AIR QUALITY and GHG IMPACT ANALYSES

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CLIMATE AND METEOROLOGY

REGIONAL CLIMATE

The North Pacific high-pressure cell is the dominant climatic influence over the eastern North Pacific Ocean, particularly during the summer months. This high-pressure cell produces a predominantly northwesterly flow of maritime air over the California coastal waters. During the winter, the Pacific High weakens and moves south, resulting in weaker and less persistent northwesterly winds along the California coast than in the warmer half of the year.

As the air mass approaches the coast of California, this large-scale circulation pattern is modified by local influences. The differential heating between the desert and the adjacent Pacific Ocean modifies the prevailing winds, enhancing them during the warmer half of the year and weakening the winds during the colder portion. On a local and sub-regional basis, the airflow in California is channeled by its mountain ranges and valleys. The coastal mountain ranges limit the flow of maritime air into the interior of California. This transition from a cool and damp marine environment to a dry and warm continental climate therefore occurs over a fairly short distance.

SOUTH COAST AIR BASIN

The South Coast Air Basin (SCAB) is a 6,600 square mile coastal plain bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Basin-wide conditions are characterized by warm summers, mild winters, infrequent rainfall, moderate onshore daytime breezes, and moderate humidity levels.

All seasons generally exhibit onshore flows during the day and offshore flows at night, after the land cools below the temperature of the ocean. The likelihood of strong offshore flows, including Santa Ana winds, is greater during winter than during summer (California Air Resources Board [ARB] 1984).

The topography and climate of Southern California combine to produce unhealthful air quality in the SCAB. Low temperature inversions, light winds, shallow vertical mixing, and extensive sunlight, in conjunction with topographical features such as adjacent mountain ranges that hinder dispersion of air pollutants, combine to create degraded quality, especially in inland valleys of the basin.

AIR QUALITY SETTING

AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Table 1

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards** [1]		**National Standards** [2]		
		Concentration [3]	**Method** [4]	**Primary** [3,5]	**Secondary** [3,6]	**Method** [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

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Table 1 (continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

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

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

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

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

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

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

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

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

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

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

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

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Table 2
Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December, 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of the basin's non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. A new 8-hour ozone standard was adopted in 2015 after extensive analysis and public input. The adopted national 8-hour ozone standard is 0.07 ppm which matches the current California standard. It will require three years of ambient data collection, then 2 years of non-attainment findings and planning protocol adoption, then several years of plan development and approval. Final air quality plans for the new standard are likely to be adopted around 2022. Ultimate attainment of the new standard in ozone problem areas such as Southern California might be after 2030.

In 2010 a new federal one-hour primary standard for nitrogen dioxide (NO_2) was adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in the South Coast Air Basin, the California Air Resources Board has requested the EPA to designate the basin as being in attainment for this standard. The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant.

BASELINE AIR QUALITY

Existing and probable future levels of air quality in Gardena can be best inferred from ambient air quality measurements conducted by the South Coast Air Quality Management District (SCAQMD) at its Westchester Parkway or North Long Beach air monitoring stations. These stations measure both regional pollution levels such as Ozone, Carbon Monoxide, Nitrogen Dioxide and PM-2.5 dust (particulates). Table 3 summarizes the last four years of monitoring data from a composite of these data resources. The following conclusions can be drawn from this data:

a. Photochemical smog (ozone) levels rarely exceed standards. The 8-hour state ozone standard has been exceeded on eight days in the last four years and the 8-hour federal standard was exceeded only four times. The most recent ozone data from 2014 shows some minor "back-sliding" from more than a decade of progress. While ozone levels are still high, they are much lower than 10 to 20 years ago. Attainment of all clean air standards in the project vicinity is not likely to occur soon, but the severity and frequency of violations is expected to continue to slowly decline during the current decade

b. Measurements of carbon monoxide have shown very low baseline levels in comparison to the most stringent one- and eight-hour standards.

c. Respirable dust (PM-10) levels have not exceeded either the state standard or the federal PM-10 for the last four years. Year to year fluctuations of overall maximum 24-hour PM-10 levels seem to follow no discernable trend, though 2012 had the lowest maximum 24-hour concentration in recent history.

d. A substantial fraction of PM-10 is comprised of fine diameter particulates capable of being inhaled into deep lung tissue (PM-2.5). Standards have been violated on only seven days in the last four years. Year 2011 showed the fewest violations in recent years.

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Table 3
Air Quality Monitoring Summary (2011-2014)
(Estimated Number of Days Standards Were Exceeded)

Pollutant/Standard	2011	2012	2013	2014
Ozone				
1-Hour > 0.09 ppm (S)	0	1	1	1
8-Hour > 0.07 ppm (S)	0	1	1	6
8- Hour > 0.075 ppm (F)	0	0	1	3
Max. 1-Hour Conc. (ppm)	0.078	0.106	0.105	0.114
Max. 8-Hour Conc. (ppm)	0.067	0.075	0.081	0.080
Carbon Monoxide				
1-Hour > 20. ppm (S)	0	0	0	0
1-Hour > 9. ppm (S, F)	0	0	0	0
Max 8-Hour Conc. (ppm)	1.8	1.5	2.5	1.9
Nitrogen Dioxide				
1-Hour > 0.18 ppm (S)	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.098	0.077	0.078	0.087
Respirable Particulates (PM-10)				
24-Hour > 50 $\mu g/m^3$ (S)	0	0	0	0
24-Hour > 150 $\mu g/m^3$ (F)	0	0	0	0
Max. 24-Hr. Conc. ($\mu g/m^3$)	41.	31.	38.	46.
Fine Particulates (PM-2.5)				
24-Hour > 35 $\mu g/m^3$ (F)	1	4	2	2
Max. 24-Hr. Conc. ($\mu g/m^3$)	39.7	49.8	47.2	51.5

S=State Standard
F=Federal Standard

Source: South Coast AQMD Westchester Parkway Air Monitoring Station for Ozone, CO and NOx and PM-10
North Long Beach Monitoring Station for PM-2.5
data: www.arb.ca.gov/adam/

AIR QUALITY PLANNING

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised and approved over the past decade. The most current regional attainment emissions forecast for ozone precursors (ROG and NOx) and for carbon monoxide (CO) and for particulate matter are shown in Table 4. Substantial reductions in emissions of ROG, NOx and CO are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM-10 and PM-2.5 are forecast to slightly increase.

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 Air Quality Management Plan (AQMP) was approved by the EPA in 2004. The AQMP outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM-10) by 2006. The 2003 AQMP was based upon the federal one-hour ozone standard which was revoked late in 2005 and replaced by an 8-hour federal standard. Because of the revocation of the hourly standard, a new air quality planning cycle was initiated.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the one-hour ozone standard attainment strategies to the 8-hour standard. The attainment date was anticipated to "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal PM-2.5 standard.

Because projected attainment by 2021 requires control technologies that do not exist yet, the SCAQMD requested a voluntary "bump-up" from a "severe non-attainment" area to an "extreme non-attainment" designation for ozone. The extreme designation will allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on "black-box" measures, EPA would have been required to impose sanctions on the region had the bump-up request not been approved. In April 2010, the EPA approved the change in the non-attainment designation from "severe-17" to "extreme." This reclassification sets a later attainment deadline (2024), but also requires the air basin to adopt even more stringent emissions controls.

