and operation would not cause traffic levels exceeding 50,000 vehicles per day. As such, traffic on Malibu Canyon Road would not create significant health risks to sensitive receptors even with temporary haul truck traffic.

**Table 6**  
**Existing Traffic**

Roadway Segment	Existing Traffic Volumes PM Peak hour
Malibu Canyon Road between Pacific Coast Highway and Civic Center Way	1,111
Pacific Coast Highway between Malibu Canyon Road and Webb Way	3,310
Civic Center Way between Malibu Canyon Road and Pacific Coast Highway	1,246

*Source: Overland Traffic Consultants, Inc. Traffic Impact Analysis Resort Hotel Development, April 2012.*

**Odors.** The proposed project would involve development of a religious memorial site. This use would not involve cremations on-site, and would not create or emits odors. Therefore, this impact would be less than significant.

**AQMP Consistency.** A project may be inconsistent with the AQMP if it would generate population, housing or employment growth exceeding the forecasts used in the development of the AQMP. The 2012 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates in part local city general plans and the Southern California Association of Government's (SCAG) Regional Transportation Plan socioeconomic forecast projections of regional population, housing and employment growth.

The proposed project involves the development of a religious memorial site and would not involve the development of residential uses that would cause a direct increase in the City's population. However, the proposed project could cause an indirect increase in the City's population through an increase in employment as a result of development of the religious memorial facility. The employees of the project would most likely be maintenance staff, site managers and possibly funeral staff. The project would not generate a substantial number of new employees and would likely employ individuals from the existing labor market in the region. SCAG forecasts that the region will add 1 million new jobs, between 2012 and 2040, for a total of 5.2 million jobs in 2040 (SCAG, 2014). Therefore, the proposed project would not generate growth beyond AQMP forecasts. The project would be consistent with the AQMP and this impact would be less than significant.



## REFERENCES

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- South Coast Air Quality Management District. *California Emissions Estimator Model User Guide*.  
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- South Coast Air Quality Management District (SCAQMD). *CEQA Air Quality Handbook*. November 1993.
- SCAQMD. *Final Localized Significance Threshold Methodology*. June 2003. Revised July 2008.
- SCAQMD. *Final 2007 Air Quality Management Plan*. June 2007
- SCAG. *2008 RTP Forecast by City*. Adopted May 2008.  
<http://gisdata.scag.ca.gov/Pages/SocioEconomicLibrary.aspx?keyword=Forecasting#>



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## **Appendix**

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*CalEEMod Air Quality Model Worksheets –  
Summer and Winter*

*Daily Backhoe Operation Emissions Calculation*

**Malibu Memorial Cemetery Project  
Los Angeles-South Coast County, Summer**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Place of Worship	17.50	1000sqft	0.40	17,500.00	0
Enclosed Parking Structure	2.00	Acre	2.00	87,120.00	0
City Park	18.80	Acre	18.80	818,928.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	33
<b>Climate Zone</b>	8			<b>Operational Year</b>	2017
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	630.89	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - The place of worship is the square footage for the chapel and mausoleum combined. The parking includes all paved areas. The park accounts for all remaining space.

Construction Phase - Architectural coating phase lengthened to more accurately predict the actual constructing phasing for the project.

Grading -

Vehicle Trips - The trip rates were taking from the ITE Trip Generation manual 9th edition for a Cemetery (566).

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	325.00
tblConstructionPhase	PhaseEndDate	11/29/2018	9/28/2017
tblConstructionPhase	PhaseEndDate	10/26/2017	9/28/2017
tblConstructionPhase	PhaseStartDate	9/1/2017	7/1/2016
tblConstructionPhase	PhaseStartDate	9/29/2017	9/1/2017
tblGrading	MaterialExported	0.00	21,000.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.37	7.13
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	36.63	9.14
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.11	5.68

## 2.0 Emissions Summary

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## 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	24.1505	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
Energy	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
Mobile	0.4994	1.1572	4.8622	0.0112	0.7244	0.0164	0.7408	0.1937	0.0151	0.2088		957.0986	957.0986	0.0390		957.9170
<b>Total</b>	<b>24.6611</b>	<b>1.2590</b>	<b>4.9516</b>	<b>0.0118</b>	<b>0.7244</b>	<b>0.0241</b>	<b>0.7485</b>	<b>0.1937</b>	<b>0.0228</b>	<b>0.2165</b>		<b>1,079.1698</b>	<b>1,079.1698</b>	<b>0.0413</b>	<b>2.2400e-003</b>	<b>1,080.7316</b>

### 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	24.1505	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
Energy	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
Mobile	0.4994	1.1572	4.8622	0.0112	0.7244	0.0164	0.7408	0.1937	0.0151	0.2088		957.0986	957.0986	0.0390		957.9170
<b>Total</b>	<b>24.6611</b>	<b>1.2590</b>	<b>4.9516</b>	<b>0.0118</b>	<b>0.7244</b>	<b>0.0241</b>	<b>0.7485</b>	<b>0.1937</b>	<b>0.0228</b>	<b>0.2165</b>		<b>1,079.1698</b>	<b>1,079.1698</b>	<b>0.0413</b>	<b>2.2400e-003</b>	<b>1,080.7316</b>

	ROG	NOx	CO	SO2	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	1/1/2016	1/28/2016	5	20	
2	Site Preparation	Site Preparation	1/29/2016	2/11/2016	5	10	
3	Grading	Grading	2/12/2016	3/31/2016	5	35	
4	Building Construction	Building Construction	4/1/2016	8/31/2017	5	370	
5	Architectural Coating	Architectural Coating	7/1/2016	9/28/2017	5	325	
6	Paving	Paving	9/1/2017	9/28/2017	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,385,322; Non-Residential Outdoor: 461,774 (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
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
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

**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	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	2,625.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	388.00	151.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	78.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

### 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					
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
<b>Total</b>	<b>4.2876</b>	<b>45.6559</b>	<b>35.0303</b>	<b>0.0399</b>		<b>2.2921</b>	<b>2.2921</b>		<b>2.1365</b>	<b>2.1365</b>		<b>4,089.284 1</b>	<b>4,089.284 1</b>	<b>1.1121</b>		<b>4,112.637 4</b>