Table 4

South Coast Air Basin Emissions Forecasts (Emissions in tons/day)

Pollutant	2012[a]	2015[b]	2020[b]	2025[b]	2030
NOx	512	451	357	289	266
VOC	466	429	400	393	393
PM-10	154	155	161	165	170
PM-2.5	68	67	67	68	170

[a]2012 Base Year.
[b]With current emissions reduction programs and adopted growth forecasts.
Source: California Air Resources Board, 2013 Almanac of CEPAM

In other air quality attainment plan reviews, EPA has disapproved part of the SCAB PM-2.5 attainment plan included in the AQMP. EPA has stated that the current attainment plan relies on PM-2.5 control regulations that have not yet been approved or implemented. It is expected that a number of rules that are pending approval will remove the identified deficiencies. If these issues are not resolved within the next several years, federal funding sanctions for transportation projects could result. The 2012 AQMP included in the ARB submittal to EPA as part of the California State Implementation Plan (SIP) is expected to remedy identified PM-2.5 planning deficiencies.

The federal Clean Air Act requires that non-attainment air basins have EPA approved attainment plans in place. This requirement includes the federal one-hour ozone standard even though that standard was revoked almost ten years ago. There was no approved attainment plan for the one-hour federal standard at the time of revocation. Through a legal quirk, the SCAQMD is now required to develop an AQMP for the long since revoked one-hour federal ozone standard. Because the 2012 AQMP contains a number of control measures for the 8-hour ozone standard that are equally effective for one-hour levels, the 2012 AQMP is believed to satisfy hourly attainment planning requirements.

AQMPs are required to be updated every three years. The 2012 AQMP was adopted in early 2013. An updated AQMP must therefore be adopted in 2016. Planning for the 2016 AQMP is currently on-going. The current attainment deadlines for all federal non-attainment pollutants are now as follows:

8-hour ozone (70 ppb)	2037
Annual PM-2.5 (12 μg/m^3)	2025
8-hour ozone (80 ppb)	2024 (old standard)
8-hour ozone (75 ppb)	2032 (current standard)
1-hour ozone (120 ppb)	2032 (rescinded standard)
24-hour PM-2.5 (35 μg/m^3)	2019

The key challenge is that NOx emission levels, as a critical ozone precursor pollutant, are forecast to continue to exceed the levels that would allow the above deadlines to be met. Unless additional NOx control measures are adopted and implemented, attainment goals may not be met.

The proposed project does not directly relate to the AQMP in that there are no specific air quality programs or regulations governing residential projects. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of planned growth is determined. The SCAQMD, however, while acknowledging that the AQMP is a growth-accommodating document, does not favor designating regional impacts as less-than-significant just because the proposed development is consistent with regional growth projections. Air quality impact significance for the proposed project has therefore been analyzed on a project-specific basis.

AIR QUALITY IMPACT

STANDARDS OF SIGNIFICANCE

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan.

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

c. Results in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

d. Exposes sensitive receptors to substantial pollutant concentrations.

e. Creates objectionable odors affecting a substantial number of people.

Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust during project construction.

Secondary Pollutants

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based

upon a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines.

Table 5
Daily Emissions Thresholds

Pollutant	Construction	Operations
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

Additional Indicators

In its CEQA Handbook, the SCAQMD also states that additional indicators should be used as screening criteria to determine the need for further analysis with respect to air quality. The additional indicators are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation

- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP and in other than planned locations for the project's build-out year.

- Project could generate vehicle trips that cause a CO hot spot.

CONSTRUCTION ACTIVITY IMPACTS

CalEEMod was developed by the SCAQMD to provide a model by which to calculate both construction emissions and operational emissions from a variety of land use projects. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions.

Although exhaust emissions will result from on and off-site equipment, the exact types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Estimated construction emissions were modeled using CalEEMod2016.3.1 to identify maximum daily emissions for each pollutant during project construction.

The proposed project entails construction of 46 condo/townhomes. Construction was modeled in CalEEMod2016.3.1 using default construction equipment and schedule for a project of this size as shown in Table 6.

Table 6

Construction Activity Equipment Fleet

Phase Name and Duration	Equipment
Demolition (20 days) 1,500 tons debris	1 Concrete Saw
	1 Dozer
	3 Loader/Backhoes
Grading (6 days) 4,500 CY Import	1 Grader
	1 Dozer
	2 Loader/Backhoes
Construction (220 days)	1 Crane
	1 Loader/Backhoe
	2 Forklifts
	1 Gen Set
	3 Welders
Paving (10 days)	1 Paver
	1 Cement Mixer
	1 Loader/Backhoe
	1 Paving Equipment
	2 Rollers

Utilizing this indicated equipment fleet and durations shown in Table 6 the following worst case daily construction emissions are calculated by CalEEMod and are listed in Table 7.

Table 7
Construction Activity Emissions
Maximum Daily Emissions (pounds/day)

Maximal Construction Emissions	ROG	NOx	CO	SO_2	PM-10	PM-2.5
2017						
Unmitigated	28.2	58.0	18.4	0.1	9.9	5.2
Mitigated	28.2	58.0	18.4	0.1	6.2	3.4
SCAQMD Thresholds	75	100	550	150	150	55

Peak daily construction activity emissions are estimated be below SCAQMD CEQA thresholds without the need for added mitigation. The only model-based mitigation measured applied for this project was:

- Water exposed dirt surfaces two times per day to minimize the generation of fugitive dust generation during grading.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. The toxicity of diesel exhaust is evaluated relative to a 24-hour per day, 365 days per year, 70-year lifetime exposure. The SCAQMD does not generally require the analysis of construction-related diesel emissions relative to health risk due to the short period for which the majority of diesel exhaust would occur. Health risk analyses are typically assessed over a 9-, 30-, or 70-year timeframe and not over a relatively brief construction period due to the lack of health risk associated with such a brief exposure.

LOCALIZED SIGNIFICANCE THRESHOLDS

The SCAQMD has developed analysis parameters to evaluate ambient air quality on a local level in addition to the more regional emissions-based thresholds of significance. These analysis elements are called Localized Significance Thresholds (LSTs). LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative 1-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

Use of an LST analysis for a project is optional. For the proposed project, the primary source of possible LST impact would be during construction. LSTs are applicable for a sensitive receptor where it is possible that an individual could remain for 24 hours such as a residence, hospital or convalescent facility.

LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NOx), carbon monoxide (CO), and particulate matter (PM-10 and PM-2.5). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based

on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor.

LST screening tables are available for 25, 50, 100, 200 and 500 meter source-receptor distances. For this project the nearest sensitive receptors are the residential uses adjacent to the project site such that the most conservative 25 meter distance was modeled.

The SCAQMD has issued guidance on applying CalEEMod to LSTs. LST pollutant screening level concentration data is currently published for 1, 2 and 5 acre sites for varying distances. For this project, the most stringent thresholds for a 1 acre site were applied.

The following thresholds and emissions in Table 8 are therefore determined (pounds per day):

Table 8
LST and Project Emissions (pounds/day)

LST 1.0 acre/25 meters SW Coastal LA County	**CO**	**NOx**	**PM-10**	**PM-2.5**
LST Threshold	664	91	5	3
Max On-Site Emissions*				
Unmitigated	18	32	8	5
Mitigated	18	32	4	3
Exceeds Threshold?	No	No	No	No

CalEEMod Output in Appendix
*Excludes on-road travel for truck haul (demo and grading), employee commuting and vendor deliveries

LSTs were compared to the maximum daily construction activities. As seen above, emissions will meet the LST for construction thresholds with the application of the following mitigation measure:

- Exposed surfaces will be watered two times per day during grading activities

LST impacts are less-than-significant with the application of this mitigation measure.

OPERATIONAL IMPACTS

Operational emissions were calculated using CalEEMod2016.3.1 for an assumed project build-out year of 2018 as a target for full occupancy. The project would generate 267 daily trips. In addition to mobile sources from vehicles, general development causes smaller amounts of "area source" air pollution to be generated from on-site energy consumption (primarily space heating, hot water and landscaping). These sources represent a minimal percentage of the total project NOx and CO burdens, and a few percent other pollutants. The inclusion of such emissions adds negligibly to the total significant project-related emissions burden as shown in Table 9.

Table 9
Daily Operational Impacts

	Operational Emissions (lbs/day)					
Source	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
Area	13.2	1.0	27.2	0.1	3.5	3.5
Energy	0.0	0.2	0.1	0.0	0.0	0.0
Mobile	0.6	2.8	7.9	0.0	2.0	0.6
Total	**13.8**	**4.1**	**35.2**	**0.1**	**5.5**	**4.1**
SCAQMD Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod2016.3.1 Output in Appendix

As seen in Table 9 the project would not cause any operational emissions to exceed their respective SCAQMD CEQA significance thresholds. Operational emission impacts are judged to be less than significant. No impact mitigation for operational activity emissions is considered necessary to support this finding.

CONSTRUCTION EMISSIONS MINIMIZATION

Construction activities are not anticipated to cause dust emissions to exceed SCAQMD CEQA thresholds. Nevertheless, emissions minimization through enhanced dust control measures is recommended for use because of the non-attainment status of the air basin and proximity to existing residential uses. Recommended measures include:

Fugitive Dust Control

- Apply soil stabilizers or moisten inactive areas.
- Water exposed surfaces as needed to avoid visible dust leaving the construction site (typically 2-3 times/day).
- Cover all stock piles with tarps at the end of each day or as needed.
- Provide water spray during loading and unloading of earthen materials.
- Minimize in-out traffic from construction zone
- Cover all trucks hauling dirt, sand, or loose material and require all trucks to maintain at least two feet of freeboard
- Sweep streets daily if visible soil material is carried out from the construction site

Similarly, ozone precursor emissions (ROG and NOx) are calculated to be below SCAQMD CEQA thresholds. However, because of the regional non-attainment for photochemical smog, the use of reasonably available control measures for diesel exhaust is recommended. Combustion emissions control options include:

Exhaust Emissions Control

- Utilize well-tuned off-road construction equipment.
- Establish a preference for contractors using Tier 3 or better rated heavy equipment.
- Enforce 5-minute idling limits for both on-road trucks and off-road equipment.

GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation in some parts of the infrared spectrum. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. For purposes of planning and regulation, Section 15364.5 of the California Code of Regulations defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been

developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

THRESHOLDS OF SIGNIFICANCE

In response to the requirements of SB97, the State Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the California Code of Regulations in March, 2010. The CEQA Appendix G guidelines were modified to include GHG as a required analysis element. A project would have a potentially significant impact if it:

- Generates GHG emissions, directly or indirectly, that may have a significant impact on the environment, or,

- Conflicts with an applicable plan, policy or regulation adopted to reduce GHG emissions.

Section 15064.4 of the Code specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of project-related GHG emissions, making a determination of significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency with substantial flexibility.

Emissions identification may be quantitative, qualitative or based on performance standards. CEQA guidelines allow the lead agency to "select the model or methodology it considers most appropriate." The most common practice for transportation/combustion GHG emissions quantification is to use a computer model such as CalEEMod, as was used in the ensuing analysis.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons (MT) CO_2 equivalent/year CO_2e. In September 2010, the SCAQMD CEQA Significance Thresholds GHG Working Group released revisions which recommended a threshold of 3,000 MT CO_2e for all land use projects. This 3,000 MT/year recommendation has been used as a guideline for this analysis. In the absence of an adopted numerical threshold of significance, project related GHG emissions in excess of the guideline level are presumed to trigger a requirement for enhanced GHG reduction at the project level.

PROJECT RELATED GHG EMISSIONS GENERATION

Construction Activity GHG Emissions

The project is assumed to require less than one year for construction. During project construction, the CalEEMod2016.3.1 computer model predicts that the construction activities will generate the annual CO_2e emissions identified in Table 10.

Table 10
Construction Emissions (Metric Tons CO_2e)

	CO_2e
Year 2017	357.0
Amortized	**11.9**

CalEEMod Output provided in appendix

SCAQMD GHG emissions policy from construction activities is to amortize emissions over a 30-year lifetime. The amortized level is also provided. GHG impacts from construction are considered individually less-than-significant.

Project Operational GHG Emissions

The input assumptions for operational GHG emissions calculations and the GHG conversion from consumption to annual regional CO_2e emissions are summarized in the CalEEMod2016.3.1 output files found in the appendix of this report.

The total operational and annualized construction emissions for the proposed project are identified in Table 11.

Table 11
Proposed Uses Operational Emissions

Consumption Source	
Area Sources	15.5
Energy Utilization	129.6
Mobile Source	396.1
Waste	10.6
Water	23.3
Construction	11.9
Total	**587.0**
Guideline Threshold	3,000
Exceeds Threshold?	No

Total project GHG emissions would be substantially below the proposed significance threshold of 3,000 MT suggested by the SCAQMD. Hence, the project would not result in generation of a significant level of greenhouse gases.

CONSISTENCY WITH GHG PLANS, PROGRAMS AND POLICIES

In 2015, the City of Gardena, in conjunction with South Bay Cities Council of Governments, with funding by Southern California Edison (SCE) and the Southern California Gas Company, adopted an energy efficiency climate action plan (EECAP). Although the EECAP is heavily focused on the GHG reduction options applicable to municipal government, it contains a variety of discretionary actions available to development within the City of Gardena. The EECAP incorporates a limited number of goals and associated implementation measures that are directly applicable to an individual development project. Because of the relatively small scope of the proposed project (46 townhome/condo units), the opportunity to implement substantial GHG reduction measures on a project specific basis is equally small. The EECAP goals/measures for small developments that would insure consistency with GHG plans, programs and policies include:

- Exceed energy efficiency Title 24 minimums
- Increase water efficiency through SBX7-7
- Re-use recycled/gray water and harvest rainwater
- Encourage tree planting for shade and carbon sequestration
- Use light reflecting ground surfaces and roofs

Because GHG emissions significance thresholds would not be exceeded by the limited scope of the proposed project, these measures are expressed as recommendations rather than as mandatory mitigation measures. However, the complete disregard for these measures could be construed as inconsistency with the EECAP in any CEQA finding.