### 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	0.0000	0.0000	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	0.0668	0.0841	1.0406	2.1800e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		184.3532	184.3532	0.0100			184.5639
<b>Total</b>	<b>0.0668</b>	<b>0.0841</b>	<b>1.0406</b>	<b>2.1800e-003</b>	<b>0.1677</b>	<b>1.5900e-003</b>	<b>0.1693</b>	<b>0.0445</b>	<b>1.4600e-003</b>	<b>0.0459</b>		<b>184.3532</b>	<b>184.3532</b>	<b>0.0100</b>			<b>184.5639</b>

#### 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	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.2841	4,089.2841	1.1121			4,112.6374
<b>Total</b>	<b>4.2876</b>	<b>45.6559</b>	<b>35.0303</b>	<b>0.0399</b>		<b>2.2921</b>	<b>2.2921</b>		<b>2.1365</b>	<b>2.1365</b>	<b>0.0000</b>	<b>4,089.2841</b>	<b>4,089.2841</b>	<b>1.1121</b>			<b>4,112.6374</b>

### 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	0.0000	0.0000	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	0.0668	0.0841	1.0406	2.1800e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		184.3532	184.3532	0.0100			184.5639
<b>Total</b>	<b>0.0668</b>	<b>0.0841</b>	<b>1.0406</b>	<b>2.1800e-003</b>	<b>0.1677</b>	<b>1.5900e-003</b>	<b>0.1693</b>	<b>0.0445</b>	<b>1.4600e-003</b>	<b>0.0459</b>		<b>184.3532</b>	<b>184.3532</b>	<b>0.0100</b>			<b>184.5639</b>

### 3.3 Site Preparation - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000				0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262			4,090.7544
<b>Total</b>	<b>5.0771</b>	<b>54.6323</b>	<b>41.1053</b>	<b>0.0391</b>	<b>18.0663</b>	<b>2.9387</b>	<b>21.0049</b>	<b>9.9307</b>	<b>2.7036</b>	<b>12.6343</b>		<b>4,065.0053</b>	<b>4,065.0053</b>	<b>1.2262</b>			<b>4,090.7544</b>

### 3.3 Site Preparation - 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	0.0802	0.1009	1.2487	2.6200e-003	0.2012	1.9000e-003	0.2031	0.0534	1.7500e-003	0.0551		221.2238	221.2238	0.0120		221.4767
<b>Total</b>	<b>0.0802</b>	<b>0.1009</b>	<b>1.2487</b>	<b>2.6200e-003</b>	<b>0.2012</b>	<b>1.9000e-003</b>	<b>0.2031</b>	<b>0.0534</b>	<b>1.7500e-003</b>	<b>0.0551</b>		<b>221.2238</b>	<b>221.2238</b>	<b>0.0120</b>		<b>221.4767</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
<b>Total</b>	<b>5.0771</b>	<b>54.6323</b>	<b>41.1053</b>	<b>0.0391</b>	<b>8.1298</b>	<b>2.9387</b>	<b>11.0685</b>	<b>4.4688</b>	<b>2.7036</b>	<b>7.1724</b>	<b>0.0000</b>	<b>4,065.0053</b>	<b>4,065.0053</b>	<b>1.2262</b>		<b>4,090.7544</b>

### 3.3 Site Preparation - 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	0.0802	0.1009	1.2487	2.6200e-003	0.2012	1.9000e-003	0.2031	0.0534	1.7500e-003	0.0551		221.2238	221.2238	0.0120			221.4767
<b>Total</b>	<b>0.0802</b>	<b>0.1009</b>	<b>1.2487</b>	<b>2.6200e-003</b>	<b>0.2012</b>	<b>1.9000e-003</b>	<b>0.2031</b>	<b>0.0534</b>	<b>1.7500e-003</b>	<b>0.0551</b>		<b>221.2238</b>	<b>221.2238</b>	<b>0.0120</b>			<b>221.4767</b>

### 3.4 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					8.7412	0.0000	8.7412	3.6068	0.0000	3.6068			0.0000				0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350			6,455.6154
<b>Total</b>	<b>6.4795</b>	<b>74.8137</b>	<b>49.1374</b>	<b>0.0617</b>	<b>8.7412</b>	<b>3.5842</b>	<b>12.3254</b>	<b>3.6068</b>	<b>3.2975</b>	<b>6.9043</b>		<b>6,414.9807</b>	<b>6,414.9807</b>	<b>1.9350</b>			<b>6,455.6154</b>



### 3.4 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	1.3210	21.0240	14.9196	0.0560	1.3061	0.3113	1.6174	0.3576	0.2863	0.6439		5,645.133 1	5,645.133 1	0.0417		5,646.009 7
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	0.0891	0.1121	1.3874	2.9100e-003	0.2236	2.1100e-003	0.2257	0.0593	1.9400e-003	0.0612		245.8043	245.8043	0.0134		246.0853
<b>Total</b>	<b>1.4101</b>	<b>21.1362</b>	<b>16.3070</b>	<b>0.0589</b>	<b>1.5296</b>	<b>0.3134</b>	<b>1.8430</b>	<b>0.4169</b>	<b>0.2883</b>	<b>0.7052</b>		<b>5,890.937 3</b>	<b>5,890.937 3</b>	<b>0.0551</b>		<b>5,892.094 9</b>

#### 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					3.9335	0.0000	3.9335	1.6231	0.0000	1.6231			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.980 7	6,414.980 7	1.9350		6,455.615 4
<b>Total</b>	<b>6.4795</b>	<b>74.8137</b>	<b>49.1374</b>	<b>0.0617</b>	<b>3.9335</b>	<b>3.5842</b>	<b>7.5178</b>	<b>1.6231</b>	<b>3.2975</b>	<b>4.9206</b>	<b>0.0000</b>	<b>6,414.980 7</b>	<b>6,414.980 7</b>	<b>1.9350</b>		<b>6,455.615 4</b>

### 3.4 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	1.3210	21.0240	14.9196	0.0560	1.3061	0.3113	1.6174	0.3576	0.2863	0.6439		5,645.133 1	5,645.133 1	0.0417		5,646.009 7
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	0.0891	0.1121	1.3874	2.9100e-003	0.2236	2.1100e-003	0.2257	0.0593	1.9400e-003	0.0612		245.8043	245.8043	0.0134		246.0853
<b>Total</b>	<b>1.4101</b>	<b>21.1362</b>	<b>16.3070</b>	<b>0.0589</b>	<b>1.5296</b>	<b>0.3134</b>	<b>1.8430</b>	<b>0.4169</b>	<b>0.2883</b>	<b>0.7052</b>		<b>5,890.937 3</b>	<b>5,890.937 3</b>	<b>0.0551</b>		<b>5,892.094 9</b>