CALEEMOD2016.3.1 COMPUTER MODEL OUTPUT

- DAILY EMISISONS
- ANNUAL EMISSIONS

Gardena Townhomes

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	46.00	Dwelling Unit	2.31	46,000.00	132

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - modeled site size 2.31 acres

Construction Phase - Demo: 20 days, Grading: 6 days, Construction: 220 days, Paving: 10 days

Grading -

Demolition - 1500 tons asphat removal

Construction Off-road Equipment Mitigation -

Area Mitigation -

Gardena Townhomes - South Coast Air Basin, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	PhaseEndDate	1/11/2018	12/31/2017
tblConstructionPhase	PhaseStartDate	12/29/2017	12/15/2017
tblGrading	MaterialImported	0.00	4,500.00
tblLandUse	LotAcreage	2.88	2.31
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripNumber	563.00	562.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	28.2900	58.0438	18.3566	0.0972	8.3850	1.6625	9.8575	3.8583	1.5546	5.2193	0.0000	10,371.6449	10,371.6449	1.2446	0.0000	10,402.7602
Maximum	**28.2900**	**58.0438**	**18.3566**	**0.0972**	**8.3850**	**1.6625**	**9.8575**	**3.8583**	**1.5546**	**5.2193**	**0.0000**	**10,371.6449**	**10,371.6449**	**1.2446**	**0.0000**	**10,402.7602**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	28.2900	58.0438	18.3566	0.0972	4.7346	1.6625	6.2070	1.9991	1.5546	3.3601	0.0000	10,371.6449	10,371.6449	1.2446	0.0000	10,402.7602
Maximum	**28.2900**	**58.0438**	**18.3566**	**0.0972**	**4.7346**	**1.6625**	**6.2070**	**1.9991**	**1.5546**	**3.3601**	**0.0000**	**10,371.6449**	**10,371.6449**	**1.2446**	**0.0000**	**10,402.7602**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**43.54**	**0.00**	**37.03**	**48.19**	**0.00**	**35.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.1601	0.9986	27.2072	0.0599		3.5348	3.5348		3.5348	3.5348	430.8783	834.8334	1,265.7117	1.2917	0.0292	1,306.7184
Energy	0.0284	0.2424	0.1031	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.4337	309.4337	5.9300e-003	5.6700e-003	311.2725
Mobile	0.5837	2.8215	7.9307	0.0253	1.9411	0.0282	1.9693	0.5194	0.0265	0.5459		2,562.8888	2,562.8888	0.1331		2,566.2170
Total	**13.7722**	**4.0625**	**35.2411**	**0.0867**	**1.9411**	**3.5825**	**5.5236**	**0.5194**	**3.5809**	**4.1002**	**430.8783**	**3,707.1559**	**4,138.0342**	**1.4307**	**0.0349**	**4,184.2079**

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	1.1868	0.7309	4.1061	4.5800e-003		0.0764	0.0764		0.0764	0.0764	0.0000	883.5393	883.5393	0.0235	0.0161	888.9168
Energy	0.0284	0.2424	0.1031	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.4337	309.4337	5.9300e-003	5.6700e-003	311.2725
Mobile	0.5837	2.8215	7.9307	0.0253	1.9411	0.0282	1.9693	0.5194	0.0265	0.5459		2,562.8888	2,562.8888	0.1331		2,566.2170
Total	**1.7989**	**3.7948**	**12.1399**	**0.0314**	**1.9411**	**0.1242**	**2.0653**	**0.5194**	**0.1225**	**0.6419**	**0.0000**	**3,755.8618**	**3,755.8618**	**0.1626**	**0.0217**	**3,766.4063**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**86.94**	**6.59**	**65.55**	**63.79**	**0.00**	**96.53**	**62.61**	**0.00**	**96.58**	**84.35**	**100.00**	**-1.31**	**9.24**	**88.64**	**37.73**	**9.99**

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	1/2/2017	1/27/2017	5	20	
2	Grading	Grading	2/2/2017	2/9/2017	5	6	
3	Building Construction	Building Construction	2/10/2017	12/14/2017	5	220	
4	Paving	Paving	12/15/2017	12/28/2017	5	10	
5	Architectural Coating	Architectural Coating	12/15/2017	12/31/2017	5	11	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 93,150; Residential Outdoor: 31,050; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

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
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	33.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	148.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	562.00	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

Clean Paved Roads

3.2 Demolition - 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	2.7625	26.7594	15.5573	0.0241		1.6477	1.6477		1.5404	1.5404		2,421.4229	2,421.4229	0.6125		2,436.7347
Total	**2.7625**	**26.7594**	**15.5573**	**0.0241**		**1.6477**	**1.6477**		**1.5404**	**1.5404**		**2,421.4229**	**2,421.4229**	**0.6125**		**2,436.7347**

3.2 Demolition - 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	0.0773	2.5151	0.4828	5.9500e-003	0.1293	0.0137	0.1429	0.0354	0.0131	0.0485		642.6224	642.6224	0.0468		643.7931
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	0.0781	0.0575	0.7387	1.6400e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1100e-003	0.0397		162.9783	162.9783	6.1500e-003		163.1321
Total	**0.1553**	**2.5726**	**1.2215**	**7.5900e-003**	**0.2746**	**0.0149**	**0.2894**	**0.0740**	**0.0142**	**0.0881**		**805.6007**	**805.6007**	**0.0530**		**806.9252**

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	2.7625	26.7594	15.5573	0.0241		1.6477	1.6477		1.5404	1.5404	0.0000	2,421.4229	2,421.4229	0.6125		2,436.7347
Total	**2.7625**	**26.7594**	**15.5573**	**0.0241**		**1.6477**	**1.6477**		**1.5404**	**1.5404**	**0.0000**	**2,421.4229**	**2,421.4229**	**0.6125**		**2,436.7347**

3.2 Demolition - 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	0.0773	2.5151	0.4828	5.9500e-003	0.1293	0.0137	0.1429	0.0354	0.0131	0.0485		642.6224	642.6224	0.0468		643.7931
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	0.0781	0.0575	0.7387	1.6400e-003	0.1453	1.2100e-003	0.1465	0.0385	1.1100e-003	0.0397		162.9783	162.9783	6.1500e-003		163.1321
Total	**0.1553**	**2.5726**	**1.2215**	**7.5900e-003**	**0.2746**	**0.0149**	**0.2894**	**0.0740**	**0.0142**	**0.0881**		**805.6007**	**805.6007**	**0.0530**		**806.9252**

3.3 Grading - 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					
Fugitive Dust					6.6372	0.0000	6.6372	3.3803	0.0000	3.3803			0.0000			0.0000
Off-Road	2.3212	26.1643	10.7753	0.0206		1.2985	1.2985		1.1947	1.1947		2,112.1822	2,112.1822	0.6472		2,128.3614
Total	**2.3212**	**26.1643**	**10.7753**	**0.0206**	**6.6372**	**1.2985**	**7.9357**	**3.3803**	**1.1947**	**4.5750**		**2,112.1822**	**2,112.1822**	**0.6472**		**2,128.3614**

3.3 Grading - 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	0.9778	31.8353	6.1109	0.0753	1.6361	0.1730	1.8091	0.4483	0.1655	0.6138		8,134.0948	8,134.0948	0.5927		8,148.9125
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	0.0601	0.0442	0.5682	1.2600e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		125.3679	125.3679	4.7300e-003		125.4862
Total	**1.0378**	**31.8795**	**6.6792**	**0.0766**	**1.7479**	**0.1739**	**1.9218**	**0.4780**	**0.1664**	**0.6443**		**8,259.4627**	**8,259.4627**	**0.5974**		**8,274.3987**

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					2.9867	0.0000	2.9867	1.5212	0.0000	1.5212			0.0000			0.0000
Off-Road	2.3212	26.1643	10.7753	0.0206		1.2985	1.2985		1.1947	1.1947	0.0000	2,112.1822	2,112.1822	0.6472		2,128.3614
Total	**2.3212**	**26.1643**	**10.7753**	**0.0206**	**2.9867**	**1.2985**	**4.2853**	**1.5212**	**1.1947**	**2.7158**	**0.0000**	**2,112.1822**	**2,112.1822**	**0.6472**		**2,128.3614**

3.3 Grading - 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	0.9778	31.8353	6.1109	0.0753	1.6361	0.1730	1.8091	0.4483	0.1655	0.6138		8,134.0948	8,134.0948	0.5927		8,148.9125
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	0.0601	0.0442	0.5682	1.2600e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		125.3679	125.3679	4.7300e-003		125.4862
Total	**1.0378**	**31.8795**	**6.6792**	**0.0766**	**1.7479**	**0.1739**	**1.9218**	**0.4780**	**0.1664**	**0.6443**		**8,259.4627**	**8,259.4627**	**0.5974**		**8,274.3987**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.3418	23.0287	16.3102	0.0250		1.4697	1.4697		1.4068	1.4068		2,347.6211	2,347.6211	0.5228		2,360.6922
Total	**3.3418**	**23.0287**	**16.3102**	**0.0250**		**1.4697**	**1.4697**		**1.4068**	**1.4068**		**2,347.6211**	**2,347.6211**	**0.5228**		**2,360.6922**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0245	0.6470	0.1712	1.3000e-003	0.0320	5.6000e-003	0.0376	9.2100e-003	5.3600e-003	0.0146		138.9288	138.9288	0.0101		139.1804
Worker	0.1982	0.1459	1.8752	4.1600e-003	0.3689	3.0600e-003	0.3719	0.0978	2.8200e-003	0.1007		413.7141	413.7141	0.0156		414.1046
Total	**0.2226**	**0.7929**	**2.0464**	**5.4600e-003**	**0.4009**	**8.6600e-003**	**0.4095**	**0.1070**	**8.1800e-003**	**0.1152**		**552.6428**	**552.6428**	**0.0257**		**553.2850**

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	3.3418	23.0287	16.3102	0.0250		1.4697	1.4697		1.4068	1.4068	0.0000	2,347.6211	2,347.6211	0.5228		2,360.6922
Total	**3.3418**	**23.0287**	**16.3102**	**0.0250**		**1.4697**	**1.4697**		**1.4068**	**1.4068**	**0.0000**	**2,347.6211**	**2,347.6211**	**0.5228**		**2,360.6922**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0245	0.6470	0.1712	1.3000e-003	0.0320	5.6000e-003	0.0376	9.2100e-003	5.3600e-003	0.0146		138.9288	138.9288	0.0101		139.1804
Worker	0.1982	0.1459	1.8752	4.1600e-003	0.3689	3.0600e-003	0.3719	0.0978	2.8200e-003	0.1007		413.7141	413.7141	0.0156		414.1046
Total	**0.2226**	**0.7929**	**2.0464**	**5.4600e-003**	**0.4009**	**8.6600e-003**	**0.4095**	**0.1070**	**8.1800e-003**	**0.1152**		**552.6428**	**552.6428**	**0.0257**		**553.2850**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6589	16.6726	12.2090	0.0178		1.0334	1.0334		0.9519	0.9519		1,802.2682	1,802.2682	0.5420		1,815.8177
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6589**	**16.6726**	**12.2090**	**0.0178**		**1.0334**	**1.0334**		**0.9519**	**0.9519**		**1,802.2682**	**1,802.2682**	**0.5420**		**1,815.8177**

3.5 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0901	0.0663	0.8524	1.8900e-003	0.1677	1.3900e-003	0.1691	0.0445	1.2800e-003	0.0458		188.0518	188.0518	7.1000e-003		188.2294
Total	**0.0901**	**0.0663**	**0.8524**	**1.8900e-003**	**0.1677**	**1.3900e-003**	**0.1691**	**0.0445**	**1.2800e-003**	**0.0458**		**188.0518**	**188.0518**	**7.1000e-003**		**188.2294**

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	1.6589	16.6726	12.2090	0.0178		1.0334	1.0334		0.9519	0.9519	0.0000	1,802.2682	1,802.2682	0.5420		1,815.8177
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6589**	**16.6726**	**12.2090**	**0.0178**		**1.0334**	**1.0334**		**0.9519**	**0.9519**	**0.0000**	**1,802.2682**	**1,802.2682**	**0.5420**		**1,815.8177**

3.5 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0901	0.0663	0.8524	1.8900e-003	0.1677	1.3900e-003	0.1691	0.0445	1.2800e-003	0.0458		188.0518	188.0518	7.1000e-003		188.2294
Total	**0.0901**	**0.0663**	**0.8524**	**1.8900e-003**	**0.1677**	**1.3900e-003**	**0.1691**	**0.0445**	**1.2800e-003**	**0.0458**		**188.0518**	**188.0518**	**7.1000e-003**		**188.2294**

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	26.1667					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		282.1909
Total	**26.4990**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.1909**

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	0.0420	0.0309	0.3978	8.8000e-004	0.0782	6.5000e-004	0.0789	0.0208	6.0000e-004	0.0214		87.7575	87.7575	3.3100e-003		87.8404
Total	**0.0420**	**0.0309**	**0.3978**	**8.8000e-004**	**0.0782**	**6.5000e-004**	**0.0789**	**0.0208**	**6.0000e-004**	**0.0214**		**87.7575**	**87.7575**	**3.3100e-003**		**87.8404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.1667					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		282.1909
Total	**26.4990**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.1909**

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	0.0420	0.0309	0.3978	8.8000e-004	0.0782	6.5000e-004	0.0789	0.0208	6.0000e-004	0.0214		87.7575	87.7575	3.3100e-003		87.8404
Total	**0.0420**	**0.0309**	**0.3978**	**8.8000e-004**	**0.0782**	**6.5000e-004**	**0.0789**	**0.0208**	**6.0000e-004**	**0.0214**		**87.7575**	**87.7575**	**3.3100e-003**		**87.8404**

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	0.5837	2.8215	7.9307	0.0253	1.9411	0.0282	1.9693	0.5194	0.0265	0.5459		2,562.8888	2,562.8888	0.1331		2,566.2170
Unmitigated	0.5837	2.8215	7.9307	0.0253	1.9411	0.0282	1.9693	0.5194	0.0265	0.5459		2,562.8888	2,562.8888	0.1331		2,566.2170

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	267.26	260.82	222.64	888,342	888,342
Total	267.26	260.82	222.64	888,342	888,342

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.548893	0.044275	0.199565	0.124385	0.017503	0.005874	0.020174	0.028962	0.001990	0.002015	0.004673	0.000702	0.000989

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0284	0.2424	0.1031	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.4337	309.4337	5.9300e-003	5.6700e-003	311.2725
NaturalGas Unmitigated	0.0284	0.2424	0.1031	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.4337	309.4337	5.9300e-003	5.6700e-003	311.2725

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					
Condo/Townhouse	2630.19	0.0284	0.2424	0.1031	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.4337	309.4337	5.9300e-003	5.6700e-003	311.2725
Total		**0.0284**	**0.2424**	**0.1031**	**1.5500e-003**		**0.0196**	**0.0196**		**0.0196**	**0.0196**		**309.4337**	**309.4337**	**5.9300e-003**	**5.6700e-003**	**311.2725**