### 3.5 Building Construction - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.286 4	2,669.286 4	0.6620		2,683.189 0
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>		<b>1.9674</b>	<b>1.9674</b>		<b>1.8485</b>	<b>1.8485</b>		<b>2,669.286 4</b>	<b>2,669.286 4</b>	<b>0.6620</b>		<b>2,683.189 0</b>

### 3.5 Building Construction - 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	1.2722	13.2138	15.3518	0.0332	0.9417	0.2066	1.1483	0.2679	0.1900	0.4579		3,325.3313	3,325.3313	0.0244			3,325.8439
Worker	1.7281	2.1750	26.9154	0.0564	4.3369	0.0410	4.3779	1.1502	0.0377	1.1879		4,768.6026	4,768.6026	0.2596			4,774.0539
<b>Total</b>	<b>3.0003</b>	<b>15.3888</b>	<b>42.2672</b>	<b>0.0896</b>	<b>5.2786</b>	<b>0.2476</b>	<b>5.5262</b>	<b>1.4181</b>	<b>0.2276</b>	<b>1.6458</b>		<b>8,093.9338</b>	<b>8,093.9338</b>	<b>0.2840</b>			<b>8,099.8978</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620			2,683.1890
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>		<b>1.9674</b>	<b>1.9674</b>		<b>1.8485</b>	<b>1.8485</b>	<b>0.0000</b>	<b>2,669.2864</b>	<b>2,669.2864</b>	<b>0.6620</b>			<b>2,683.1890</b>

### 3.5 Building Construction - 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	1.2722	13.2138	15.3518	0.0332	0.9417	0.2066	1.1483	0.2679	0.1900	0.4579		3,325.3313	3,325.3313	0.0244			3,325.8439
Worker	1.7281	2.1750	26.9154	0.0564	4.3369	0.0410	4.3779	1.1502	0.0377	1.1879		4,768.6026	4,768.6026	0.2596			4,774.0539
<b>Total</b>	<b>3.0003</b>	<b>15.3888</b>	<b>42.2672</b>	<b>0.0896</b>	<b>5.2786</b>	<b>0.2476</b>	<b>5.5262</b>	<b>1.4181</b>	<b>0.2276</b>	<b>1.6458</b>		<b>8,093.9338</b>	<b>8,093.9338</b>	<b>0.2840</b>			<b>8,099.8978</b>

### 3.5 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
<b>Total</b>	<b>3.1024</b>	<b>26.4057</b>	<b>18.1291</b>	<b>0.0268</b>		<b>1.7812</b>	<b>1.7812</b>		<b>1.6730</b>	<b>1.6730</b>		<b>2,639.8053</b>	<b>2,639.8053</b>	<b>0.6497</b>			<b>2,653.4490</b>

### 3.5 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	1.1634	12.0460	14.4135	0.0332	0.9421	0.1840	1.1261	0.2681	0.1693	0.4373		3,272.2294	3,272.2294	0.0236			3,272.7254
Worker	1.5530	1.9671	24.3864	0.0564	4.3369	0.0393	4.3762	1.1502	0.0362	1.1864		4,590.1468	4,590.1468	0.2399			4,595.1851
<b>Total</b>	<b>2.7163</b>	<b>14.0131</b>	<b>38.7999</b>	<b>0.0895</b>	<b>5.2790</b>	<b>0.2233</b>	<b>5.5023</b>	<b>1.4183</b>	<b>0.2055</b>	<b>1.6237</b>		<b>7,862.3762</b>	<b>7,862.3762</b>	<b>0.2635</b>			<b>7,867.9105</b>

#### 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
<b>Total</b>	<b>3.1024</b>	<b>26.4057</b>	<b>18.1291</b>	<b>0.0268</b>		<b>1.7812</b>	<b>1.7812</b>		<b>1.6730</b>	<b>1.6730</b>	<b>0.0000</b>	<b>2,639.8053</b>	<b>2,639.8053</b>	<b>0.6497</b>			<b>2,653.4490</b>

### 3.5 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	1.1634	12.0460	14.4135	0.0332	0.9421	0.1840	1.1261	0.2681	0.1693	0.4373		3,272.2294	3,272.2294	0.0236			3,272.7254
Worker	1.5530	1.9671	24.3864	0.0564	4.3369	0.0393	4.3762	1.1502	0.0362	1.1864		4,590.1468	4,590.1468	0.2399			4,595.1851
<b>Total</b>	<b>2.7163</b>	<b>14.0131</b>	<b>38.7999</b>	<b>0.0895</b>	<b>5.2790</b>	<b>0.2233</b>	<b>5.5023</b>	<b>1.4183</b>	<b>0.2055</b>	<b>1.6237</b>		<b>7,862.3762</b>	<b>7,862.3762</b>	<b>0.2635</b>			<b>7,867.9105</b>

### 3.6 Architectural Coating - 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						
Archit. Coating	65.8561					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000	
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332			282.1449
<b>Total</b>	<b>66.2245</b>	<b>2.3722</b>	<b>1.8839</b>	<b>2.9700e-003</b>		<b>0.1966</b>	<b>0.1966</b>		<b>0.1966</b>	<b>0.1966</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0332</b>			<b>282.1449</b>

### 3.6 Architectural Coating - 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	0.3474	0.4372	5.4108	0.0113	0.8719	8.2500e-003	0.8801	0.2312	7.5800e-003	0.2388		958.6366	958.6366	0.0522			959.7325
<b>Total</b>	<b>0.3474</b>	<b>0.4372</b>	<b>5.4108</b>	<b>0.0113</b>	<b>0.8719</b>	<b>8.2500e-003</b>	<b>0.8801</b>	<b>0.2312</b>	<b>7.5800e-003</b>	<b>0.2388</b>		<b>958.6366</b>	<b>958.6366</b>	<b>0.0522</b>			<b>959.7325</b>

#### 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	65.8561					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332			282.1449
<b>Total</b>	<b>66.2245</b>	<b>2.3722</b>	<b>1.8839</b>	<b>2.9700e-003</b>		<b>0.1966</b>	<b>0.1966</b>		<b>0.1966</b>	<b>0.1966</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0332</b>			<b>282.1449</b>