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					
Condo/Townhouse	2.63019	0.0284	0.2424	0.1031	1.5500e-003		0.0196	0.0196		0.0196	0.0196		309.4337	309.4337	5.9300e-003	5.6700e-003	311.2725
Total		**0.0284**	**0.2424**	**0.1031**	**1.5500e-003**		**0.0196**	**0.0196**		**0.0196**	**0.0196**		**309.4337**	**309.4337**	**5.9300e-003**	**5.6700e-003**	**311.2725**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1868	0.7309	4.1061	4.5800e-003		0.0764	0.0764		0.0764	0.0764	0.0000	883.5393	883.5393	0.0235	0.0161	888.9168
Unmitigated	13.1601	0.9986	27.2072	0.0599		3.5348	3.5348		3.5348	3.5348	430.8783	834.8334	1,265.7117	1.2917	0.0292	1,306.7184

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0789					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9108					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	12.0537	0.9544	23.3934	0.0597		3.5139	3.5139		3.5139	3.5139	430.8783	828.0000	1,258.8783	1.2850	0.0292	1,299.7173
Landscaping	0.1168	0.0442	3.8139	2.0000e-004		0.0209	0.0209		0.0209	0.0209		6.8334	6.8334	6.7100e-003		7.0011
Total	**13.1601**	**0.9986**	**27.2072**	**0.0599**		**3.5348**	**3.5348**		**3.5348**	**3.5348**	**430.8783**	**834.8334**	**1,265.7117**	**1.2917**	**0.0292**	**1,306.7184**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0789					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9108					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0804	0.6868	0.2922	4.3800e-003		0.0555	0.0555		0.0555	0.0555	0.0000	876.7059	876.7059	0.0168	0.0161	881.9157
Landscaping	0.1168	0.0442	3.8139	2.0000e-004		0.0209	0.0209		0.0209	0.0209		6.8334	6.8334	6.7100e-003		7.0011
Total	**1.1868**	**0.7309**	**4.1061**	**4.5800e-003**		**0.0764**	**0.0764**		**0.0764**	**0.0764**	**0.0000**	**883.5393**	**883.5393**	**0.0235**	**0.0161**	**888.9168**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Gardena Townhomes

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	46.00	Dwelling Unit	2.31	46,000.00	132

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - modeled site size 2.31 acres

Construction Phase - Demo: 20 days, Grading: 6 days, Construction: 220 days, Paving: 10 days

Grading -

Demolition - 1500 tons asphat removal

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	PhaseEndDate	1/11/2018	12/31/2017
tblConstructionPhase	PhaseStartDate	12/29/2017	12/15/2017
tblGrading	MaterialImported	0.00	4,500.00
tblLandUse	LotAcreage	2.88	2.31
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripNumber	563.00	562.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5860	3.1917	2.3052	4.0500e-003	0.0723	0.1898	0.2621	0.0242	0.1810	0.2052	0.0000	355.3640	355.3640	0.0668	0.0000	357.0344
Maximum	**0.5860**	**3.1917**	**2.3052**	**4.0500e-003**	**0.0723**	**0.1898**	**0.2621**	**0.0242**	**0.1810**	**0.2052**	**0.0000**	**355.3640**	**355.3640**	**0.0668**	**0.0000**	**357.0344**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5860	3.1917	2.3052	4.0500e-003	0.0614	0.1898	0.2512	0.0186	0.1810	0.1996	0.0000	355.3637	355.3637	0.0668	0.0000	357.0341
Maximum	**0.5860**	**3.1917**	**2.3052**	**4.0500e-003**	**0.0614**	**0.1898**	**0.2512**	**0.0186**	**0.1810**	**0.1996**	**0.0000**	**355.3637**	**355.3637**	**0.0668**	**0.0000**	**357.0341**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**15.16**	**0.00**	**4.18**	**23.07**	**0.00**	**2.72**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-2-2017	4-1-2017	0.9763	0.9763
2	4-2-2017	7-1-2017	0.8900	0.8900
3	7-2-2017	9-30-2017	0.8900	0.8900
		Highest	0.9763	0.9763

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3459	0.0175	0.7692	7.7000e-004		0.0465	0.0465		0.0465	0.0465	4.8861	10.1643	15.0503	0.0153	3.3000e-004	15.5325
Energy	5.1800e-003	0.0442	0.0188	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	128.9973	128.9973	4.1900e-003	1.6000e-003	129.5800
Mobile	0.0972	0.5230	1.3427	4.3000e-003	0.3374	4.9900e-003	0.3424	0.0904	4.7000e-003	0.0951	0.0000	395.6031	395.6031	0.0212	0.0000	396.1325
Waste						0.0000	0.0000		0.0000	0.0000	4.2953	0.0000	4.2953	0.2538	0.0000	10.6414
Water						0.0000	0.0000		0.0000	0.0000	0.9508	19.1227	20.0736	0.0985	2.4700e-003	23.2706
Total	**0.4483**	**0.5847**	**2.1306**	**5.3500e-003**	**0.3374**	**0.0551**	**0.3925**	**0.0904**	**0.0548**	**0.1452**	**10.1322**	**553.8874**	**564.0196**	**0.3930**	**4.4000e-003**	**575.1570**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1962	0.0141	0.4804	8.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	10.7166	10.7166	9.5000e-004	1.8000e-004	10.7947
Energy	5.1800e-003	0.0442	0.0188	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	128.9973	128.9973	4.1900e-003	1.6000e-003	129.5800
Mobile	0.0972	0.5230	1.3427	4.3000e-003	0.3374	4.9900e-003	0.3424	0.0904	4.7000e-003	0.0951	0.0000	395.6031	395.6031	0.0212	0.0000	396.1325
Waste						0.0000	0.0000		0.0000	0.0000	4.2953	0.0000	4.2953	0.2538	0.0000	10.6414
Water						0.0000	0.0000		0.0000	0.0000	0.9508	19.1227	20.0736	0.0985	2.4700e-003	23.2706
Total	**0.2986**	**0.5814**	**1.8419**	**4.6600e-003**	**0.3374**	**0.0119**	**0.3493**	**0.0904**	**0.0116**	**0.1020**	**5.2461**	**554.4397**	**559.6859**	**0.3786**	**4.2500e-003**	**570.4192**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**33.39**	**0.57**	**13.55**	**12.90**	**0.00**	**78.44**	**11.01**	**0.00**	**78.86**	**29.77**	**48.22**	**-0.10**	**0.77**	**3.66**	**3.41**	**0.82**

3.0 Construction Detail

Construction Phase

Gardena Townhomes - South Coast Air Basin, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/2/2017	1/27/2017	5	20	
2	Grading	Grading	2/2/2017	2/9/2017	5	6	
3	Building Construction	Building Construction	2/10/2017	12/14/2017	5	220	
4	Paving	Paving	12/15/2017	12/28/2017	5	10	
5	Architectural Coating	Architectural Coating	12/15/2017	12/31/2017	5	11	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 93,150; Residential Outdoor: 31,050; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

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
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	33.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	148.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	562.00	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

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	**0.0276**	**0.2676**	**0.1556**	**2.4000e-004**		**0.0165**	**0.0165**		**0.0154**	**0.0154**	**0.0000**	**21.9668**	**21.9668**	**5.5600e-003**	**0.0000**	**22.1057**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.8000e-004	0.0260	4.9900e-003	6.0000e-005	1.2700e-003	1.4000e-004	1.4100e-003	3.5000e-004	1.3000e-004	4.8000e-004	0.0000	5.7904	5.7904	4.3000e-004	0.0000	5.8013
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	6.5000e-004	6.9300e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.4090	1.4090	5.0000e-005	0.0000	1.4104
Total	**1.5600e-003**	**0.0267**	**0.0119**	**8.0000e-005**	**2.7000e-003**	**1.5000e-004**	**2.8500e-003**	**7.3000e-004**	**1.4000e-004**	**8.7000e-004**	**0.0000**	**7.1994**	**7.1994**	**4.8000e-004**	**0.0000**	**7.2116**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	**0.0276**	**0.2676**	**0.1556**	**2.4000e-004**		**0.0165**	**0.0165**		**0.0154**	**0.0154**	**0.0000**	**21.9668**	**21.9668**	**5.5600e-003**	**0.0000**	**22.1057**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.8000e-004	0.0260	4.9900e-003	6.0000e-005	1.2700e-003	1.4000e-004	1.4100e-003	3.5000e-004	1.3000e-004	4.8000e-004	0.0000	5.7904	5.7904	4.3000e-004	0.0000	5.8013
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	6.5000e-004	6.9300e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.4090	1.4090	5.0000e-005	0.0000	1.4104
Total	**1.5600e-003**	**0.0267**	**0.0119**	**8.0000e-005**	**2.7000e-003**	**1.5000e-004**	**2.8500e-003**	**7.3000e-004**	**1.4000e-004**	**8.7000e-004**	**0.0000**	**7.1994**	**7.1994**	**4.8000e-004**	**0.0000**	**7.2116**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0199	0.0000	0.0199	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9600e-003	0.0785	0.0323	6.0000e-005		3.9000e-003	3.9000e-003		3.5800e-003	3.5800e-003	0.0000	5.7484	5.7484	1.7600e-003	0.0000	5.7925
Total	**6.9600e-003**	**0.0785**	**0.0323**	**6.0000e-005**	**0.0199**	**3.9000e-003**	**0.0238**	**0.0101**	**3.5800e-003**	**0.0137**	**0.0000**	**5.7484**	**5.7484**	**1.7600e-003**	**0.0000**	**5.7925**

3.3 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9700e-003	0.0988	0.0189	2.2000e-004	4.8300e-003	5.2000e-004	5.3500e-003	1.3300e-003	5.0000e-004	1.8300e-003	0.0000	21.9880	21.9880	1.6400e-003	0.0000	22.0291
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.6000e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3252	0.3252	1.0000e-005	0.0000	0.3255
Total	**3.1500e-003**	**0.0990**	**0.0205**	**2.2000e-004**	**5.1600e-003**	**5.2000e-004**	**5.6800e-003**	**1.4200e-003**	**5.0000e-004**	**1.9200e-003**	**0.0000**	**22.3132**	**22.3132**	**1.6500e-003**	**0.0000**	**22.3545**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.9600e-003	0.0000	8.9600e-003	4.5600e-003	0.0000	4.5600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9600e-003	0.0785	0.0323	6.0000e-005		3.9000e-003	3.9000e-003		3.5800e-003	3.5800e-003	0.0000	5.7484	5.7484	1.7600e-003	0.0000	5.7924
Total	**6.9600e-003**	**0.0785**	**0.0323**	**6.0000e-005**	**8.9600e-003**	**3.9000e-003**	**0.0129**	**4.5600e-003**	**3.5800e-003**	**8.1400e-003**	**0.0000**	**5.7484**	**5.7484**	**1.7600e-003**	**0.0000**	**5.7924**

3.3 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9700e-003	0.0988	0.0189	2.2000e-004	4.8300e-003	5.2000e-004	5.3500e-003	1.3300e-003	5.0000e-004	1.8300e-003	0.0000	21.9880	21.9880	1.6400e-003	0.0000	22.0291
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.6000e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3252	0.3252	1.0000e-005	0.0000	0.3255
Total	**3.1500e-003**	**0.0990**	**0.0205**	**2.2000e-004**	**5.1600e-003**	**5.2000e-004**	**5.6800e-003**	**1.4200e-003**	**5.0000e-004**	**1.9200e-003**	**0.0000**	**22.3132**	**22.3132**	**1.6500e-003**	**0.0000**	**22.3545**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3676	2.5332	1.7941	2.7500e-003		0.1617	0.1617		0.1548	0.1548	0.0000	234.2699	234.2699	0.0522	0.0000	235.5742
Total	**0.3676**	**2.5332**	**1.7941**	**2.7500e-003**		**0.1617**	**0.1617**		**0.1548**	**0.1548**	**0.0000**	**234.2699**	**234.2699**	**0.0522**	**0.0000**	**235.5742**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7400e-003	0.0728	0.0198	1.4000e-004	3.4700e-003	6.2000e-004	4.0900e-003	1.0000e-003	5.9000e-004	1.5900e-003	0.0000	13.7131	13.7131	1.0400e-003	0.0000	13.7390
Worker	0.0217	0.0181	0.1935	4.4000e-004	0.0398	3.4000e-004	0.0402	0.0106	3.1000e-004	0.0109	0.0000	39.3439	39.3439	1.4900e-003	0.0000	39.3812
Total	**0.0244**	**0.0909**	**0.2133**	**5.8000e-004**	**0.0433**	**9.6000e-004**	**0.0443**	**0.0116**	**9.0000e-004**	**0.0125**	**0.0000**	**53.0569**	**53.0569**	**2.5300e-003**	**0.0000**	**53.1201**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3676	2.5332	1.7941	2.7500e-003		0.1617	0.1617		0.1548	0.1548	0.0000	234.2696	234.2696	0.0522	0.0000	235.5740
Total	**0.3676**	**2.5332**	**1.7941**	**2.7500e-003**		**0.1617**	**0.1617**		**0.1548**	**0.1548**	**0.0000**	**234.2696**	**234.2696**	**0.0522**	**0.0000**	**235.5740**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7400e-003	0.0728	0.0198	1.4000e-004	3.4700e-003	6.2000e-004	4.0900e-003	1.0000e-003	5.9000e-004	1.5900e-003	0.0000	13.7131	13.7131	1.0400e-003	0.0000	13.7390
Worker	0.0217	0.0181	0.1935	4.4000e-004	0.0398	3.4000e-004	0.0402	0.0106	3.1000e-004	0.0109	0.0000	39.3439	39.3439	1.4900e-003	0.0000	39.3812
Total	**0.0244**	**0.0909**	**0.2133**	**5.8000e-004**	**0.0433**	**9.6000e-004**	**0.0443**	**0.0116**	**9.0000e-004**	**0.0125**	**0.0000**	**53.0569**	**53.0569**	**2.5300e-003**	**0.0000**	**53.1201**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2900e-003	0.0834	0.0611	9.0000e-005		5.1700e-003	5.1700e-003		4.7600e-003	4.7600e-003	0.0000	8.1750	8.1750	2.4600e-003	0.0000	8.2364
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2900e-003**	**0.0834**	**0.0611**	**9.0000e-005**		**5.1700e-003**	**5.1700e-003**		**4.7600e-003**	**4.7600e-003**	**0.0000**	**8.1750**	**8.1750**	**2.4600e-003**	**0.0000**	**8.2364**

3.5 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.7000e-004	4.0000e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.8129	0.8129	3.0000e-005	0.0000	0.8137
Total	**4.5000e-004**	**3.7000e-004**	**4.0000e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.8129**	**0.8129**	**3.0000e-005**	**0.0000**	**0.8137**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2900e-003	0.0834	0.0611	9.0000e-005		5.1700e-003	5.1700e-003		4.7600e-003	4.7600e-003	0.0000	8.1749	8.1749	2.4600e-003	0.0000	8.2364
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2900e-003**	**0.0834**	**0.0611**	**9.0000e-005**		**5.1700e-003**	**5.1700e-003**		**4.7600e-003**	**4.7600e-003**	**0.0000**	**8.1749**	**8.1749**	**2.4600e-003**	**0.0000**	**8.2364**