### 3.6 Architectural Coating - 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	0.3474	0.4372	5.4108	0.0113	0.8719	8.2500e-003	0.8801	0.2312	7.5800e-003	0.2388		958.6366	958.6366	0.0522			959.7325
<b>Total</b>	<b>0.3474</b>	<b>0.4372</b>	<b>5.4108</b>	<b>0.0113</b>	<b>0.8719</b>	<b>8.2500e-003</b>	<b>0.8801</b>	<b>0.2312</b>	<b>7.5800e-003</b>	<b>0.2388</b>		<b>958.6366</b>	<b>958.6366</b>	<b>0.0522</b>			<b>959.7325</b>

### 3.6 Architectural Coating - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	65.8561					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
<b>Total</b>	<b>66.1884</b>	<b>2.1850</b>	<b>1.8681</b>	<b>2.9700e-003</b>		<b>0.1733</b>	<b>0.1733</b>		<b>0.1733</b>	<b>0.1733</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0297</b>			<b>282.0721</b>



### 3.6 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	0.3122	0.3954	4.9024	0.0113	0.8719	7.9000e-003	0.8798	0.2312	7.2800e-003	0.2385		922.7615	922.7615	0.0482			923.7743
<b>Total</b>	<b>0.3122</b>	<b>0.3954</b>	<b>4.9024</b>	<b>0.0113</b>	<b>0.8719</b>	<b>7.9000e-003</b>	<b>0.8798</b>	<b>0.2312</b>	<b>7.2800e-003</b>	<b>0.2385</b>		<b>922.7615</b>	<b>922.7615</b>	<b>0.0482</b>			<b>923.7743</b>

#### 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	65.8561					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
<b>Total</b>	<b>66.1884</b>	<b>2.1850</b>	<b>1.8681</b>	<b>2.9700e-003</b>		<b>0.1733</b>	<b>0.1733</b>		<b>0.1733</b>	<b>0.1733</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0297</b>			<b>282.0721</b>

### 3.6 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	0.3122	0.3954	4.9024	0.0113	0.8719	7.9000e-003	0.8798	0.2312	7.2800e-003	0.2385		922.7615	922.7615	0.0482			923.7743
<b>Total</b>	<b>0.3122</b>	<b>0.3954</b>	<b>4.9024</b>	<b>0.0113</b>	<b>0.8719</b>	<b>7.9000e-003</b>	<b>0.8798</b>	<b>0.2312</b>	<b>7.2800e-003</b>	<b>0.2385</b>		<b>922.7615</b>	<b>922.7615</b>	<b>0.0482</b>			<b>923.7743</b>

### 3.7 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
<b>Total</b>	<b>1.9074</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>		<b>1.1384</b>	<b>1.1384</b>		<b>1.0473</b>	<b>1.0473</b>		<b>2,281.0588</b>	<b>2,281.0588</b>	<b>0.6989</b>			<b>2,295.7360</b>

### 3.7 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	0.0600	0.0761	0.9428	2.1800e-003	0.1677	1.5200e-003	0.1692	0.0445	1.4000e-003	0.0459		177.4541	177.4541	9.2800e-003			177.6489
<b>Total</b>	<b>0.0600</b>	<b>0.0761</b>	<b>0.9428</b>	<b>2.1800e-003</b>	<b>0.1677</b>	<b>1.5200e-003</b>	<b>0.1692</b>	<b>0.0445</b>	<b>1.4000e-003</b>	<b>0.0459</b>		<b>177.4541</b>	<b>177.4541</b>	<b>9.2800e-003</b>			<b>177.6489</b>

#### 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
<b>Total</b>	<b>1.9074</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>		<b>1.1384</b>	<b>1.1384</b>		<b>1.0473</b>	<b>1.0473</b>	<b>0.0000</b>	<b>2,281.0588</b>	<b>2,281.0588</b>	<b>0.6989</b>			<b>2,295.7360</b>

### 3.7 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	0.0600	0.0761	0.9428	2.1800e-003	0.1677	1.5200e-003	0.1692	0.0445	1.4000e-003	0.0459		177.4541	177.4541	9.2800e-003		177.6489
<b>Total</b>	<b>0.0600</b>	<b>0.0761</b>	<b>0.9428</b>	<b>2.1800e-003</b>	<b>0.1677</b>	<b>1.5200e-003</b>	<b>0.1692</b>	<b>0.0445</b>	<b>1.4000e-003</b>	<b>0.0459</b>		<b>177.4541</b>	<b>177.4541</b>	<b>9.2800e-003</b>		<b>177.6489</b>

### 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	0.4994	1.1572	4.8622	0.0112	0.7244	0.0164	0.7408	0.1937	0.0151	0.2088		957.0986	957.0986	0.0390		957.9170
Unmitigated	0.4994	1.1572	4.8622	0.0112	0.7244	0.0164	0.7408	0.1937	0.0151	0.2088		957.0986	957.0986	0.0390		957.9170

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Place of Worship	99.40	124.78	159.95	238,179	238,179
<b>Total</b>	<b>99.40</b>	<b>124.78</b>	<b>159.95</b>	<b>238,179</b>	<b>238,179</b>

**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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Enclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Place of Worship	16.60	8.40	6.90	0.00	95.00	5.00	64	25	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.532559	0.058242	0.178229	0.125155	0.038934	0.006273	0.016761	0.032323	0.002478	0.003154	0.003685	0.000544	0.001663

**5.0 Energy Detail**

**5.1 Fleet Mix**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
NaturalGas Unmitigated	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057

### 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					
Place of Worship	1037.53	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0112</b>	<b>0.1017</b>	<b>0.0854</b>	<b>6.1000e-004</b>		<b>7.7300e-003</b>	<b>7.7300e-003</b>		<b>7.7300e-003</b>	<b>7.7300e-003</b>		<b>122.0629</b>	<b>122.0629</b>	<b>2.3400e-003</b>	<b>2.2400e-003</b>	<b>122.8057</b>

### 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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Place of Worship	1.03753	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
<b>Total</b>		<b>0.0112</b>	<b>0.1017</b>	<b>0.0854</b>	<b>6.1000e-004</b>		<b>7.7300e-003</b>	<b>7.7300e-003</b>		<b>7.7300e-003</b>	<b>7.7300e-003</b>		<b>122.0629</b>	<b>122.0629</b>	<b>2.3400e-003</b>	<b>2.2400e-003</b>	<b>122.8057</b>

### 6.0 Area Detail

#### 6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive 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	24.1505	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
Unmitigated	24.1505	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003

### 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	5.8639					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	18.2863					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.8000e-004	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
<b>Total</b>	<b>24.1505</b>	<b>4.0000e-005</b>	<b>3.9800e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>8.3800e-003</b>	<b>8.3800e-003</b>	<b>2.0000e-005</b>		<b>8.8700e-003</b>

#### 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	5.8639					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	18.2863					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.8000e-004	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
<b>Total</b>	<b>24.1505</b>	<b>4.0000e-005</b>	<b>3.9800e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>8.3800e-003</b>	<b>8.3800e-003</b>	<b>2.0000e-005</b>		<b>8.8700e-003</b>

### 7.0 Water Detail



## 7.1 Mitigation Measures Water

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

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**Malibu Memorial Cemetery Project  
Los Angeles-South Coast County, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Place of Worship	17.50	1000sqft	0.40	17,500.00	0
Enclosed Parking Structure	2.00	Acre	2.00	87,120.00	0
City Park	18.80	Acre	18.80	818,928.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	33
<b>Climate Zone</b>	8			<b>Operational Year</b>	2017
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	630.89	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - The place of worship is the square footage for the chapel and mausoleum combined. The parking includes all paved areas. The park accounts for all remaining space.

Construction Phase - Architectural coating phase lengthened to more accurately predict the actual constructing phasing for the project.

Grading -

Vehicle Trips - The trip rates were taken from the ITE Trip Generation manual 9th edition for a Cemetery (566).

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	325.00
tblConstructionPhase	PhaseEndDate	11/29/2018	9/28/2017
tblConstructionPhase	PhaseEndDate	10/26/2017	9/28/2017
tblConstructionPhase	PhaseStartDate	9/1/2017	7/1/2016
tblConstructionPhase	PhaseStartDate	9/29/2017	9/1/2017
tblGrading	MaterialExported	0.00	21,000.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	10.37	7.13
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	36.63	9.14
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	9.11	5.68

## 2.0 Emissions Summary

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## 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	24.1505	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
Energy	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
Mobile	0.5287	1.2161	5.0144	0.0107	0.7244	0.0165	0.7409	0.1937	0.0151	0.2089		915.4680	915.4680	0.0390		916.2874
<b>Total</b>	<b>24.6904</b>	<b>1.3178</b>	<b>5.1038</b>	<b>0.0113</b>	<b>0.7244</b>	<b>0.0242</b>	<b>0.7486</b>	<b>0.1937</b>	<b>0.0229</b>	<b>0.2166</b>		<b>1,037.5393</b>	<b>1,037.5393</b>	<b>0.0414</b>	<b>2.2400e-003</b>	<b>1,039.1020</b>

### 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	24.1505	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
Energy	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
Mobile	0.5287	1.2161	5.0144	0.0107	0.7244	0.0165	0.7409	0.1937	0.0151	0.2089		915.4680	915.4680	0.0390		916.2874
<b>Total</b>	<b>24.6904</b>	<b>1.3178</b>	<b>5.1038</b>	<b>0.0113</b>	<b>0.7244</b>	<b>0.0242</b>	<b>0.7486</b>	<b>0.1937</b>	<b>0.0229</b>	<b>0.2166</b>		<b>1,037.5393</b>	<b>1,037.5393</b>	<b>0.0414</b>	<b>2.2400e-003</b>	<b>1,039.1020</b>

	ROG	NOx	CO	SO2	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	1/1/2016	1/28/2016	5	20	
2	Site Preparation	Site Preparation	1/29/2016	2/11/2016	5	10	
3	Grading	Grading	2/12/2016	3/31/2016	5	35	
4	Building Construction	Building Construction	4/1/2016	8/31/2017	5	370	
5	Architectural Coating	Architectural Coating	7/1/2016	9/28/2017	5	325	
6	Paving	Paving	9/1/2017	9/28/2017	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,385,322; Non-Residential Outdoor: 461,774 (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
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
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

**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	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	2,625.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	388.00	151.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	78.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

### 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					
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
<b>Total</b>	<b>4.2876</b>	<b>45.6559</b>	<b>35.0303</b>	<b>0.0399</b>		<b>2.2921</b>	<b>2.2921</b>		<b>2.1365</b>	<b>2.1365</b>		<b>4,089.284 1</b>	<b>4,089.284 1</b>	<b>1.1121</b>		<b>4,112.637 4</b>



### 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	0.0000	0.0000	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	0.0695	0.0932	0.9771	2.0600e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		174.0047	174.0047	0.0100			174.2154
<b>Total</b>	<b>0.0695</b>	<b>0.0932</b>	<b>0.9771</b>	<b>2.0600e-003</b>	<b>0.1677</b>	<b>1.5900e-003</b>	<b>0.1693</b>	<b>0.0445</b>	<b>1.4600e-003</b>	<b>0.0459</b>		<b>174.0047</b>	<b>174.0047</b>	<b>0.0100</b>			<b>174.2154</b>

#### 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	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.2841	4,089.2841	1.1121			4,112.6374
<b>Total</b>	<b>4.2876</b>	<b>45.6559</b>	<b>35.0303</b>	<b>0.0399</b>		<b>2.2921</b>	<b>2.2921</b>		<b>2.1365</b>	<b>2.1365</b>	<b>0.0000</b>	<b>4,089.2841</b>	<b>4,089.2841</b>	<b>1.1121</b>			<b>4,112.6374</b>

### 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	0.0000	0.0000	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	0.0695	0.0932	0.9771	2.0600e-003	0.1677	1.5900e-003	0.1693	0.0445	1.4600e-003	0.0459		174.0047	174.0047	0.0100			174.2154
<b>Total</b>	<b>0.0695</b>	<b>0.0932</b>	<b>0.9771</b>	<b>2.0600e-003</b>	<b>0.1677</b>	<b>1.5900e-003</b>	<b>0.1693</b>	<b>0.0445</b>	<b>1.4600e-003</b>	<b>0.0459</b>		<b>174.0047</b>	<b>174.0047</b>	<b>0.0100</b>			<b>174.2154</b>

### 3.3 Site Preparation - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000				0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262			4,090.7544
<b>Total</b>	<b>5.0771</b>	<b>54.6323</b>	<b>41.1053</b>	<b>0.0391</b>	<b>18.0663</b>	<b>2.9387</b>	<b>21.0049</b>	<b>9.9307</b>	<b>2.7036</b>	<b>12.6343</b>		<b>4,065.0053</b>	<b>4,065.0053</b>	<b>1.2262</b>			<b>4,090.7544</b>

### 3.3 Site Preparation - 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	0.0834	0.1119	1.1725	2.4700e-003	0.2012	1.9000e-003	0.2031	0.0534	1.7500e-003	0.0551		208.8056	208.8056	0.0120			209.0585
<b>Total</b>	<b>0.0834</b>	<b>0.1119</b>	<b>1.1725</b>	<b>2.4700e-003</b>	<b>0.2012</b>	<b>1.9000e-003</b>	<b>0.2031</b>	<b>0.0534</b>	<b>1.7500e-003</b>	<b>0.0551</b>		<b>208.8056</b>	<b>208.8056</b>	<b>0.0120</b>			<b>209.0585</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000	
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262			4,090.7544
<b>Total</b>	<b>5.0771</b>	<b>54.6323</b>	<b>41.1053</b>	<b>0.0391</b>	<b>8.1298</b>	<b>2.9387</b>	<b>11.0685</b>	<b>4.4688</b>	<b>2.7036</b>	<b>7.1724</b>	<b>0.0000</b>	<b>4,065.0053</b>	<b>4,065.0053</b>	<b>1.2262</b>			<b>4,090.7544</b>

### 3.3 Site Preparation - 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	0.0834	0.1119	1.1725	2.4700e-003	0.2012	1.9000e-003	0.2031	0.0534	1.7500e-003	0.0551		208.8056	208.8056	0.0120			209.0585
<b>Total</b>	<b>0.0834</b>	<b>0.1119</b>	<b>1.1725</b>	<b>2.4700e-003</b>	<b>0.2012</b>	<b>1.9000e-003</b>	<b>0.2031</b>	<b>0.0534</b>	<b>1.7500e-003</b>	<b>0.0551</b>		<b>208.8056</b>	<b>208.8056</b>	<b>0.0120</b>			<b>209.0585</b>

### 3.4 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					8.7412	0.0000	8.7412	3.6068	0.0000	3.6068			0.0000			0.0000	
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350			6,455.6154
<b>Total</b>	<b>6.4795</b>	<b>74.8137</b>	<b>49.1374</b>	<b>0.0617</b>	<b>8.7412</b>	<b>3.5842</b>	<b>12.3254</b>	<b>3.6068</b>	<b>3.2975</b>	<b>6.9043</b>		<b>6,414.9807</b>	<b>6,414.9807</b>	<b>1.9350</b>			<b>6,455.6154</b>

### 3.4 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	1.3989	21.7633	17.2926	0.0559	1.3061	0.3121	1.6181	0.3576	0.2870	0.6446		5,631.8805	5,631.8805	0.0423		5,632.7682
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	0.0927	0.1243	1.3028	2.7400e-003	0.2236	2.1100e-003	0.2257	0.0593	1.9400e-003	0.0612		232.0062	232.0062	0.0134		232.2872
<b>Total</b>	<b>1.4916</b>	<b>21.8876</b>	<b>18.5954</b>	<b>0.0587</b>	<b>1.5296</b>	<b>0.3142</b>	<b>1.8438</b>	<b>0.4169</b>	<b>0.2890</b>	<b>0.7059</b>		<b>5,863.8867</b>	<b>5,863.8867</b>	<b>0.0557</b>		<b>5,865.0554</b>

#### 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					3.9335	0.0000	3.9335	1.6231	0.0000	1.6231			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
<b>Total</b>	<b>6.4795</b>	<b>74.8137</b>	<b>49.1374</b>	<b>0.0617</b>	<b>3.9335</b>	<b>3.5842</b>	<b>7.5178</b>	<b>1.6231</b>	<b>3.2975</b>	<b>4.9206</b>	<b>0.0000</b>	<b>6,414.9807</b>	<b>6,414.9807</b>	<b>1.9350</b>		<b>6,455.6154</b>

### 3.4 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	1.3989	21.7633	17.2926	0.0559	1.3061	0.3121	1.6181	0.3576	0.2870	0.6446		5,631.8805	5,631.8805	0.0423		5,632.7682
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	0.0927	0.1243	1.3028	2.7400e-003	0.2236	2.1100e-003	0.2257	0.0593	1.9400e-003	0.0612		232.0062	232.0062	0.0134		232.2872
<b>Total</b>	<b>1.4916</b>	<b>21.8876</b>	<b>18.5954</b>	<b>0.0587</b>	<b>1.5296</b>	<b>0.3142</b>	<b>1.8438</b>	<b>0.4169</b>	<b>0.2890</b>	<b>0.7059</b>		<b>5,863.8867</b>	<b>5,863.8867</b>	<b>0.0557</b>		<b>5,865.0554</b>

### 3.5 Building Construction - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>		<b>1.9674</b>	<b>1.9674</b>		<b>1.8485</b>	<b>1.8485</b>		<b>2,669.2864</b>	<b>2,669.2864</b>	<b>0.6620</b>		<b>2,683.1890</b>

### 3.5 Building Construction - 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	1.4035	13.5456	18.6911	0.0330	0.9417	0.2088	1.1505	0.2679	0.1920	0.4599		3,297.7208	3,297.7208	0.0251			3,298.2482
Worker	1.7978	2.4118	25.2733	0.0532	4.3369	0.0410	4.3779	1.1502	0.0377	1.1879		4,500.9207	4,500.9207	0.2596			4,506.3721
<b>Total</b>	<b>3.2013</b>	<b>15.9573</b>	<b>43.9644</b>	<b>0.0862</b>	<b>5.2786</b>	<b>0.2498</b>	<b>5.5284</b>	<b>1.4181</b>	<b>0.2297</b>	<b>1.6478</b>		<b>7,798.6415</b>	<b>7,798.6415</b>	<b>0.2847</b>			<b>7,804.6202</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620			2,683.1890
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>		<b>1.9674</b>	<b>1.9674</b>		<b>1.8485</b>	<b>1.8485</b>	<b>0.0000</b>	<b>2,669.2864</b>	<b>2,669.2864</b>	<b>0.6620</b>			<b>2,683.1890</b>

### 3.5 Building Construction - 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	1.4035	13.5456	18.6911	0.0330	0.9417	0.2088	1.1505	0.2679	0.1920	0.4599		3,297.7208	3,297.7208	0.0251			3,298.2482
Worker	1.7978	2.4118	25.2733	0.0532	4.3369	0.0410	4.3779	1.1502	0.0377	1.1879		4,500.9207	4,500.9207	0.2596			4,506.3721
<b>Total</b>	<b>3.2013</b>	<b>15.9573</b>	<b>43.9644</b>	<b>0.0862</b>	<b>5.2786</b>	<b>0.2498</b>	<b>5.5284</b>	<b>1.4181</b>	<b>0.2297</b>	<b>1.6478</b>		<b>7,798.6415</b>	<b>7,798.6415</b>	<b>0.2847</b>			<b>7,804.6202</b>

### 3.5 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
<b>Total</b>	<b>3.1024</b>	<b>26.4057</b>	<b>18.1291</b>	<b>0.0268</b>		<b>1.7812</b>	<b>1.7812</b>		<b>1.6730</b>	<b>1.6730</b>		<b>2,639.8053</b>	<b>2,639.8053</b>	<b>0.6497</b>			<b>2,653.4490</b>



### 3.5 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	1.2777	12.3419	17.7285	0.0329	0.9421	0.1859	1.1280	0.2681	0.1710	0.4391		3,244.9997	3,244.9997	0.0243			3,245.5107
Worker	1.6121	2.1812	22.8054	0.0532	4.3369	0.0393	4.3762	1.1502	0.0362	1.1864		4,332.1574	4,332.1574	0.2399			4,337.1957
<b>Total</b>	<b>2.8898</b>	<b>14.5231</b>	<b>40.5340</b>	<b>0.0861</b>	<b>5.2790</b>	<b>0.2252</b>	<b>5.5042</b>	<b>1.4183</b>	<b>0.2072</b>	<b>1.6255</b>		<b>7,577.1571</b>	<b>7,577.1571</b>	<b>0.2643</b>			<b>7,582.7063</b>

#### 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
<b>Total</b>	<b>3.1024</b>	<b>26.4057</b>	<b>18.1291</b>	<b>0.0268</b>		<b>1.7812</b>	<b>1.7812</b>		<b>1.6730</b>	<b>1.6730</b>	<b>0.0000</b>	<b>2,639.8053</b>	<b>2,639.8053</b>	<b>0.6497</b>			<b>2,653.4490</b>

### 3.5 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	1.2777	12.3419	17.7285	0.0329	0.9421	0.1859	1.1280	0.2681	0.1710	0.4391		3,244.9997	3,244.9997	0.0243			3,245.5107
Worker	1.6121	2.1812	22.8054	0.0532	4.3369	0.0393	4.3762	1.1502	0.0362	1.1864		4,332.1574	4,332.1574	0.2399			4,337.1957
<b>Total</b>	<b>2.8898</b>	<b>14.5231</b>	<b>40.5340</b>	<b>0.0861</b>	<b>5.2790</b>	<b>0.2252</b>	<b>5.5042</b>	<b>1.4183</b>	<b>0.2072</b>	<b>1.6255</b>		<b>7,577.1571</b>	<b>7,577.1571</b>	<b>0.2643</b>			<b>7,582.7063</b>

### 3.6 Architectural Coating - 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						
Archit. Coating	65.8561					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332			282.1449
<b>Total</b>	<b>66.2245</b>	<b>2.3722</b>	<b>1.8839</b>	<b>2.9700e-003</b>		<b>0.1966</b>	<b>0.1966</b>		<b>0.1966</b>	<b>0.1966</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0332</b>			<b>282.1449</b>

### 3.6 Architectural Coating - 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	0.3614	0.4848	5.0807	0.0107	0.8719	8.2500e-003	0.8801	0.2312	7.5800e-003	0.2388		904.8243	904.8243	0.0522			905.9202
<b>Total</b>	<b>0.3614</b>	<b>0.4848</b>	<b>5.0807</b>	<b>0.0107</b>	<b>0.8719</b>	<b>8.2500e-003</b>	<b>0.8801</b>	<b>0.2312</b>	<b>7.5800e-003</b>	<b>0.2388</b>		<b>904.8243</b>	<b>904.8243</b>	<b>0.0522</b>			<b>905.9202</b>

#### 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	65.8561					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332			282.1449
<b>Total</b>	<b>66.2245</b>	<b>2.3722</b>	<b>1.8839</b>	<b>2.9700e-003</b>		<b>0.1966</b>	<b>0.1966</b>		<b>0.1966</b>	<b>0.1966</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0332</b>			<b>282.1449</b>

### 3.6 Architectural Coating - 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	0.3614	0.4848	5.0807	0.0107	0.8719	8.2500e-003	0.8801	0.2312	7.5800e-003	0.2388		904.8243	904.8243	0.0522			905.9202
<b>Total</b>	<b>0.3614</b>	<b>0.4848</b>	<b>5.0807</b>	<b>0.0107</b>	<b>0.8719</b>	<b>8.2500e-003</b>	<b>0.8801</b>	<b>0.2312</b>	<b>7.5800e-003</b>	<b>0.2388</b>		<b>904.8243</b>	<b>904.8243</b>	<b>0.0522</b>			<b>905.9202</b>

### 3.6 Architectural Coating - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	65.8561					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
<b>Total</b>	<b>66.1884</b>	<b>2.1850</b>	<b>1.8681</b>	<b>2.9700e-003</b>		<b>0.1733</b>	<b>0.1733</b>		<b>0.1733</b>	<b>0.1733</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0297</b>			<b>282.0721</b>

### 3.6 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	0.3241	0.4385	4.5846	0.0107	0.8719	7.9000e-003	0.8798	0.2312	7.2800e-003	0.2385		870.8976	870.8976	0.0482			871.9105
<b>Total</b>	<b>0.3241</b>	<b>0.4385</b>	<b>4.5846</b>	<b>0.0107</b>	<b>0.8719</b>	<b>7.9000e-003</b>	<b>0.8798</b>	<b>0.2312</b>	<b>7.2800e-003</b>	<b>0.2385</b>		<b>870.8976</b>	<b>870.8976</b>	<b>0.0482</b>			<b>871.9105</b>

#### 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	65.8561					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
<b>Total</b>	<b>66.1884</b>	<b>2.1850</b>	<b>1.8681</b>	<b>2.9700e-003</b>		<b>0.1733</b>	<b>0.1733</b>		<b>0.1733</b>	<b>0.1733</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0297</b>			<b>282.0721</b>

### 3.6 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	0.3241	0.4385	4.5846	0.0107	0.8719	7.9000e-003	0.8798	0.2312	7.2800e-003	0.2385		870.8976	870.8976	0.0482			871.9105
<b>Total</b>	<b>0.3241</b>	<b>0.4385</b>	<b>4.5846</b>	<b>0.0107</b>	<b>0.8719</b>	<b>7.9000e-003</b>	<b>0.8798</b>	<b>0.2312</b>	<b>7.2800e-003</b>	<b>0.2385</b>		<b>870.8976</b>	<b>870.8976</b>	<b>0.0482</b>			<b>871.9105</b>

### 3.7 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
<b>Total</b>	<b>1.9074</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>		<b>1.1384</b>	<b>1.1384</b>		<b>1.0473</b>	<b>1.0473</b>		<b>2,281.0588</b>	<b>2,281.0588</b>	<b>0.6989</b>			<b>2,295.7360</b>

### 3.7 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	0.0623	0.0843	0.8817	2.0600e-003	0.1677	1.5200e-003	0.1692	0.0445	1.4000e-003	0.0459		167.4803	167.4803	9.2800e-003			167.6751
<b>Total</b>	<b>0.0623</b>	<b>0.0843</b>	<b>0.8817</b>	<b>2.0600e-003</b>	<b>0.1677</b>	<b>1.5200e-003</b>	<b>0.1692</b>	<b>0.0445</b>	<b>1.4000e-003</b>	<b>0.0459</b>		<b>167.4803</b>	<b>167.4803</b>	<b>9.2800e-003</b>			<b>167.6751</b>

#### 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
<b>Total</b>	<b>1.9074</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>		<b>1.1384</b>	<b>1.1384</b>		<b>1.0473</b>	<b>1.0473</b>	<b>0.0000</b>	<b>2,281.0588</b>	<b>2,281.0588</b>	<b>0.6989</b>			<b>2,295.7360</b>

### 3.7 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	0.0623	0.0843	0.8817	2.0600e-003	0.1677	1.5200e-003	0.1692	0.0445	1.4000e-003	0.0459		167.4803	167.4803	9.2800e-003		167.6751
<b>Total</b>	<b>0.0623</b>	<b>0.0843</b>	<b>0.8817</b>	<b>2.0600e-003</b>	<b>0.1677</b>	<b>1.5200e-003</b>	<b>0.1692</b>	<b>0.0445</b>	<b>1.4000e-003</b>	<b>0.0459</b>		<b>167.4803</b>	<b>167.4803</b>	<b>9.2800e-003</b>		<b>167.6751</b>

### 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	0.5287	1.2161	5.0144	0.0107	0.7244	0.0165	0.7409	0.1937	0.0151	0.2089		915.4680	915.4680	0.0390		916.2874
Unmitigated	0.5287	1.2161	5.0144	0.0107	0.7244	0.0165	0.7409	0.1937	0.0151	0.2089		915.4680	915.4680	0.0390		916.2874



### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Place of Worship	99.40	124.78	159.95	238,179	238,179
<b>Total</b>	<b>99.40</b>	<b>124.78</b>	<b>159.95</b>	<b>238,179</b>	<b>238,179</b>

### 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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Enclosed Parking Structure	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Place of Worship	16.60	8.40	6.90	0.00	95.00	5.00	64	25	11

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.532559	0.058242	0.178229	0.125155	0.038934	0.006273	0.016761	0.032323	0.002478	0.003154	0.003685	0.000544	0.001663

### 5.0 Energy Detail

#### 5.1 Fleet Mix

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
NaturalGas Unmitigated	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057

### 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					
Place of Worship	1037.53	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0112</b>	<b>0.1017</b>	<b>0.0854</b>	<b>6.1000e-004</b>		<b>7.7300e-003</b>	<b>7.7300e-003</b>		<b>7.7300e-003</b>	<b>7.7300e-003</b>		<b>122.0629</b>	<b>122.0629</b>	<b>2.3400e-003</b>	<b>2.2400e-003</b>	<b>122.8057</b>

### 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					
Place of Worship	1.03753	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003		122.0629	122.0629	2.3400e-003	2.2400e-003	122.8057
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0112</b>	<b>0.1017</b>	<b>0.0854</b>	<b>6.1000e-004</b>		<b>7.7300e-003</b>	<b>7.7300e-003</b>		<b>7.7300e-003</b>	<b>7.7300e-003</b>		<b>122.0629</b>	<b>122.0629</b>	<b>2.3400e-003</b>	<b>2.2400e-003</b>	<b>122.8057</b>

### 6.0 Area Detail

#### 6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive 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	24.1505	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
Unmitigated	24.1505	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003

### 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	5.8639					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	18.2863					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.8000e-004	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
<b>Total</b>	<b>24.1505</b>	<b>4.0000e-005</b>	<b>3.9800e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>8.3800e-003</b>	<b>8.3800e-003</b>	<b>2.0000e-005</b>		<b>8.8700e-003</b>

#### 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	5.8639					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	18.2863					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.8000e-004	4.0000e-005	3.9800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.3800e-003	8.3800e-003	2.0000e-005		8.8700e-003
<b>Total</b>	<b>24.1505</b>	<b>4.0000e-005</b>	<b>3.9800e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>8.3800e-003</b>	<b>8.3800e-003</b>	<b>2.0000e-005</b>		<b>8.8700e-003</b>

### 7.0 Water Detail

## 7.1 Mitigation Measures Water

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

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**Exhaust Emission Factors - OFFROAD2007**

Equipment	Fuel Type	MaxHP	ROG (lbs/hr)	NOX (lbs/hr)	CO (lbs/hr)	SO2 (lbs/hr)	PM (lbs/hr)	CO2 (lbs/hr)	CH4 (lbs/hr)
Backhoe	Diesel	120	5.29E-02	3.54E-01	3.46E-01	6.06E-04	2.56E-02	5.17E+01	4.77E-03

For offroad diesel internal combustion, total particulate matter = PM10, while PM2.5 is 0.92 (92%) of PM10 (CARB, CEIDARS, 2007).

**GHG Global Warming Potential**

CO2	1
CH4	25
N2O	298

Based on 100 Yr GWP from IPCC Fourth Assessment, 2007

Note: 1 ton (short, US) = 0.90718474 metric ton

Equipment	# Units	Daily Hours	ROG (lbs/day)	NOX (lbs/day)	CO (lbs/day)	SO2 (lbs/day)	PM (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	CO2e (mt/day)
Backhoe	1	4	<b>0.21</b>	<b>1.42</b>	<b>1.38</b>	<b>0.00</b>	<b>0.10</b>	206.73	0.02	0.09
			ROG (tons/year)	NOX (tons/year)	CO (tons/year)	SO2 (tons/year)	PM (tons/year)	CO2 (tons/year)	CH4 (tons/year)	CO2e (mt/year)
			0.04	0.26	0.25	0.00	0.02	37.73	0.00	<b>34.30</b>