3.5 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.7000e-004	4.0000e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.8129	0.8129	3.0000e-005	0.0000	0.8137
Total	**4.5000e-004**	**3.7000e-004**	**4.0000e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.8129**	**0.8129**	**3.0000e-005**	**0.0000**	**0.8137**

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	tons/yr										MT/yr					
Archit. Coating	0.1439					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8300e-003	0.0120	0.0103	2.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	1.4043	1.4043	1.5000e-004	0.0000	1.4080
Total	**0.1458**	**0.0120**	**0.0103**	**2.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**1.4043**	**1.4043**	**1.5000e-004**	**0.0000**	**1.4080**

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	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.9000e-004	2.0500e-003	0.0000	4.2000e-004	0.0000	4.3000e-004	1.1000e-004	0.0000	1.2000e-004	0.0000	0.4173	0.4173	2.0000e-005	0.0000	0.4177
Total	**2.3000e-004**	**1.9000e-004**	**2.0500e-003**	**0.0000**	**4.2000e-004**	**0.0000**	**4.3000e-004**	**1.1000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4173**	**0.4173**	**2.0000e-005**	**0.0000**	**0.4177**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1439					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8300e-003	0.0120	0.0103	2.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	1.4043	1.4043	1.5000e-004	0.0000	1.4080
Total	**0.1458**	**0.0120**	**0.0103**	**2.0000e-005**		**9.5000e-004**	**9.5000e-004**		**9.5000e-004**	**9.5000e-004**	**0.0000**	**1.4043**	**1.4043**	**1.5000e-004**	**0.0000**	**1.4080**

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	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.9000e-004	2.0500e-003	0.0000	4.2000e-004	0.0000	4.3000e-004	1.1000e-004	0.0000	1.2000e-004	0.0000	0.4173	0.4173	2.0000e-005	0.0000	0.4177
Total	**2.3000e-004**	**1.9000e-004**	**2.0500e-003**	**0.0000**	**4.2000e-004**	**0.0000**	**4.3000e-004**	**1.1000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4173**	**0.4173**	**2.0000e-005**	**0.0000**	**0.4177**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0972	0.5230	1.3427	4.3000e-003	0.3374	4.9900e-003	0.3424	0.0904	4.7000e-003	0.0951	0.0000	395.6031	395.6031	0.0212	0.0000	396.1325
Unmitigated	0.0972	0.5230	1.3427	4.3000e-003	0.3374	4.9900e-003	0.3424	0.0904	4.7000e-003	0.0951	0.0000	395.6031	395.6031	0.0212	0.0000	396.1325

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	267.26	260.82	222.64	888,342	888,342
Total	267.26	260.82	222.64	888,342	888,342

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.548893	0.044275	0.199565	0.124385	0.017503	0.005874	0.020174	0.028962	0.001990	0.002015	0.004673	0.000702	0.000989

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.7671	77.7671	3.2100e-003	6.6000e-004	78.0453
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	77.7671	77.7671	3.2100e-003	6.6000e-004	78.0453
NaturalGas Mitigated	5.1800e-003	0.0442	0.0188	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	51.2302	51.2302	9.8000e-004	9.4000e-004	51.5347
NaturalGas Unmitigated	5.1800e-003	0.0442	0.0188	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	51.2302	51.2302	9.8000e-004	9.4000e-004	51.5347

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	960018	5.1800e-003	0.0442	0.0188	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	51.2302	51.2302	9.8000e-004	9.4000e-004	51.5347
Total		**5.1800e-003**	**0.0442**	**0.0188**	**2.8000e-004**		**3.5800e-003**	**3.5800e-003**		**3.5800e-003**	**3.5800e-003**	**0.0000**	**51.2302**	**51.2302**	**9.8000e-004**	**9.4000e-004**	**51.5347**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	960018	5.1800e-003	0.0442	0.0188	2.8000e-004		3.5800e-003	3.5800e-003		3.5800e-003	3.5800e-003	0.0000	51.2302	51.2302	9.8000e-004	9.4000e-004	51.5347
Total		**5.1800e-003**	**0.0442**	**0.0188**	**2.8000e-004**		**3.5800e-003**	**3.5800e-003**		**3.5800e-003**	**3.5800e-003**	**0.0000**	**51.2302**	**51.2302**	**9.8000e-004**	**9.4000e-004**	**51.5347**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	244074	77.7671	3.2100e-003	6.6000e-004	78.0453
Total		**77.7671**	**3.2100e-003**	**6.6000e-004**	**78.0453**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	244074	77.7671	3.2100e-003	6.6000e-004	78.0453
Total		**77.7671**	**3.2100e-003**	**6.6000e-004**	**78.0453**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1962	0.0141	0.4804	8.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	10.7166	10.7166	9.5000e-004	1.8000e-004	10.7947
Unmitigated	0.3459	0.0175	0.7692	7.7000e-004		0.0465	0.0465		0.0465	0.0465	4.8861	10.1643	15.0503	0.0153	3.3000e-004	15.5325

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0144					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1662					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1507	0.0119	0.2924	7.5000e-004		0.0439	0.0439		0.0439	0.0439	4.8861	9.3894	14.2754	0.0146	3.3000e-004	14.7386
Landscaping	0.0146	5.5200e-003	0.4767	3.0000e-005		2.6100e-003	2.6100e-003		2.6100e-003	2.6100e-003	0.0000	0.7749	0.7749	7.6000e-004	0.0000	0.7939
Total	**0.3459**	**0.0175**	**0.7692**	**7.8000e-004**		**0.0465**	**0.0465**		**0.0465**	**0.0465**	**4.8861**	**10.1643**	**15.0503**	**0.0153**	**3.3000e-004**	**15.5325**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0144					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1662					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0000e-003	8.5800e-003	3.6500e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	9.9417	9.9417	1.9000e-004	1.8000e-004	10.0008
Landscaping	0.0146	5.5200e-003	0.4767	3.0000e-005		2.6100e-003	2.6100e-003		2.6100e-003	2.6100e-003	0.0000	0.7749	0.7749	7.6000e-004	0.0000	0.7939
Total	**0.1962**	**0.0141**	**0.4804**	**8.0000e-005**		**3.3000e-003**	**3.3000e-003**		**3.3000e-003**	**3.3000e-003**	**0.0000**	**10.7166**	**10.7166**	**9.5000e-004**	**1.8000e-004**	**10.7947**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	20.0736	0.0985	2.4700e-003	23.2706
Unmitigated	20.0736	0.0985	2.4700e-003	23.2706

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.99709 / 1.88947	20.0736	0.0985	2.4700e-003	23.2706
Total		**20.0736**	**0.0985**	**2.4700e-003**	**23.2706**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.99709 / 1.88947	20.0736	0.0985	2.4700e-003	23.2706
Total		**20.0736**	**0.0985**	**2.4700e-003**	**23.2706**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.2953	0.2538	0.0000	10.6414
Unmitigated	4.2953	0.2538	0.0000	10.6414

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	21.16	4.2953	0.2538	0.0000	10.6414
Total		**4.2953**	**0.2538**	**0.0000**	**10.6414**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	21.16	4.2953	0.2538	0.0000	10.6414
Total		**4.2953**	**0.2538**	**0.0000**	**10.6414**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation