

Appendix A
Air Quality and Greenhouse Gas Impact
Analysis, Asphalt Plant No. 1
Replacement and Modernization

REPORT

Air Quality and Greenhouse Gas Impact Analysis, Asphalt Plant No. 1 Replacement and Modernization

Prepared for

City of Los Angeles

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Acronyms and Abbreviations

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
ARB	California Air Resources Board
AQMP	Air Quality Management Plan
ATCM	airborne toxic control measures
BACT	best available control measures
BMP	Best Management Practice
CAAQS	California ambient air quality standards
Cal-EPA	California Environmental Protection Agency
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CAA	Clean Air Act
ARB	California Air Resources Board
CNG	compressed natural gas
CFM	cubic feet per minute
DPM	diesel particulate matter
EOs	Executive Orders
EPA	U.S. Environmental Protection Agency
g/mile	grams per mile
General Plan	City of Los Angeles General Plan
GHG	Greenhouse gases
HMA	Hot mix asphalt
LNG	liquefied natural gas ()
LOS	level of service
MMBTU/hour	million British thermal units per hour
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NAAQS	nationwide ambient air quality standards
NOA	naturally occurring asbestos
NO ₂	nitrogen dioxide
PM _{2.5}	particulate matter less than 2.5 micrometers in aerodynamic diameter
PM ₁₀	particulate matter less than 10 micrometers in aerodynamic diameter
ppm	parts per million
ROG	reactive organic gas

ACRONYMS AND ABBREVIATIONS

RPS	Renewables Portfolio Standard
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO ₂	sulfur dioxide
TAC	toxic air contaminant
VMT	vehicle miles traveled
VOC	volatile organic compound

Air Quality

This technical report presents the findings of an analysis of air quality and greenhouse gas impacts that would potentially result from the City of Los Angeles Asphalt Plant No. 1 Replacement and Modernization project (the proposed project).

The air quality impact consists of a summary of the regulatory framework to be considered during the decision-making process, a description of the existing air quality conditions in the City of Los Angeles (the City), thresholds for determining if the proposed project would result in significant impacts, anticipated impacts, and the level of impact significance. The potential impacts to air quality have been analyzed in accordance with Appendix G of the State CEQA Guidelines, the National Ambient Air Quality Standards (NAAQS), the California Ambient Air Quality Standards (CAAQS), the federal Clean Air Act, and guidance provided by the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (ARB).

1.1 Regulatory Framework

This regulatory framework identifies the federal, state, regional, and local laws that govern the regulation of air quality in the project area. These laws and regulations should be considered by the City when rendering decisions on proposed projects that would have the potential to result in air emissions.

Responsibility for attaining and maintaining ambient air quality standards in California is divided between the ARB and regional air pollution control or air quality management districts. Areas of control for the regional districts and geographic air basins are established by ARB. The air basins are based largely on topography that limits airflow, or by county boundaries. The proposed project would be in the South Coast Air Basin (SCAB), under the jurisdiction of SCAQMD.

1.1.1 Federal Regulations

1.1.1.1 Federal Clean Air Act and National Ambient Air Quality Standards

Federal air quality policies are regulated through the federal Clean Air Act (CAA), enacted by Congress in 1970, and amended in 1977 and 1990. Pursuant to the CAA, the U.S. Environmental Protection Agency (EPA) has established nationwide ambient air quality standards (NAAQS) to protect public health and welfare with an adequate margin of safety. NAAQS have been developed for seven criteria pollutants: ozone, nitrogen dioxide (NO₂), carbon (CO), particulate matter less than 10 or 2.5 micrometers in aerodynamic diameter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and lead. These pollutants are referred to as criteria pollutants because numerical health-based criteria have been established that define acceptable levels of exposure for each pollutant. The NAAQS represent safe ambient concentrations for each pollutant to avoid specific adverse effects to human health and the environment. A summary of the NAAQS is provided in Table 1-1.

The 1977 CAA amendment required each state to develop and maintain a State Implementation Plan (SIP) for each criteria pollutant that violates the applicable NAAQS. The SIP serves as a tool to avoid and minimize emissions of pollutants that exceed ambient threshold criteria and to achieve compliance with the NAAQS. In 1990, the CAA was amended to strengthen regulation of both stationary and mobile sources of criteria pollutants. Conformity to the SIP is defined under the 1990 CAA amendment as conformity with the plan's purpose in eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of the standards.

Table 1-1. California And National Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b	
			Primary ^c	Secondary ^d
Ozone	8 hours 1 hour	0.070 ppm(volume) 0.09 ppm(volume)	0.070 ppm(volume) ^g —	0.070 ppm(volume) —
PM ₁₀ ^e	Annual Arithmetic Mean 24 hours	20 µg/m ³ 50 µg/m ³	— 150 µg/m ³	— 150 µg/m ³
PM _{2.5} ^e	Annual Arithmetic Mean 24 hours	12 µg/m ³ —	12 µg/m ³ 35 µg/m ³	15 µg/m ³ 35 µg/m ³
CO	8 hours 1 hour	9.0 ppm(volume) 20 ppm(volume)	9 ppmv 35 ppmv	— —
NO ₂	Annual Arithmetic Mean 1 hour	0.03 ppm(volume) 0.18 ppm(volume)	0.053 ppm 0.100 ppm ^f	0.053 ppm(volume) —
SO ₂	Annual 24 hours 3 hours 1 hour	-- 0.04 ppm(volume) — 0.25 ppm(volume)	0.03 ppm (certain areas) ^g 0.14 ppm (certain areas) ^g — 0.075 ppm ^g	— 0.5 ppm(volume) —
Lead ^e	Calendar Quarter Rolling 3-month Average 30-day Average	— — 1.5 µg/m ³	1.5 µg/m ³ 0.15 µg/m ³ —	1.5 µg/m ³ 0.15 µg/m ³ —
Visibility-reducing Particles	8 hours	f	—	—
Sulfates	24 hours	25 µg/m ³	—	—
Hydrogen Sulfide	1 hour	0.03 ppm(volume)	—	—
Vinyl Chloride ^h	24 hours	0.01 ppm(volume)	—	—

Notes:

^aCalifornia standards for ozone, CO (except Lake Tahoe), SO₂ (1-hour and 24-hour), NO₂, and suspended particulate matter (PM₁₀, PM_{2.5}, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded.

^bNational standards other than ozone, PM, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, is equal to or less than the standard.

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

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

^eOn December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

^fTo 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 parts per billion (ppb).

Table 1-1. California And National Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b	
			Primary ^c	Secondary ^d

^g On June 2, 2010, a new 1-hour SO₂ standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until 1 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.

^e ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. ARB made this determination following the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

^f Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

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

µg/m³ = micrograms per cubic meter

ppm = parts per million by volume

Source: ARB, 2015b

1.1.2 State Regulations

1.1.2.1 California Air Quality Standards and California Clean Air Act

ARB oversees California air quality policies. California ambient air quality standards (CAAQS) were first established in 1969 pursuant to the Mulford-Carrell Act. These standards are generally more stringent than the NAAQS and include the NAAQS pollutants and four additional pollutants—sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulates. Relevant CAAQS are listed in Table 1-1.

The California CAA, which was approved in 1988, requires each local air district with ambient concentrations that violate the state standards to prepare an Air Quality Management Plan (AQMP) to achieve compliance with the CAAQS as a part of the SIP. ARB has ultimate responsibility for the SIP for nonattainment pollutants but relies on each local air district to adopt mandatory statewide programs and provide tailored additional strategies for sources under their local jurisdiction. The SIPs required by federal law are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. Local air districts and other agencies prepare SIP elements and submit them to ARB for review and approval. ARB forwards SIP revisions to EPA for approval and publication in the Federal Register.

Air Toxics

California regulates toxic air contaminants (TACs) through its Air Toxics Program, which is mandated in Chapter 3.5 of the Health and Safety Code – Toxic Air Contaminants, and Part 6 – Air Toxics Hot Spots Information and Assessment (H&SC Sections 39660 et seq. and 44300 et seq., respectively). TACs consist of a variety of compounds, including metals, minerals, soot, and hydrocarbon-based chemicals. There are hundreds of different types of air toxics, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust.

In 1998, the California Environmental Protection Agency's (Cal-EPA's) Office of Environmental Health Hazard Assessment completed a comprehensive health assessment of diesel exhaust. This assessment formed the basis for a decision by the ARB to formally identify particulate matter in diesel exhaust (DPM) as a TAC that may pose a threat to human health.

The ARB has adopted a Diesel Risk Reduction Plan and a series of airborne toxic control measures (ATCMs) for mobile and stationary sources intended to reduce overall DPM emissions in California (ARB, 2015a). The recommended measures can be grouped as follows: measures addressing on-road vehicles; measures addressing off-road equipment and vehicles; and measures addressing stationary and portable engines.

1.1.3 South Coast Air Quality Management District

The proposed project site is located in the City within the SCAB and under the jurisdiction of SCAQMD. The SCAB consists of the following counties: Orange County, the non-desert portions of Los Angeles County, Riverside County, and San Bernardino County. SCAQMD is the local agency responsible for ensuring that federal and state ambient air quality standards are attained and maintained in the SCAB.

1.1.3.1 Air Quality Plans

The SCAQMD prepares the AQMP, which contains measures to comply with state and federal requirements. When approved by ARB and EPA, the AQMP becomes part of the SIP. The most recent EPA-approved South Coast SIPs are the *1997 Air Quality Management Plan* (SCAQMD, 1997) and the *1999 Amendment to the 1997 Ozone AQMP Revision for the South Coast Air Basin and Settlement Agreement on the 1994 Ozone SIP Litigation* (SCAQMD, 1999). The most recent SCAQMD-adopted AQMP is the final 2012 AQMP that the SCAQMD Governing Board adopted on December 7, 2012. The 2012 AQMP is a regional and multi-agency effort. The 2012 AQMP incorporates the latest scientific and technical information and planning assumptions, including the Southern California Association of Governments (SCAG)'s 2012 Regional Transportation Plan/Sustainable Communities Strategy (SCAG, 2012), updated emission inventory methodologies for various source categories, and the latest growth forecasts. Currently, SCAQMD is in the process of developing the 2016 AQMP, which would be a comprehensive and integrated plan primarily focused on achieving compliance with the ozone and PM_{2.5} standards (SCAQMD, 2015).

SCAQMD Rules

The SCAQMD is the regional agency responsible for rulemaking, permitting, and enforcement activities affecting stationary sources in the SCAB. Specific rules and regulations adopted by the SCAQMD limit the emissions that can be generated by various activities, and identify specific pollution reduction measures that must be implemented in association with various activities. These rules regulate not only emissions of the six criteria air pollutants, but also toxic emissions and acutely hazardous non-radioactive materials emissions. Any sources of stationary emissions constructed as part of a project would be subject to SCAQMD Rules and Regulations. Applicable rules would include, but would not be limited to the following:

- Regulation II: Permits
- Regulation IV: Prohibitions, such as:
 - Rule 401: Visible Emissions
 - Rule 402: Nuisance
 - Rule 403: Fugitive Dust
- Regulation XI: Source Specific Standards, such as:
 - Rule 1146.1 Emissions of NO_x from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters
 - Rule 1147 NO_x Reductions from Miscellaneous Sources
 - Rule 1157: PM₁₀ Emission Reductions from Aggregate and Related Operations

- Rule 1166: Volatile Organic Compounds from Decontamination of Soils
- Regulation XIII: New Source Review (for criteria pollutants), including requirements for emission offsets, best available control technology, and air dispersion modeling requirements.
- Regulation XIV: Toxics and Other Non-Criteria Pollutants,
 - Rule 1401: New Source Review of Toxic Air Contaminants.
 - Rule 1403: Asbestos Emissions from Demolition/Renovation Activities.

1.1.4 Local Plans

1.1.4.1 City of Los Angeles General Plan

Development in the project area is governed by the policies, procedures, and standards set forth in the City of Los Angeles General Plan (General Plan). The General Plan is prepared and maintained by the Department of City Planning. It is a comprehensive, long-range declaration of purposes, policies, and programs for the development of the City.

1.2 Existing Conditions

1.2.1 Topographic and Climate

The proposed project would be located in the SCAB, which has high air pollution potential due to its climate and topography. The climate of the basin is characterized by warm summers, mild winters, infrequent rainfall, light winds, and moderate humidity. This mild climatological pattern is interrupted infrequently by extremely hot summers, winter storms, and Santa Ana winds. The SCAB is in a coastal plain bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east; and the San Diego County line to the south. During the dry season, the Eastern Pacific High-Pressure Area (a semi-permanent feature of the general hemispheric circulation pattern) dominates the weather over much of Southern California, resulting in a mild climate tempered by cool sea breezes with light average wind speed. High mountains surround the rest of the SCAB perimeter, contributing to the variability of rainfall, temperature, and winds throughout the SCAB.

At times, the SCAB may experience temperature inversions, a condition characterized by an increase in temperature with an increase in altitude. Under normal atmospheric conditions, temperature decreases with altitude. Under temperature inversion conditions, as polluted air rises, it reaches an area where the ambient temperature exceeds the temperature of the polluted air, thereby limiting vertical dispersion of air pollutants and causing the polluted air to sink, where it can become trapped close to the ground. This may occur during summer, when the interaction between the ocean surface and the lower layers of the atmosphere creates a marine layer. With an upper layer of warm air mass over the cool marine layer, air pollutants are prevented from dispersing upward. Additional air quality problems in the basin can be attributed to the bright sunshine, which may cause a photochemical reaction between hydrocarbons and oxides of nitrogen to form ozone, or smog. During fall and winter, the greatest pollution problems are CO and NO_x emissions, which become trapped and concentrated by an inversion layer.

1.2.2 Existing Air Quality

The proposed project would be located in an area of Los Angeles County that has been designated by EPA as nonattainment for the NAAQS for ozone, PM_{2.5}, and lead, and as maintenance for the NAAQS for PM₁₀, CO, and NO₂. Under CAAQS, the area is designated as nonattainment for ozone, PM₁₀, PM_{2.5}, NO₂, and lead, and as attainment for CO. Other pollutants are not classified under the NAAQS or CAAQS. A summary of the attainment status of each pollutant under the federal and state standards is presented in Table 1-2.

Table 1-2. Attainment Status for Federal and State Regulated Pollutants in the Project Area

Pollutant	State Designation	Federal Designation
Ozone (8-hour)	Nonattainment	Extreme Nonattainment
Ozone (1-hour)	Nonattainment	Revoked (70 FR 44470)
PM ₁₀	Nonattainment	Attainment/Maintenance
PM _{2.5}	Nonattainment	Moderate Nonattainment
CO	Attainment	Attainment/Maintenance
NO ₂	Attainment	Attainment/Maintenance (annual) Attainment/Unclassified (1-hour)
Lead	Attainment	Nonattainment
All Others	Unclassified	Unclassified

Sources: ARB, 2014b4; EPA, 2015

1.2.2.1 Sensitive Receptors

Land uses identified to represent sensitive receptors in the *CEQA Air Quality Analysis Guidance Handbook* include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD, 1993). The proposed project is located in an industrial area. The closest residential receptors are located approximately 1,500 feet east of the facility, and the closest school is over 2,000 feet from the facility boundary.

1.3 Impact Assessment Methodology

1.3.1 Significance Thresholds

The potential for the proposed project to result in impacts related to air quality has been analyzed in relation to the questions contained in Appendix G of the State CEQA Guidelines, specifically, could the proposed project have one or more of five potential effects:

- Conflict with or obstruct the implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

The City relies on significance thresholds recommended by SCAQMD in the *CEQA Air Quality Analysis Guidance Handbook* to determine whether projects would have significant impacts to air quality (SCAQMD, 1993) updated through 2015). The *CEQA Air Quality Analysis Guidance Handbook* lists significance thresholds for construction and operational emissions (shown in Table 1-3). Air quality impacts resulting from construction and operation of a project would be deemed significant if daily emission estimates would exceed these significance thresholds (SCAQMD, 1993 updated through 2015).

Table 1-3. SCAQMD Construction and Operational Emission Thresholds of Significance

Criteria Air Pollutant	SCAQMD Project Construction Threshold (lb/day)	SCAQMD Project Operation Threshold (lb/day)
CO	550	550
ROG	75	55
NO _x	100	55
SO _x	150	150
PM ₁₀	150	150
PM _{2.5}	55	55
Lead	3	3

Note:

lb = pound

Source: SCAQMD, 1993, updated through 2015.

In addition, SCAQMD's health risk significance thresholds for air toxics was used to evaluate the potential impacts of toxic air contaminant emissions from operation of the proposed project:

- Maximum Incremental Cancer Risk greater than or equal to 10 in 1 million
- Cancer Burden greater than 0.5 excess cancer cases (in areas with cancer risks greater than or equal to 1 in 1 million)
- Chronic and Acute Hazard Index greater than or equal to 1.0 (project increment)

Potential CO hot spot impacts was evaluated based on the changes of the affected intersection level of service (LOS). If the proposed project would not cause a deterioration of the traffic condition at affected intersections, the proposed project vehicle emissions at intersections would not be expected to cause violations to the national and state ambient air quality standards for CO. If the proposed project would cause worse LOS at the affected intersections, further analysis such as air dispersion modeling may be needed.

1.3.2 Construction Emissions Estimates

Temporary construction emission impacts would include fugitive dust from soil disturbance activities, and exhaust emissions from construction equipment, delivery and material hauling trucks, and employee vehicles. Reactive organic gases (ROG) emissions would also result from paving and use of architectural coatings.

Construction of the proposed project would begin in mid-2016 and would take approximately 22 months to complete. Construction activities would include demolition of the existing plant structure and equipment, grading, soil export and import, installation of equipment, building construction, and paving. The main construction phases included in the emission analysis are shown in Table 1-4. Construction activities are assumed to occur 5 days a week.

Table 1-4. Main Construction Phases and Schedule

Phase Name	Phase Start Date	Phase End Date
Building Demolition	8/8/2016	9/9/2016
Site Demolition, Removals and Prep	8/15/2016	10/21/2016

Table 1-4. Main Construction Phases and Schedule

Phase Name	Phase Start Date	Phase End Date
Utility	9/26/2016	2/1/2017
Civil Work	9/26/2016	2/1/2017
Contaminated Soil Export	9/28/2016	1/28/2017
Rough Grading	9/28/2016	11/12/2016
Plant Equipment Installation	1/19/2017	10/16/2017
Building Construction	1/19/2017	3/23/2018
First Paving	2/2/2017	3/20/2017
Construct Foundation	4/12/2017	6/14/2017
Final Grading	6/15/2017	6/28/2017
Architectural Coatings	3/3/2018	3/23/2018
Final paving	3/26/2018	5/4/2018

Construction emissions of NO_x, CO, ROG, SO₂, PM₁₀, and PM_{2.5} from the project were estimated using CalEEMod (CAPCOA, 2013), with the following assumptions:

- Construction phase information was based on the phases and schedule in Table 1.4.
- Project-specific equipment types and daily usages during each phase were based on the current project design and anticipated overall activities. Because information on horsepower rating and load factor for each piece of equipment was not available, the CalEEMod default horsepower ratings and load factors for the corresponding equipment types were used in the emissions calculations.
- Number of haul truck trips were based on the estimated volume of materials or equipment that would need to be shipped from or to the project site, and the anticipated duration of the material delivery.
- In order to minimize the air pollutant emissions on a daily basis and to avoid large amount trucks operating simultaneously near the project site, haul truck trips for excavated soil exporting would be required to occur over a period of no less than four months.
- Haul truck capacity was assumed to be 20 tons per load, except for the contaminated soil export which assumed 25 tons per load for trucks with trailer. All haul trucks were assumed to be heavy heavy-duty diesel vehicles. Vehicle travel distances were based on the anticipated trip routes for each material or type of equipment in SCAQMD, as summarized in Attachment A.
- Worker commute trips were estimated for each phase of the project, assuming a conservative round-trip distance of 75 miles. Vehicles used for worker commute were assumed to be passenger cars and light duty vehicles.
- The total area to be disturbed during project construction was assumed to be 2.9 acres, which includes the existing asphalt plant site and the leasing property to the south. The areas to be paved were assumed to be approximately 2.1 acres.

The CalEEMod output provides the worst-case daily construction emissions, taking into account the overlapping phases that may occur simultaneously. To clarify, the emission calculation assumes that all equipment proposed for each individual phase would be operating simultaneously with other overlapping phases on a worst-case day. Because of the limited size of the proposed project site, not all

the proposed equipment for the overlapping phases would be able to be operated onsite at the same time. Therefore, the emission calculation approach is conservative, and the actual daily emissions would be expected to be lower than those estimated in this analysis.

Detailed information used in the emission calculations, the CalEEMod output files, and a summary of the estimated worst-case daily construction emissions are provided in Attachment A.

1.3.3 Operational Emission Estimates

The proposed project would have operational emissions from onsite stationary sources and offsite vehicle travel for delivery of raw materials and products. Emissions calculation methodologies for operational emissions are described in the following sections. Detailed emission calculations are provided in Attachment B.

Because the existing plant would be demolished under the proposed project, increase of project-related emissions were calculated as the differences in emissions between operation of the existing plant and operation of the proposed project. The emission increases were compared to the SCAQMD significance thresholds to evaluate the level of air quality impacts.

1.3.3.1 Onsite Stationary Source Emissions

Onsite stationary sources have the potential to emit criteria pollutants, including NO_x, CO, ROG, SO₂, and PM₁₀/PM_{2.5}.

A. Existing Plant Emissions: The existing Asphalt Plant No. 1 is currently permitted to produce up to 584,000 tons per year of hot mix asphalt (HMA). However, due to the aged plant equipment, the plant is currently only capable of producing a maximum of approximately 200,000 tons of HMA per year. The existing plant reports to the SCAQMD each year through the annual emission reporting (AER) program. Therefore, operational emissions rates for the existing plant were based on inventory data reported for the plant from 2009 through 2013, obtained from SCAQMD website (http://www3.aqmd.gov/webappl/fim/prog/emission.aspx?fac_id=116480).

B. New Plant Emissions: The proposed new plant would have a maximum designed capacity of 700,000 tons per year of HMA. Emissions calculations for the proposed project were based on the proposed maximum production capacity and the emission factors from the following sources, and the most stringent applicable emission control requirements were used in the emission calculations:

- EPA AP-42 Compilation of Air Pollutant Emission Factors
- Applicable emission standards and limits from SCAQMD source-specific rules
- Best Available Control Technology (BACT) emissions requirements under SCAQMD new source review rules.

Key assumptions used in the stationary source emissions estimates for the proposed project are described in the following subsections:

B.1 Drum Dryer Design Information and Key Assumptions

- Drum burner: 115 million British thermal units per hour (MMBTU/hour) maximum heat input rating, with a low NO_x burner, and natural gas fuel.
- Drum dryer emissions would be vented through a baghouse to control PM emissions. The baghouse would use a pulse jet system with a minimum of 85,000 cubic feet per minute (CFM) of air flow, with a baghouse leak detection system.

A summary of the emission factors used in the emission calculations and compliance evaluation is provided in Table 1-5.

Table 1-5. Summary of Drum Dryer Emission Factors

Pollutants	Emission Factors Used in Evaluation
ROG	0.024 lb/ton product, the ROG emission limit the proposed project would commit to.
NO _x	36 ppm at 3 percent oxygen in the exhaust flow. SCAQMD Best Available Control Technology (BACT) requirements for asphalt plants.
CO	EPA AP-42 Chapter 11.1 default emission factor.
SO ₂	EPA AP-42 Chapter 11.1 default emission factor.
PM ₁₀	0.01 grain/CFM, SCAQMD Rule 1155 PM emissions requirements for Tier 3 baghouses with filter surface area greater than 7,500 square feet.
PM _{2.5}	Assumed to be the same as PM ₁₀ .

Note:

All emission factors are at the exhaust stack of the baghouse.

B.2 Aggregate and RAP Processing and Conveyance

The aggregate and reclaimed asphalt pavement (RAP) handling equipment design information and key assumptions used in the emissions and modeling analysis include:

- HMA) product would consist of 97 percent aggregate and RAP. The remaining 3 percent would be asphalt cement.
- RAP and aggregate ratio would be up to 50 percent RAP.
- Large-sized RAP would be screened out and crushed in the recycle lumber-breaker. The RAP scalping screen and lumber-breaker would vent through their own small baghouse for PM control.
- Aggregates would be transferred to aggregate bins for storage. Aggregate from the storage bins would be transferred to conveyor belts and go through the scalping screen before it would go into the dryer. The aggregate scalping screen would have its own small baghouse for PM control.
- Total number of conveyor transfer points for aggregate and RAP would be 13.
- Total number of scalping screens would be 2.
- Water spray systems would be installed to keep the materials at sufficient moisture content to control the PM emissions from aggregate and RAP processing and conveyance. Water spray systems would be located at the aggregate off-loading hopper. The RAP system would have a dust suppression system to create a foam to control the PM emissions.

PM emissions would be the only pollutants expected from the aggregate and RAP processing and conveyance. Uncontrolled PM emissions from the aggregate and RAP conveyance transfer points, the scalping screens, and the RAP lumber-breaker were estimated using default emission factors from EPA AP-42 Chapter 11.19.2: *Crushed Stone Processing and Pulverized Mineral Processing*, and a 95 percent control efficiency was applied to calculate the controlled emissions. When PM emission factors are available in EPA AP-42 instead of the PM₁₀ and PM_{2.5} emission factors, PM₁₀ and PM_{2.5} emission factors were derived based on SCAQMD document, *Final - Methodology to Calculate PM_{2.5} and PM_{2.5} Significance Thresholds, Appendix A – Updated CEIDARS Table List with PM_{2.5} Fractions* (SCAQMD 2006).

Emissions of NO_x, CO, SO₂, and ROG are not expected from the aggregate and RAP processing and conveyance. In addition, it was assumed that the TAC compounds in the PM emissions from the aggregate and RAP processing would be negligible, and they were not quantified.

C. Asphalt Silo Filling and Truck Loadout: Asphalt silo filling and truck loadout emissions would be treated by a blue smoke control system. Uncontrolled emissions from the asphalt silo filling and truck loadout were estimated using the default PM and ROG emission factors from EPA AP-42 Chapter 11.1. The estimated control efficiency of the proposed blue smoke control system was not available at the time of this evaluation. A capture efficiency of 90 percent and control efficiency of 95 percent were used to estimate the controlled PM and ROG emissions from the blue smoke control system, based on Blue Smoke Control Efficiency, Hot Mix Asphalt Operations by Butler Justice Inc.

D. Asphalt oil Storage Tanks: Three asphalt oil storage tanks with 35,000-gallon capacities would be installed at the plant. The emission factors and assumptions used to estimate the asphalt oil storage tank emissions are as follows:

- Total asphalt oil throughput was estimated based on the assumption that 3 percent of the HMA product would be asphalt oil.
- ROG emissions from the storage tanks were modeled using EPA's Tanks Program 4.09d. Vapor pressure and molecular weight of asphalt oil were obtained from EPA AP-42 Chapter 11.1.
- CO emission factors of the asphalt cement storage tanks were obtained from EPA AP-42 Chapter 11.1.

PM emissions from the asphalt cement storage tanks would be negligible, and NO_x and SO₂ emissions would not be expected from the asphalt oil storage tanks.

E. Oil Heater: The asphalt oil heater would be natural gas-fired, 2.9 MMBTU/hour heat input rating with an ultra-low NO_x burner. Emission factors used for the analysis include the following:

- NO_x emissions were estimated based on SCAQMD Rule 1146.1 emission requirements of 9 ppm at 3 percent oxygen for boilers and process heater rated greater than 2 MMBTU/hour but less than 5 MMBTU/hour.
- CO emissions were estimated based on SCAQMD BACT requirements for boilers and heaters, 50 ppm for firetube type, or 100 ppm for watertube type. 100 ppm was used in the emission estimate to be conservative.

ROG, SO₂, and PM emissions from the oil heater were estimated using EPA AP-42 default emission factors for external combustion equipment.

F. Stockpile: Fugitive PM₁₀ and PM_{2.5} emissions from RAP stockpile was estimated using emission factors from SCAQMD Particulate Matter (PM) Emission Factors for Process/Equipment at Asphalt, Cements, Concrete, and Aggregate Production Plants (SCAQMD, 2014).

1.3.3.2 Offsite Vehicle Emissions

Operation of the project would include travel by raw material and product delivery trucks. The following methodology and assumptions apply to both the existing plant and proposed project offsite vehicle emissions.

Workers: Worker commute trip emissions were estimated using passenger car/light duty vehicle emission factors from ARB's EMFAC2014 database. A round trip distance of 75 miles was used. It was assumed 12 workers would be needed for the plant operation. This is the same as the existing facility operation, therefore, the proposed project would not cause an increase of worker commute to the facility.

Delivery Trucks:

- The number of truck trips were calculated based on the estimated amount of raw material and product, derived from the existing and proposed production rates, and the typical capacity of a truck load for a particular type of material. The proposed project would use larger capacity trucks (18-ton

trucks) than what are currently used for the existing plant (12-ton trucks) for HMA transport to reduce the number of haul truck trips in order to minimize emissions.

- The proposed project would increase the percentage of trucks for RAP and HMA product delivery fueled by compressed natural gas (CNG) from the existing level of 20 percent to the proposed level of 90 percent.
 - Round trip distances for raw material delivery, depending on the types of materials, were estimated based on the anticipated trip routes in SCAQMD.
- Round trip distance for product delivery was set at an average of 20 miles.

The estimated total vehicle miles traveled (VMT) by haul truck for the existing plant and proposed project operations are summarized in Table 1-6. The VMT for CNG- and diesel-fueled trucks for the existing plant and the proposed project operations used in the vehicle emission calculations are shown in Table 1-6.

Table 1-6. Operational Vehicle - VMT

Material Type	Existing Condition (2015)		Proposed Project (2018)	
	CNG VMT	Diesel VMT	CNG VMT	Diesel VMT
RAP	667	2,667	33,950	3,772
Oil	-	57,200	-	120,120
Aggregates	-	944,444	-	1,886,111
HMA (Product)	66,667	266,667	700,000	77,778
Total VMT	67,333	1,270,978	733,950	2,087,781

Diesel-fueled vehicle emissions were estimated using the vehicle emissions factors from EMFAC2014. Emission factors for heavy heavy-duty trucks in SCAQMD were used in the emission calculations.

The proposed project operation would increase the percentage of VMT for CNG-fueled product delivery trucks. Unlike diesel- and gasoline-fueled vehicles that have detailed emission inventory information in EMFAC2014, the alternative-fuel vehicle emission factors were not available in EMFAC2014. Emissions from CNG-fueled trucks were estimated using emission factors and information collected from studies or surveys that compare the general emission levels of similar types of natural gas-fueled vehicles and diesel-fueled vehicles, such as the EPA SmartWay Truck Tool (EPA, 2012), ARB suggested emission factors for alternative fuel vehicles (ARB, 2010), and SCAQMD emission factors. The rates of emissions reductions or increases for the liquefied natural gas (LNG)/CNG-fueled vehicles compared to diesel-fueled vehicles in the referenced studies and the ARB emission factors are summarized in Table 1-7.

Table 1-7. Summary of CNG-Fueled Heavy-Duty Truck Emissions Rates Compared to Emissions Rates for Similar Diesel-Fueled Trucks

Pollutant	Percent Change Compared to Similar Diesel Trucks - Natural Gas Garbage Trucks ^a	Percent Change used in EPA SmartWay Truck Tool ^b	Percent Change Tested by SCAQMD ^c	ARB Emission Factors ^d	Emission Reduction from Diesel Emissions/Emission Factor Used for the Analysis
ROG	-69 to -83	NA	NA	NA	-69 percent
CO	-11 to +200	NA	NA	NA	200 percent
NO _x	-32 to -85	-17	-50 to -73	3.5 g/mile	3.5 g/mile

Table 1-7. Summary of CNG-Fueled Heavy-Duty Truck Emissions Rates Compared to Emissions Rates for Similar Diesel-Fueled Trucks

Pollutant	Percent Change Compared to Similar Diesel Trucks - Natural Gas Garbage Trucks ^a	Percent Change used in EPA SmartWay Truck Tool ^b	Percent Change Tested by SCAQMD ^c	ARB Emission Factors ^d	Emission Reduction from Diesel Emissions/Emission Factor Used for the Analysis
PM	-85 to -94	-86	-86	0.029 g/mile	0.029 g/mile

Source:

g/mile = grams per mile

^a Inform Inc. 2003

^b EPA, 2012

^c SCAQMD, 2013

^d ARB, 2010.

Detailed assumptions and emission calculations for operations emissions for the proposed project are shown in Attachment B.

1.4 Environmental Consequences

Air quality impacts associated with the proposed project construction and operation were analyzed using the methodologies described in Chapter 1.4. As discussed below, the project would result in temporary, less-than-significant air quality impacts from construction, and less-than-significant air quality impacts from operational emissions. The proposed project would not expose sensitive receptors to substantial pollution concentrations, and would not affect a substantial number of people with objectionable odors. The proposed project would not conflict with the regional air quality plans or cause new violations to the NAAQS and CAAQS. Detailed impact discussions are presented in the following sections.

1.4.1 Short-Term Construction Impacts

The proposed project would comply with SCAQMD Rule 1166 for the excavation of volatile organic compound (VOC) contaminated soil during construction, and Rule 403 to minimize fugitive dust emissions. Best management practices (BMPs), such as maintaining equipment in good operational conditions and limiting vehicle idling time, would be implemented to reduce emissions from construction. Fugitive dust control measures specified in SCAQMD Rule 403, Table 1, include but are not limited to the following:

- General – Apply water in sufficient quantities to prevent the generation of visible dust plumes. Implement BMPs from the BMP manual to prevent vehicle track-out.
- For Bulk Materials – Maintain storage piles to avoid steep sides or faces.
- For Trenching – Stabilize surface soils where trencher or excavator and support equipment would operate, and stabilize soils at the completion of trenching activities. For deep trenching activities, pre-trench to 18 inches, soak soils via the pre-trench, and resume trenching. Wash mud and soils from equipment at the conclusion of trenching activities to prevent crusting and drying of soil on equipment.
- For Backfilling- Stabilize backfill material and soil. Empty loader bucket slowly so that no dust plumes are generated. Minimize drop height from loader bucket.

- For Staging Areas – Stabilize staging areas during use, and stabilize staging area soils at project completion. Limit the size of staging areas. Limit vehicle speeds to 15 miles per hour. Limit the number and size of staging area entrances/exits.
- For Off-road Traffic and Parking Areas – Stabilize all off-road traffic and parking areas, and direct construction traffic over established routes. Barriers would be used to ensure vehicles are only used on established parking areas and routes.
- Truck loading/Material Transport – Use tarps or suitable enclosures on haul trucks, pre-water material prior to loading, and ensure 6 inches of freeboard.

Potential construction emissions and impacts during construction phase of the project are discussed in the following sections.

1.4.1.1 Criteria Pollutants Emissions

Construction of the proposed project would cause emissions from the construction equipment, worker commute, haul truck travel, and earthmoving activities.

Construction emissions from the proposed project were estimated using methodologies described in Chapter 1.4. Emissions were estimated based on a construction duration of no less than 22 months. Vehicle trips associated with the excavated soil exporting would be spread throughout a period of no less than 4 months and contaminated soil would be transported by truck and trailer, to reduce air pollution emissions on a daily basis and minimize the potential for significant project-related air quality impact to occur. A minimum of 22 months of construction, a minimum of 4 months to export the contaminated soil, and use of truck and trailers to export the soil would be the adhered to as an environmental commitment for the project, as part of the Operation Management Plan.

The estimated maximum daily construction emissions are summarized in Table 1-8, and compared to the SCAQMD CEQA construction emissions significance thresholds. Daily construction emissions of NO_x, CO, ROG, SO₂, PM₁₀, and PM_{2.5} would be below the SCAQMD CEQA significance thresholds. Therefore, emissions from the proposed project construction would have a less than significant impact on air quality.

Table 1-8. Worst Case Daily Construction Emissions

	ROG lb/day	NO _x lb/day	CO lb/day	SO ₂ lb/day	PM ₁₀ lb/day	PM _{2.5} lb/day
2016	7.2	96.1	61.0	0.2	14.6	6.7
2017	9.0	85.7	58.5	0.2	10.4	5.3
2018	8.9	28.0	22.0	0.1	2.6	1.5
Worst-case Emissions	9.0	96.0	60.3	0.2	14.5	6.7
SCAQMD Threshold	75	100	550	150	150	55
Exceed Thresholds?	NO	NO	NO	NO	NO	NO

Note: Emissions were modeled using CalEEMod.

In conclusion, the proposed project construction emissions of criteria pollutants would be below the SCAQMD CEQA significance thresholds. The construction activities would comply with applicable SCAQMD rules and implement BMPs to minimize air pollutants emissions. The air quality impacts would be temporary and less than significant during construction.

1.4.1.2 Toxic Air Contaminants Emissions

In addition to criteria pollutants, the project construction would also have the potential to emit TACs from the onsite construction activities and offsite vehicle trips. TAC emissions from construction would be short term in nature, and long-term exposures to carcinogenic air toxics such as diesel particulate matter would not occur. The proposed project construction would implement BMPs, such as minimizing idling times and maintaining equipment in good condition. These measures would also reduce air toxic emissions and minimize the exposure of nearby receptors to the construction-related pollutants.

Excavation of the soil at the proposed project may cause emissions of volatile organic compounds including TACs from contaminated soil. Excavation would follow SCAQMD Rule 1166 monitoring and mitigation requirements to minimize VOC emissions from the excavation. Contaminated soil will be stored in sealed containers and stockpiles will be covered. Any VOC contaminated soil would be removed from the site within 30 days. Therefore, TAC emissions would be well controlled during the excavation. Therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations during construction.

1.4.1.3 Asbestos

The proposed project construction would involve excavation of the existing site. However, the project site is not located in an area with known naturally occurring asbestos (NOA); therefore, NOA is not expected to be encountered during excavation.

Demolition of the buildings and structures of the existing plant would comply with SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation Activities. Asbestos surveying, notification, handling, disposal, labeling, and documentation will be performed following Rule 1403 requirements. The material containing asbestos would be removed by qualified professionals. A California-licensed and registered asbestos abatement contractor would remove asbestos prior to demolition. Therefore, the project demolition and excavation activities would not cause significant impacts of asbestos.

1.4.2 Long-term Operational Impacts

The proposed project is designed to replace the existing asphalt plant, which has been operating for many years with outdated technology and equipment, with modernized technology. The new plant would operate more efficiently and would be required to meet more stringent emission standards for onsite equipment and utilize lower emission vehicles. The following sections discuss the potential air quality impacts during the project operation.

1.4.2.1 Criteria Pollutants Emissions

During project operation, the proposed project would utilize the latest technology and comply with the most stringent emission standards applicable to the selected equipment and the proposed operation. However, the proposed project would cause a net emission increase due to the overall increase of the production rate on a daily and annual basis. Operational emissions include those from the onsite equipment, as well as vehicle trips made by the workers and haul trucks delivering raw material and HMA product.

Operational emissions were estimated using the methodology presented in Chapter 1.4. Because the existing plant would be demolished in order to build the proposed project, net emission increases of the proposed project were calculated as the difference between the emissions of the proposed project and the existing plant. The emissions of the existing plant, the proposed project, and the net increase due to the proposed project are summarized in Table 1-9. The net emission increase of the proposed project were compared to the SCAQMD CEQA significance thresholds. As shown in the table, net increase from project-related emissions of air pollutants would be lower than the SCAQMD CEQA significance thresholds for operation.

Table 1-9. Daily Operational Emissions

		ROG	NO_x	SO_x	CO	PM₁₀	PM_{2.5}
Proposed Project - Onsite Equipment	ton/year	9.72	4.61	1.20	45.63	8.32	7.10
Proposed Project - Offsite Vehicle	ton/year	0.34	14.98	0.05	2.29	0.44	0.23
Existing Plant - Onsite Equipment	ton/year	3.89	3.47	0.23	21.14	3.60	3.60
Existing Plant - Offsite Vehicle	ton/year	0.52	13.20	0.02	2.46	0.43	0.31
Net Annual Emissions Increase	ton/year	5.66	2.91	0.99	24.33	4.73	3.42
Net Daily Emissions Increase	lb/day	31.01	15.94	5.42	133.31	25.94	18.73
SCAQMD Threshold	lb/day	55	55	150	550	150	55
Exceed threshold?	lb/day	No	No	No	No	No	No

Note:

Net increase refers to the difference between the proposed project and the existing condition, because the existing plant would be demolished and associated emissions removed.

1.4.2.2 Toxic Air Contaminants

During project operation, predominant TAC emissions from the plant would be mostly emitted from the drum dryer. Small quantities of TACs emissions may also be emitted from the stack of the blue smoke control device serving the asphalt silo and truck loadout, and the oiler heater. The aggregate and RAP processing equipment would not emit TACs. Both the drum dryer and the oil heater would use natural gas fuel, a cleaner burning fuel medium. Operation of the asphalt plant would be subject to SCAQMD permitting requirements and the new source review rules. TAC emissions from the equipment would be subject to SCAQMD's Rule 1401 requirements for new or modified stationary sources. Rule 1401 requires that no project be approved unless the predicted health risks would be below 10 in one million for incremental cancer risk, and the chronic and acute hazard indexes would be below 1.0. The proposed project would comply with applicable SCAQMD rules, including Rule 1401 for TACs, and would have health risks below the Rule 1401 thresholds at the maximally impacted worker and residents. Considering the distance between the plant and the sensitive receptors, the health risks of the plant TAC emissions would be expected to be lower than the SCAQMD CEQA significance thresholds. Therefore, the plant equipment operation would not be expected to cause substantial exposures to TACs at any sensitive receptor locations.

TAC emissions would also be expected from the haul trucks that would be used to deliver the raw materials to the plant and to ship the HMA products from the plant. The main TAC of concern from the vehicle emissions in the SCAB is DPM). Efforts for reducing DPM emissions have been taken at federal, state, and local levels. EPA's Control of Hazardous Air Pollutants from Mobile Sources (*Federal Register*, Vol. 72, No. 37, page 8430, February 26, 2007) requires controls that would dramatically decrease mobile source air toxic emissions through cleaner fuels and cleaner engines. At state and local levels, the ARB DPM Risk Reduction Plan and the various airborne toxic control measures (ATCMs) implemented in recent years expect to reduce DPM emissions and the associated health risks by 85 percent or more by 2020 in California (ARB, 2000). SCAQMD Rule 1196 requires public heavy duty vehicle fleets to acquire alternative-fuel vehicles when procuring or leasing such vehicles, which would aid in the reduction of air toxic and criteria pollutant emissions. With implementation of these regulatory requirements to reduce emissions of air toxics, especially DPM, cancer risks due to DPM in the region are expected to decrease in future years regardless of the regional VMT growth and increase, with or without the proposed project.

The number of vehicle trips would increase from the 2015 existing level when the proposed project begins operation in 2018, due to the increased production rate of the new plant. However, the proposed project would incorporate emission reduction strategies to minimize the air quality and health risk impacts from the proposed project. The proposed project would not expose sensitive receptors to significant amounts of TAC emissions, especially DPM emissions, for the following reasons:

- The proposed project would utilize vehicles with higher capacity for HMA delivery to reduce the number of vehicle trips during operation. Reduced vehicle trip means less TAC emissions.
- The project would also increase the percentage of trucks for RAP and product delivery fueled by CNG from the existing level of 20 percent to the proposed level of 90 percent. As a result, the majority of the haul trucks travelling in and out of the new plant would be CNG-fueled. The number of diesel-fueled trucks operating for the new plant remains similar to the existing number. Therefore, the proposed project would not substantially increase TAC, especially DPM emissions from the project operation, even with increased vehicle trips.
- For raw material delivery, the proposed project would increase the percentage of RAP used in the HMA from approximately 7.5 to 50 percent. RAP materials are typically readily available locally while aggregates require hauling from a quarry that is usually located much farther away from the plant. Therefore, increasing the RAP usage in HMA would decrease the haul truck trip distance needed to deliver the material, and consequently reduce the vehicle TAC emissions and the related health risks.
- Because the closest residential areas would be located farther away from the plant and the haul truck routes under the proposed project, the haul trucks coming in and out of the plant would not be expected to affect these sensitive receptors.

As discussed above, the proposed project would not be expected to have substantial emission increase of TACs associated with the plant equipment operation or vehicle travel. Therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations during project operation.

1.4.2.3 CO Hot Spots near Intersections

While SCAQMD's emission thresholds are for the purposes of attainment of NAAQS and CAAQS on a regional level, CO is considered a localized problem under Section 9.4 of the *SCAQMD CEQA Air Quality Analysis Guidance Handbook*; thus, additional analysis is required when a project is likely to expose sensitive receptors to CO hotspots.

CO hot spots normally occur at locations where large numbers of vehicles idle, such as congested intersections. Based on the Traffic Study performed for the proposed project, the additional vehicle trips needed to deliver raw material or ship the HMA product would not be expected to cause a deterioration of the LOS at nearby signalized intersections (CH2M, 2015). Therefore, the limited number of increased truck trips associated with the proposed project would not cause additional traffic congestions. The proposed project is not anticipated to increase local CO concentrations to levels that would cause or contribute to new violations of the CO air quality standards.

Because both the construction and operational emissions would be below the SCAQMD CEQA thresholds and the proposed project would not cause CO hot spots at intersections, the proposed project is not expected to violate any air quality standard or contribute substantially to an existing or projected air quality violation during project operation. This proposed project would have a less than significant impact to air quality.

1.4.2.4 Odor

According to the *SCAQMD CEQA Air Quality Analysis Guidance Handbook*, odor nuisances are associated with land uses and industrial operations, including agricultural uses, wastewater treatment plants, food

processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass-molding facilities (SCAQMD, 1993). The proposed project would not fall into any of these categories. Operation of the proposed project would result in fugitive dust and combustion emissions from the drum dryer, which would not include odorous compounds at the low concentrations expected. Evaporative ROG emissions from the HMA storage silo and truck loadout would be controlled by a blue smoke control device to minimize pollutant emissions, as required by SCAQMD. The odor emissions, if any, would be unlikely to cause a nuisance to the residential areas that are located more than 1,500 feet away. Because the proposed project operation would not be a source of objectionable odors that would affect a substantial number of people, the project impact due to odors would be less than significant.

1.4.3 Cumulative Impacts

According to the SCAQMD white paper, *Potential Control Strategies to Address Cumulative Impacts from Air Pollution, Appendix D Cumulative Impact Analysis Requirements Pursuant to CEQA* (SCAQMD, 2003), projects that do not exceed the SCAQMD CEQA significance thresholds are generally not considered to be cumulatively significant. The proposed project area is in nonattainment for ozone and PM_{2.5} under NAAQS, and in nonattainment for ozone, PM₁₀, and PM_{2.5} under CAAQS. As shown in Tables 1-8 and 1-9, the emissions increase of non-attainment pollutants (PM₁₀, PM_{2.5}, and the ozone precursors [NO_x and ROG]) due to the proposed project, would not exceed the CEQA thresholds of significance set by SCAQMD for construction and operation.

According to the SCAQMD white paper cited above, because the project-specific emissions increases would be less than the CEQA thresholds, the proposed project would not result in a cumulatively considerable contribution to a significant cumulative impact. The cumulative impact from proposed project construction and operation would be less than significant.

1.5 Mitigation Measures

The analysis undertaken has determined that this proposed project would not result in significant adverse impacts related to air quality. Therefore, no mitigation measures would be required.

Greenhouse Gases

Greenhouse gases (GHGs) include naturally occurring and anthropogenic gases, such as carbon dioxide (CO₂), methane, NO_x, hydro-chlorofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs absorb infrared radiation, trap the energy from the sun, and help maintain the temperature of the Earth's surface, creating a process known as the greenhouse effect. The accumulation of GHGs in the atmosphere influences the long-term range of average atmospheric temperatures. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce economic and social consequences across the globe.

The analysis of GHG impacts consists of a summary of the regulatory framework to be considered in the decision-making process, a description of the existing conditions, thresholds for determining if the proposed ordinances would result in significant impacts, and anticipated impacts (direct, indirect, and cumulative). The potential for impacts to GHG emissions has been analyzed in accordance with Appendix G of the State CEQA Guidelines.

2.1 Regulatory Framework

2.1.1 Federal Regulations

Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency. Federal agencies are also directed to participate in the Interagency Climate Change Adaptation Task Force, which is developing a national strategy for adapting to climate change.

EPA, in conjunction with the National Highway Traffic Safety Administration (NHTSA), issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010. The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce GHG emissions by an estimated 960 million metric tons and save 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (EPA, 2015).

On August 28, 2012, EPA and NHTSA issued a joint final rulemaking to extend the national program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model years 2017 through 2025 standards, projections are that approximately 4 billion barrels of oil would be saved and 2 billion metric tons of GHG emissions would be eliminated (EPA, 2015). These standards would cut GHG emissions and domestic oil use significantly. The agencies estimate that the combined standards would reduce CO₂ emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles (EPA, 2015).

On August 3, 2015, the EPA issued the Clean Power Plan, which put the nation on track to cut harmful pollution from the power sector by 32 percent below 2005 levels, while also cutting smog-and soot-forming emissions that threaten public health by 20 percent (EPA, 2015).

Other GHG related federal regulations include the Mandatory Greenhouse Gas Reporting Rule that requires facilities emit 25,000 metric tons per year or more of CO₂e emissions to report emissions to EPA, and the revised GHG Tailoring Rule that requires implementation of BACT) for sources under the Prevention of Significant Deterioration and Title V Operating Permit programs, and increase GHG emissions by 75,000 tons per year.

2.1.2 State Regulations

With the passage of several pieces of legislation including state Senate and Assembly Bills and Executive Orders (EOs), California launched an innovative and proactive approach to address GHG emissions and potential climate change-related impacts:

- AB 1493, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires ARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009 model year.
- EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to year 2000 levels by 2010, year 1990 levels by 2020, and 80 percent below year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of AB 32.
- AB 32, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." In December 2008, the ARB approved the initial Scoping Plan, which included a suite of measures to sharply cut GHG emissions. Key elements of the initial Scoping Plan included the following:
 - Expand and strengthen energy efficiency programs, including building and appliance standards.
 - Increase electricity generation from renewable resources to at least 33 percent of the statewide electricity mix by 2020.
 - Establish targets for passenger vehicle-related GHG emissions for regions throughout California and pursue policies and incentives to achieve those targets. Included with this strategy is support for the development and implementation of a high speed rail system to expand mobility choices and reduce GHG emissions.
 - Adopt and implement measures pursuant to existing State laws and policies, including California's clean car standards and the Low Carbon Fuel Standard.
 - Develop a cap-and-trade program to ensure the target is met, while providing flexibility to California businesses to reduce emissions at low cost.
- In May 2014, ARB approved the first update to the Climate Change Scoping Plan (First Update) (ARB, 2014a). The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other California policy priorities for water, waste, natural resources, clean energy, transportation, and land use.
- EO S-20-06 (October 18, 2006): This EO establishes the responsibilities and roles of the Secretary of the Cal-EPA and state agencies with regard to climate change.
- EO S-01-07 (January 18, 2007): This EO set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.
- SB 97, Chapter 185, 2007, Greenhouse Gas Emissions: SB 97 required the Governor's Office of Planning and Research to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective March 18, 2010.
- SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning

Organization for each region must then develop a "Sustainable Communities Strategy" that integrates transportation, land use, and housing policies to plan for the achievement of the emissions target for their region.

- SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires California's long-range transportation plan to meet California's climate change goals under AB 32.
- Renewables Portfolio Standard (RPS): Established in 2002 under SB 1078, accelerated in 2006 under Senate Bill 107, and expanded in 2011 under SB 2, California's RPS is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020.
- California Executive Order B-30-15, 2015. California EO B-30-15, which was signed by Gov. Brown in April 2015, calls for a California GHG reduction target of 40 percent below 1990 levels by 2030. This is the most aggressive GHG emissions reduction goal in North America.

2.1.3 SCAQMD Climate Actions

SCAQMD has promoted a number of programs to combat climate change. SCAQMD's first formal action to fight GHG occurred in 1991, with the issuance of its Policy on Global Warming and Stratospheric Ozone Depletion, targeting a transition away from CFCs as an industrial refrigerant and propellant in aerosol cans. In the early 1990s, SCAQMD adopted several regulations regarding ozone-depleting compounds, which served as models for state and federal agencies.

On September 5, 2008, the SCAQMD Governing Board approved the SCAQMD Climate Change Policy, which directs SCAQMD to assist the state, cities, local governments, businesses, and residents in areas related to reducing emissions that contribute to global warming.

On September 11, 2011, SCAQMD adopted an air quality-related energy policy to help guide a unified approach to reducing air pollution while addressing other key environmental concerns, including environmental justice, climate change, and energy independence. The policy integrates air quality, energy, and climate change issues in a coordinated and consolidated manner, outlines 10 policies and 10 action steps to help meet federal health-based standards for air quality in the SCAB while promoting the development of zero- and near-zero emission technologies (SCAQMD, 2011).

2.1.3.1 Local Climate Actions

The City of Los Angeles released its climate action plan, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, in May 2007 (City of Los Angeles, 2007). The Plan sets forth a goal of reducing the City's greenhouse gas emissions to 35 percent below 1990 levels by the year 2030, one of the most aggressive goals of any big city in the United States. This climate action plan includes more than 50 actions to reduce GHG emissions, as well as measures to adapt to the effects of climate change.

Climate LA (City of Los Angeles, 2008) is the implementation program that provides detailed information about each action item discussed in the Green LA framework. Action items range from harnessing wind power for electricity production and energy efficiency retrofits in City buildings, to converting the City's fleet vehicles to cleaner and more efficient models, and reducing water consumption.

2.2 Existing Conditions

In the United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest category of GHG-emitting sources (ARB, 2013). In 2013, the most recent year for which data are provided, the annual California statewide GHG emissions were 459.3 million metric tons of CO₂-equivalent (ARB, 2015c). The transportation sector accounts for

about 37 percent of the statewide GHG emissions inventory. The industrial sector accounts for about 20 percent of the total statewide GHG emissions inventory. The dominant GHG emitted is CO₂, primarily from fossil fuel combustion.

2.3 Impact Assessment Methodology

2.3.1 Significance Thresholds

2.3.1.1 CEQA Criteria

The GHG emission impacts of the proposed project might occur on a regional and global scale. The potential for the proposed project to result in impacts related to GHG emissions was analyzed in relation to the questions contained in Appendix G of the State CEQA Guidelines, specifically, would the proposed project have any of the following effects:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

2.3.1.2 Significance Thresholds

Currently, federal and state agencies have not adopted a GHG significance threshold that could be used in reviewing the proposed project. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The interim threshold consists of five tiers of standards that could result in a finding of less than significant impact. The tiers include CEQA exemptions, consistency with regional GHG budgets, less-than-significant screening levels for stationary sources of industrial projects (10,000 metric tons/year CO₂e) and commercial/residential projects (3,000 metric tons/year CO₂e), performance standards (i.e., 30 percent less than business as usual), and carbon offsets. This SCAQMD GHG significance threshold does not necessarily apply to the proposed project because the SCAQMD is not the lead agency.

On a local level, the City has not adopted a significance threshold for GHG emissions and climate change. Neither CEQA statutes nor CEQA guidelines establish thresholds of significance or particular methodologies for performing an impact analysis. The determination of significance is left to the judgment and discretion of the lead agency.

For the proposed project, the SCAQMD's interim GHG threshold for industrial facilities would be used as a reference level to evaluate the GHG impacts. Construction emissions would be amortized over the life of the proposed project, defined as 30 years, added to the project's proposed stationary sources operational emissions, and compared to the 10,000 metric tons threshold.

2.3.2 Construction Greenhouse Gas Emissions Estimate

GHG emissions would be from fuel combustion in construction equipment and vehicles. GHG emissions from project construction were estimated using CalEEMod, using the same approach and assumptions described in Chapter 1.4 for criteria pollutants. Detailed assumptions and emission calculations are provided in Appendix A.

2.3.3 Operation Greenhouse Gas Emission Estimate

The proposed project would have operational GHG emissions from fuel use in onsite stationary sources and offsite vehicle travel for delivery of raw materials and products. Electricity use would result in

indirect GHG emissions. Operational GHG emissions calculation methodologies are discussed in the following sections. Detailed emission calculations are provided in Attachment B.

2.3.3.1 Onsite Stationary Source Emissions

Onsite stationary sources would have the potential to emit GHG gases from fuel combustion in the drum drier and the oil heater. Related emissions increases were calculated as the differences in emissions between operation of the existing plant and operation of the proposed project.

A. Existing Plant Emissions: The AER report submitted by the plant to the SCAQMD each year does not include emissions of GHG. Therefore, operational GHG emissions for the existing plant were estimated by scaling the GHG emissions estimated for the proposed plant operation, mainly for fuel combustion in the drum dryer and the oil heater, assuming that the GHG emissions from the onsite equipment operation would be proportional to the HMA production rate. In addition, even though the existing plant is permitted for a much higher annual production rate, the actual HMA production rate of 200,000 tons per year at the facility was conservatively used for the GHG emissions calculations.

B. New Plant Emissions:

Equipment Direct Emissions: The proposed project production rate is 700,000 tons of HMA per year. GHG emissions for the proposed drum dryer were based on Drum Mix Hot Asphalt Plants emission factors in EPA AP-42 Chapter 11. For the oil heater, GHG emissions were estimated using the 2015 default emission factors from the Climate Registry for boilers.

Indirect Emissions from Electricity Usage: For GHG emissions associated with generating the power needed to operate the plant, the GHG emission factors were obtained from EPA eGRID2012 Summary Tables for California (EPA, 2015). Electricity demand for the existing plant and proposed project are estimated to be approximately 125 kilowatts and 350 kilowatts, respectively. The maximum allowable operating hours of 10 hours per day were used to calculate the total power that would be consumed to operate the plant.

2.3.3.2 Offsite Vehicle Emissions

GHG emissions from diesel vehicles delivering the raw material and HMA products were estimated using the same approach and assumptions as described in Chapter 1.4 for criteria pollutants, for both the existing plant and the proposed project operation.

For CNG vehicles, the 2015 Climate Registry Default Emission Factors (Climate Registry, 2015) for vehicles using LNG fuel was used. LNG and CNG trucks were assumed to have the same emissions with the same fuel consumption. The emission factor for CO₂ in kilograms per cubic foot of LNG was converted to gram per vehicle mile using the fuel economy and volume correction factors for LNG vehicles from EPA's SmartWay 2.0.11 Truck Tool – Technical Documentation (EPA, 2012). CO₂ equivalent (CO₂e) emission factors of LNG truck travel were calculated using the global warming potentials of CO₂, CH₄, and N₂O.

2.4 Environmental Consequences

GHG emissions increases would occur during project construction and operation. As discussed in the previous section, GHG from the project construction would include emissions from fuel combustion in construction equipment, haul trucks, and worker commute vehicles. For project operation, GHG emissions from fuel combustion in the drum dryer and oil heater would contribute to the direct GHG emissions from onsite equipment. Indirect GHG emissions associated with the plant operation would include the emissions due to power generation for the plant power needs. GHG emissions would also result from fuel combustion in the haul trucks used for material and product delivery.

Because the SCAQMD CEQA threshold for GHG is for stationary industrial sources, only the emissions associated with onsite equipment operation (drum dryer, oil heater, and electricity use) were used in the comparison to the thresholds. GHG emissions estimated for project construction were amortized over 30 years, as suggested by SCAQMD (SCAQMD, 2008). The amortized construction emissions were added to the project operation emissions and compared to the SCAQMD CEQA thresholds. The emission summary is presented in Table 2-1. Detailed project information and assumptions used for the GHG emission calculations are provided in Attachment A and B.

The total GHG emission increases from the existing plant operation, including those from fuel combustion in the onsite equipment and those associated with generating electrical power used by the plant, would be 8,605.7 metric tons per year of CO₂e. The GHG emission increase is less than the SCAQMD CEQA threshold of 10,000 metric tons per year. Therefore, the project would have less than significant impact related to GHG emissions.

Emission increases from offsite vehicle travel are estimated to be 2,530.0 metric tons per year of CO₂e. Because the SCAQMD GHG threshold does not apply to mobile source emissions, this emission increase was not included in Table 2-1.

Table 2-1. Project Greenhouse Gas Emissions Increase in CO₂e

	Onsite Equipment (mega tons/year)	Electricity Use (mega tons /year)	Amortized Construction Emissions (mega tons /year)	Total (mega tons /year)	SCAQMD Threshold (mega tons /year)	Exceed Threshold?
Existing Plant	3404.0	92.4	0	3496.4	10,000	NO
Proposed Project	11914.1	135.1	52.9	12102.1		
Net Increase	8510.1	42.7	52.9	8605.7		

CO₂e: Carbon dioxide equivalent

Net increase refers to the difference between the proposed project and the existing condition, because the existing plant would be demolished and associated emissions removed.

The proposed project would also implement BMPs during construction, some of which, such as limiting the vehicle operation time and maintain equipment in good operation condition, would also reduce GHG emissions. Therefore, proposed project construction would not conflict with the state GHG reduction goal, or the climate change plans of the County or the City.

Operation of the facility would require electrical power, but electricity for plant operations would be obtained from the state's power grid, and would therefore comply with the RPS and AB 32 Scoping Plan GHG reduction strategy to meet the AB 32 GHG emission reduction goal of 2020.

Although the First Update (ARB, 2014a) identified and described a long-term vision and near-term activities to put California on the path to its 2050 emission reductions goal, many factors would influence the state's ability to attain the 2050 GHG reduction goal, including changes in regulatory standards, fuel, transportation, and power generation technologies, growth in population, land use development patterns, and other factors that cannot presently be known. Because reaching a conclusion about the project's effect on compliance with the 2050 target identified in EO S-3-5 and the AB 32 would require speculation, the proposed project is unable to reach a determination about the proposed project's potential to result in a significant impact with regard to this goal. In all other respects the proposed project would not hinder or delay California's ability to meet the GHG reduction targets in

AB 32 and the Scoping Plan. Therefore, the impact from the proposed project would be less than significant.

2.5 Mitigation Measures

The analysis indicates that the proposed project would not result in significant adverse impacts related to GHG emissions and climate change. Therefore, no mitigation measures would be required.

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Attachment A
Project Construction Emission
Calculations

Construction Information Used for CalEEMod Emission Modeling

Phase Name	Duration		Construction Worker	Haul Truck	Haul Truck	Construction Equipment	Number	Hours/day	
	start	end							
						Excavator (2 for 15-20 days)	2	7	
						Backhoe (1-2 for 15-20 days)	2	7	
						Dump Trucks (2 for 15-20 days) onsite	2	7	
						Crane (1 for 10-12 days)	1	4	
Site Demolition, Removals & Prep Work (50d)	8/15/2016	10/21/2016	Worker: 10 RT Distance: 75 miles/RT	Total trips: Total number of RT Trips: 293 RT Distance: 20 miles, as the following: Building Debris: Volume: 80 cy (based on 4 trucks) Total number of RT Trips: 4 RT Distance: 20 miles Other Debris: Volume: 2950 cy Total number of RT Trips: 289 RT Distance: 20 miles	Tunnel filling: Total number of round trips: 79 RT distance: 30 miles				
							Excavator (1 for 30-45 days)	1	7
							Loader (1 for 30-45 days)	1	7
							Backhoe (1 for 30-45 days)	1	7
							Dozer (1 for 10-20 days)	1	4
							Crane (1 for 5-8 days)	1	1
						Loader (1 for 5-10 nights)	1	2	
						Grader (1 for 10-15 nights)	1	7	
						Dozer (1 for 8-10 days)	1	4	
Hauling contaminated soil	9/28/2016	1/28/2017	NA	Contaminated Soil Export: Volume: 10,680 cy Total number of RT Trips: 649 RT Distance in SCAQMD: 144 miles/RT (based 71.4X2)	NA	NA	NA	NA	
						Pile Driver crane with hammer	1	7	
						Backhoe (1 for 20-25 days)	1	4	
						Forklift (1 for 30-45 days)	1	7	
						Flatbed truck (1 for 5-8 days)	1	2	
						Volumetric Trucks (2-4 for 20 days) onsite	4	4	
						Dump trucks (2 for 5-6 days) onsite	2	4	
						Loader (1 for 5-6 days)	1	4	
						Grader – blade (1 for 10 days)	1	7	
						Roller (1 for 6 days)	1	7	
						Water Truck (1 for 8-10 days)	1	7	
						Backhoe (1 for 20 days)	1	2	
						Loader (1 for 20 days)	1	2	
						Dump truck (1 for 6-8 days)	1	5	
						Roller (1 for 3-5 days)	1	4	
						Water truck (1 for 3-5 days)	1	2	
						Forklift (1 for 5-10 days)	1	4	
						Backhoe (1 for 50 days)	1	2	
						Forklift (1 for 40 days)	1	4	

Construction Information Used for CalEEMod Emission Modeling

Phase Name	Duration		Construction Worker	Haul Truck	Haul Truck	Construction Equipment	Number	Hours/day
	start	end						
						Roller (1 for 3-5 days)	1	4
						Water truck (1 for 10-15 days)	1	2
						Drill rig (1 for 5-10 days)	1	4
						Grader (1 for 10-15 days)	1	4
						Dump trucks (10-15 for 10-12 nights) offsite	15	0
						Loader (1 for 8-10 days)	1	4
						Water Truck (1 for 12-15 days)	1	4
						AC Paver (1 for 2-3 nights)	1	8
						AC Rollers (3 for 2-3 nights)	1	8
						220 ton hydraulic for heavy lifts. (1 for 10 days)	1	5
						All-terrain hydraulic 50 ton crane	1	7
						High reach man lifts (1) 120' knuckle boom and (1) 80' knuckle boom	2	4
						(2) Reach lift, fork lifts 10,000 lb. rating (2 for 50 days)	2	4
						(2) scissor lifts (2 for 50 days)	2	4
						(4) diesel welders portable to move around yard (4 for 50 days)	4	4
						(2) generators 65k (2 for 75 days)	2	7
						(1) skid loader (1 for 45 days)	1	7
						Flatbed truck (2-3 for 5 days)	3	2
						Reach lift, fork lifts 10,000 lb. rating (2 for 200 days)	2	4
						High reach man lifts (2 for 100 days)	2	4
						Skid loader (1 for 75 days)	1	2
						Water truck (1 for 100 days)	1	4
						All-terrain hydraulic 50 ton crane	1	7
						Scissor lifts (2 for 150 days)	2	4
						Flatbed truck (1 for 10 days)	1	2
						Loader (1 for 8-10 days)	1	4
						Water Truck (1 for 10-15 days)	1	7
						AC Paver (1 for 2-3 nights)	1	7
						AC Rollers (3 for 2-3 nights)	3	7
						PCC Volumetric or Concrete Mixer trucks (10-15 for 18 nights)	15	7
						Concrete Paving machine (1 for 3-4 days)	1	7

Notes:

Rule of hours: Overall usage is 60%=7 hours

Unless specifically adjusted by the construction engineer, the equipment hours were further adjusted using the following approach:

if the equipment only used partial days during a phase, the hours are as following:

- >70%: 7 hours
- 30%-70% 4 hours
- 15-30% 2 hours
- <15% 1 hour

Construction Emission Summary

Worst Case Daily Construction Emissions - Criteria Pollutants

	ROG lb/day	NOx lb/day	CO lb/day	SO2 lb/day	PM10 lb/day	PM2.5 lb/day
2016	7.2	96.1	61.0	0.19	14.6	6.7
2017	9.0	85.7	58.5	0.15	10.4	5.3
2018	8.9	28.0	22.0	0.06	2.6	1.5
SCAQMD Threshold	75	100	550	150	150	55
Exceed Thresholds?	NO	NO	NO	NO	NO	NO

Note: Emissions were modeled using CalEEMod.

Construction GHG Emissions

	CO2e metric tons
2016	447.4
2017	1002.1
2018	157.9
Total	1607.4

Note: Emissions were modeled using CalEEMod

Asphalt Plant #1
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	126.32	1000sqft	2.90	126,320.00	0
Other Asphalt Surfaces	2.10	Acre	2.10	91,476.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operationa I Year	2018

Utility Company

CO2 Intensity (lb/MWhr)	0	CH4 Intensity (lb/MWhr)	0	N2O Intensity	0
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1.3 User Entered Comments & Non-Default Data

Project Characteristics

- Land Use - project specific
- Construction Phase - project specific
- Off-road Equipment -
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment -
- Off-road Equipment - project specific
- Off-road Equipment - project specific

- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Trips and VMT - project specific
- Demolition - project specific
- Grading - project specific
- Architectural Coating - project specific

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	NumDays	18.00	30.00
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tblConstructionPhase	PhaseEndDate	8/9/2017	10/16/2017

tblConstructionPhase	PhaseEndDate	12/19/2018	3/23/2018
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tblGrading	MaterialImported	0.00	14,300.00
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tblOffRoadEquipment	UsageHours	8.00	4.00

tblOffRoadEquipment	UsageHours	7.00	2.00
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tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	390.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	2.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	79.00
tblTripsAndVMT	HaulingTripNumber	0.00	375.00
tblTripsAndVMT	HaulingTripNumber	571.00	293.00
tblTripsAndVMT	HaulingTripNumber	0.00	649.00
tblTripsAndVMT	HaulingTripNumber	1,788.00	695.00
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	700.00
tblTripsAndVMT	HaulingTripNumber	0.00	250.00
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	VendorTripNumber	36.00	0.00
tblTripsAndVMT	VendorTripNumber	36.00	0.00

tblTripsAndVMT	VendorTripNumber	36.00	0.00
tblTripsAndVMT	VendorTripNumber	36.00	0.00
tblTripsAndVMT	VendorVehicleClass		HDT_Mix
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	20.00	15.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	91.00	10.00
tblTripsAndVMT	WorkerTripNumber	91.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	10.00
tblTripsAndVMT	WorkerTripNumber	91.00	15.00
tblTripsAndVMT	WorkerTripNumber	91.00	15.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerVehicleClass		LD_Mix

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day											lb/day				
2016	7.2196	96.0537	61.0329	0.1913	11.1167	3.5068	14.6235	3.5167	3.2272	6.7439		18,972.7553	18,972.7553	1.5664	0.0000	19,005.6495
2017	9.0409	85.7466	58.5243	0.1540	6.4719	4.2706	10.3678	1.6711	3.9915	5.3187		14,693.3706	14,693.3706	2.6676	0.0000	14,749.3912
2018	8.8803	27.9705	21.9606	0.0600	1.8342	1.1983	2.6359	0.4810	1.1024	1.4781		5,746.6055	5,746.6055	0.9125	0.0000	5,765.7669
Total	25.1408	209.7708	141.5178	0.4053	19.4229	8.9757	27.6272	5.6688	8.3211	13.5406		39,412.7314	39,412.7314	5.1465	0.0000	39,520.8076

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day											lb/day				
2016	7.2196	96.0537	61.0329	0.1913	11.1167	3.5068	14.6235	3.5167	3.2272	6.7439		18,972.7553	18,972.7553	1.5664	0.0000	19,005.6495
2017	9.0409	85.7466	58.5243	0.1540	6.4719	4.2706	10.3678	1.6711	3.9915	5.3187		14,693.3706	14,693.3706	2.6676	0.0000	14,749.3912
2018	8.8803	27.9705	21.9606	0.0600	1.8342	1.1983	2.6359	0.4810	1.1024	1.4781		5,746.6055	5,746.6055	0.9125	0.0000	5,765.7669
Total	25.1408	209.7708	141.5178	0.4053	19.4229	8.9757	27.6272	5.6688	8.3211	13.5406		39,412.7314	39,412.7314	5.1465	0.0000	39,520.8076

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Demolition	Demolition	8/8/2016	9/9/2016	5	25	
2	Site Demolition, Removals and Prep	Demolition	8/15/2016	10/21/2016	5	50	
3	Utility	Building Construction	9/26/2016	2/1/2017	5	93	
4	Civil Work	Building Construction	9/26/2016	2/1/2017	5	93	
5	Contaminated Soil Export	Grading	9/28/2016	1/28/2017	5	88	
6	Rough Grading	Grading	9/28/2016	11/12/2016	5	33	
7	Plant Equipment Installation	Building Construction	1/19/2017	10/16/2017	5	193	
8	Building Construction	Building Construction	1/19/2017	3/23/2018	5	307	
9	First Paving	Paving	2/2/2017	3/20/2017	5	33	
10	Construct Foundation	Grading	4/12/2017	6/14/2017	5	46	
11	Final Grading	Grading	6/15/2017	6/28/2017	5	10	
12	Architectural Coatings	Architectural Coating	3/3/2018	3/23/2018	5	15	
13	Final paving	Paving	3/26/2018	5/4/2018	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 4,650; Non-Residential Outdoor: 4,650 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse	Load Factor
Building Demolition	Cranes	1	4.00	226	0.29
Building Demolition	Dumpers/Tenders	2	7.00	16	0.38
Building Demolition	Excavators	2	7.00	162	0.38
Building Demolition	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Site Demolition, Removals and Prep	Cranes	1	1.00	226	0.29
Site Demolition, Removals and Prep	Excavators	1	7.00	162	0.38
Site Demolition, Removals and Prep	Rubber Tired Dozers	1	4.00	255	0.40
Site Demolition, Removals and Prep	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Utility	Dumpers/Tenders	1	5.00	16	0.38
Utility	Forklifts	1	4.00	89	0.20
Utility	Off-Highway Trucks	1	2.00	400	0.38
Utility	Rollers	1	4.00	80	0.38
Utility	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Civil Work	Bore/Drill Rigs	1	4.00	205	0.50
Civil Work	Forklifts	1	4.00	89	0.20
Civil Work	Off-Highway Trucks	1	2.00	400	0.38
Civil Work	Rollers	1	4.00	80	0.38
Civil Work	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Rough Grading	Graders	1	7.00	174	0.41
Rough Grading	Rubber Tired Dozers	1	4.00	255	0.40
Rough Grading	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Plant Equipment Installation	Cranes	2	6.00	226	0.29
Plant Equipment Installation	Forklifts	6	4.00	89	0.20
Plant Equipment Installation	Generator Sets	2	7.00	84	0.74
Plant Equipment Installation	Off-Highway Trucks	3	2.00	400	0.38
Plant Equipment Installation	Skid Steer Loaders	1	7.00	64	0.37
Plant Equipment Installation	Welders	4	4.00	46	0.45

Building Construction	Forklifts	6	4.00	89	0.20
Building Construction	Off-Highway Trucks	2	2.00	400	0.38
Building Construction	Off-Highway Trucks	1	2.00	400	0.38
Building Construction	Skid Steer Loaders	1	2.00	64	0.37
First Paving	Graders	1	4.00	174	0.41
First Paving	Off-Highway Trucks	1	4.00	400	0.38
First Paving	Pavers	1	8.00	125	0.42
First Paving	Rollers	1	8.00	80	0.38
First Paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Construct Foundation	Cranes	1	7.00	226	0.29
Construct Foundation	Forklifts	1	7.00	89	0.20
Construct Foundation	Off-Highway Trucks	4	4.00	400	0.38
Construct Foundation	Other Construction Equipment	1	2.00	171	0.42
Construct Foundation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Final Grading	Dumpers/Tenders	2	4.00	16	0.38
Final Grading	Graders	1	7.00	174	0.41
Final Grading	Off-Highway Trucks	1	7.00	400	0.38
Final Grading	Rollers	1	7.00	80	0.38
Final Grading	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Architectural Coatings	Air Compressors	1	6.00	78	0.48
Final paving	Off-Highway Trucks	1	7.00	400	0.38
Final paving	Pavers	1	7.00	125	0.42
Final paving	Paving Equipment	1	7.00	130	0.36
Final paving	Rollers	3	7.00	80	0.38
Final paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

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	
Building Demolition		7	10.00	0.00	0.00	75.00	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Site Demolition, Removals and Prep		5	10.00	0.00	293.00	75.00	6.90	28.00	LD_Mix	HDT_Mix	HHDT
Utility		6	10.00	0.00	0.00	75.00	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Civil Work		5	10.00	0.00	0.00	75.00	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Contaminated Soil Export		0	1.00	0.00	649.00	75.00	6.90	144.00	LD_Mix	HDT_Mix	HHDT
Rough Grading		3	10.00	0.00	695.00	75.00	6.90	100.00	LD_Mix	HDT_Mix	HHDT
Plant Equipment Installation		18	15.00	0.00	50.00	75.00	6.90	390.00	LD_Mix	HDT_Mix	HHDT
Building Construction		10	15.00	0.00	700.00	75.00	6.90	50.00	LD_Mix	HDT_Mix	HHDT
First Paving		5	10.00	0.00	250.00	75.00	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Construct Foundation		8	15.00	0.00	79.00	75.00	6.90	30.00	LD_Mix	HDT_Mix	HHDT
Final Grading		6	15.00	0.00	0.00	75.00	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings		1	10.00	0.00	0.00	75.00	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Final paving		7	15.00	0.00	375.00	75.00	6.90	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0137	0.0000	0.0137	2.0700e-003	0.0000	2.0700e-003			0.0000			0.0000
Off-Road	1.7648	18.5376	12.1538	0.0189		1.0465	1.0465		0.9654	0.9654		1,928.5548	1,928.5548	0.5612		1,940.3398
Total	1.7648	18.5376	12.1538	0.0189	0.0137	1.0465	1.0602	2.0700e-003	0.9654	0.9675		1,928.5548	1,928.5548	0.5612		1,940.3398

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	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0137	0.0000	0.0137	2.0700e-003	0.0000	2.0700e-003			0.0000			0.0000
Off-Road	1.7648	18.5376	12.1538	0.0189		1.0465	1.0465		0.9654	0.9654		1,928.5548	1,928.5548	0.5612		1,940.3398
Total	1.7648	18.5376	12.1538	0.0189	0.0137	1.0465	1.0602	2.0700e-003	0.9654	0.9675		1,928.5548	1,928.5548	0.5612		1,940.3398

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	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236

3.3 Site Demolition, Removals and Prep - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4716	0.0000	2.4716	0.3742	0.0000	0.3742			0.0000			0.0000
Off-Road	1.6448	17.5751	12.8375	0.0152		1.0004	1.0004		0.9204	0.9204		1,582.6089	1,582.6089	0.4774		1,592.6337
Total	1.6448	17.5751	12.8375	0.0152	2.4716	1.0004	3.4720	0.3742	0.9204	1.2946		1,582.6089	1,582.6089	0.4774		1,592.6337

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	0.1312	2.2837	1.4858	5.9900e003	0.1429	0.0356	0.1785	0.0391	0.0328	0.0719		604.3910	604.3910	4.2500e003		604.4803
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	0.1021	0.2712	2.7497	6.6600e003	0.5699	4.4300e003	0.5743	0.1511	4.0800e003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	0.2333	2.5548	4.2354	0.0127	0.7128	0.0401	0.7529	0.1902	0.0369	0.2271		1,164.0900	1,164.0900	0.0340		1,164.8039

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					2.4716	0.0000	2.4716	0.3742	0.0000	0.3742			0.0000			0.0000
Off-Road	1.6448	17.5751	12.8375	0.0152		1.0004	1.0004		0.9204	0.9204		1,582.6089	1,582.6089	0.4774		1,592.6337
Total	1.6448	17.5751	12.8375	0.0152	2.4716	1.0004	3.4720	0.3742	0.9204	1.2946		1,582.6089	1,582.6089	0.4774		1,592.6337

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	0.1312	2.2837	1.4858	5.9900e-003	0.1429	0.0356	0.1785	0.0391	0.0328	0.0719		604.3910	604.3910	4.2500e-003		604.4803
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	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	0.2333	2.5548	4.2354	0.0127	0.7128	0.0401	0.7529	0.1902	0.0369	0.2271		1,164.0900	1,164.0900	0.0340		1,164.8039

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7339	7.1670	4.2650	7.3900e-003		0.4357	0.4357		0.4018	0.4018		757.2374	757.2374	0.2211		761.8800
Total	0.7339	7.1670	4.2650	7.3900e-003		0.4357	0.4357		0.4018	0.4018		757.2374	757.2374	0.2211		761.8800

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	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7339	7.1670	4.2650	7.3900e-003		0.4357	0.4357		0.4018	0.4018		757.2374	757.2374	0.2211		761.8800
Total	0.7339	7.1670	4.2650	7.3900e-003		0.4357	0.4357		0.4018	0.4018		757.2374	757.2374	0.2211		761.8800

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	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236

3.4 Utility - 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	0.6834	6.6368	4.1451	7.3800e-003		0.3976	0.3976		0.3667	0.3667		745.4951	745.4951	0.2209		750.1341
Total	0.6834	6.6368	4.1451	7.3800e-003		0.3976	0.3976		0.3667	0.3667		745.4951	745.4951	0.2209		750.1341

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	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651
Total	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6834	6.6368	4.1451	7.3800e-003		0.3976	0.3976		0.3667	0.3667		745.4951	745.4951	0.2209		750.1341
Total	0.6834	6.6368	4.1451	7.3800e-003		0.3976	0.3976		0.3667	0.3667		745.4951	745.4951	0.2209		750.1341

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	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651
Total	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651

3.5 Civil Work - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7766	8.6830	4.5290	0.0105		0.4383	0.4383		0.4032	0.4032		1,092.1015	1,092.1015	0.3294		1,099.0192
Total	0.7766	8.6830	4.5290	0.0105		0.4383	0.4383		0.4032	0.4032		1,092.1015	1,092.1015	0.3294		1,099.0192

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	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7766	8.6830	4.5290	0.0105		0.4383	0.4383		0.4032	0.4032		1,092.1015	1,092.1015	0.3294		1,099.0192
Total	0.7766	8.6830	4.5290	0.0105		0.4383	0.4383		0.4032	0.4032		1,092.1015	1,092.1015	0.3294		1,099.0192

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	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236

3.5 Civil Work - 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	0.7149	7.8626	4.3860	0.0105		0.3945	0.3945		0.3629	0.3629		1,074.4903	1,074.4903	0.3292		1,081.4039
Total	0.7149	7.8626	4.3860	0.0105		0.3945	0.3945		0.3629	0.3629		1,074.4903	1,074.4903	0.3292		1,081.4039

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	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651
Total	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7149	7.8626	4.3860	0.0105		0.3945	0.3945		0.3629	0.3629		1,074.4903	1,074.4903	0.3292		1,081.4039
Total	0.7149	7.8626	4.3860	0.0105		0.3945	0.3945		0.3629	0.3629		1,074.4903	1,074.4903	0.3292		1,081.4039

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	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651
Total	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651

3.6 Contaminated Soil Export - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0487	0.0000	0.0487	5.8500e-003	0.0000	5.8500e-003			0.0000			0.0000
Total					0.0487	0.0000	0.0487	5.8500e-003	0.0000	5.8500e-003			0.0000			0.0000

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	0.6276	14.1709	5.2153	0.0382	1.1307	0.2288	1.3596	0.3037	0.2105	0.5142		3,861.8244	3,861.8244	0.0258		3,862.3656
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	0.0102	0.0271	0.2750	6.7000e-004	0.0570	4.4000e-004	0.0574	0.0151	4.1000e-004	0.0155		55.9699	55.9699	2.9700e-003		56.0324
Total	0.6378	14.1980	5.4903	0.0389	1.1877	0.2293	1.4170	0.3188	0.2109	0.5297		3,917.7943	3,917.7943	0.0287		3,918.3980

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0487	0.0000	0.0487	5.8500e-003	0.0000	5.8500e-003			0.0000			0.0000
Total					0.0487	0.0000	0.0487	5.8500e-003	0.0000	5.8500e-003			0.0000			0.0000

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	0.6276	14.1709	5.2153	0.0382	1.1307	0.2288	1.3596	0.3037	0.2105	0.5142		3,861.8244	3,861.8244	0.0258		3,862.3656
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	0.0102	0.0271	0.2750	6.7000e-004	0.0570	4.4000e-004	0.0574	0.0151	4.1000e-004	0.0155		55.9699	55.9699	2.9700e-003		56.0324
Total	0.6378	14.1980	5.4903	0.0389	1.1877	0.2293	1.4170	0.3188	0.2109	0.5297		3,917.7943	3,917.7943	0.0287		3,918.3980

3.6 Contaminated Soil Export - 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					0.0487	0.0000	0.0487	5.8500e-003	0.0000	5.8500e-003			0.0000			0.0000
Total					0.0487	0.0000	0.0487	5.8500e-003	0.0000	5.8500e-003			0.0000			0.0000

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	0.6055	12.9535	5.0531	0.0382	3.3114	0.2093	3.5206	0.8390	0.1925	1.0315		3,798.5919	3,798.5919	0.0251		3,799.1198
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	8.8000e-003	0.0245	0.2477	6.7000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155		53.8188	53.8188	2.7500e-003		53.8765
Total	0.6143	12.9780	5.3008	0.0389	3.3683	0.2097	3.5780	0.8541	0.1929	1.0470		3,852.4107	3,852.4107	0.0279		3,852.9963

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0487	0.0000	0.0487	5.8500e-003	0.0000	5.8500e-003			0.0000			0.0000
Total					0.0487	0.0000	0.0487	5.8500e-003	0.0000	5.8500e-003			0.0000			0.0000

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	0.6055	12.9535	5.0531	0.0382	3.3114	0.2093	3.5206	0.8390	0.1925	1.0315		3,798.5919	3,798.5919	0.0251		3,799.1198
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	8.8000e-003	0.0245	0.2477	6.7000e-004	0.0570	4.3000e-004	0.0574	0.0151	3.9000e-004	0.0155		53.8188	53.8188	2.7500e-003		53.8765
Total	0.6143	12.9780	5.3008	0.0389	3.3683	0.2097	3.5780	0.8541	0.1929	1.0470		3,852.4107	3,852.4107	0.0279		3,852.9963

3.7 Rough Grading - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1532	0.0000	3.1532	1.6726	0.0000	1.6726			0.0000			0.0000
Off-Road	1.5957	16.8315	10.1572	0.0107		0.8956	0.8956		0.8239	0.8239		1,110.8664	1,110.8664	0.3351		1,117.9030
Total	1.5957	16.8315	10.1572	0.0107	3.1532	0.8956	4.0488	1.6726	0.8239	2.4965		1,110.8664	1,110.8664	0.3351		1,117.9030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2913	28.2309	11.2695	0.0759	1.8330	0.4542	2.2872	0.5018	0.4178	0.9196		7,668.9598	7,668.9598	0.0515		7,670.408
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	0.1021	0.2712	2.7497	6.6600e-003	0.5699	4.4300e-003	0.5743	0.1511	4.0800e-003	0.1552		559.6990	559.6990	0.0297		560.3236
Total	1.3934	28.5020	14.0192	0.0826	2.4029	0.4586	2.8615	0.6529	0.4219	1.0748		8,228.6588	8,228.6588	0.0812		8,230.3644

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1532	0.0000	3.1532	1.6726	0.0000	1.6726			0.0000			0.0000
Off-Road	1.5957	16.83 15	10.15 72	0.0107		0.8956	0.8956		0.8239	0.8239		1,110.8 664	1,110.86 64	0.3351		1,117.9 030
Total	1.5957	16.83 15	10.15 72	0.0107	3.1532	0.8956	4.0488	1.6726	0.8239	2.4965		1,110.8 664	1,110.86 64	0.3351		1,117.9 030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2913	28.23 09	11.26 95	0.0759	1.8330	0.4542	2.2872	0.5018	0.4178	0.9196		7,668.9 598	7,668.95 98	0.0515		7,670.0 408
Vendor	0.0000	0.000 0	0.000 0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1021	0.271 2	2.749 7	6.6600e 003	0.5699	4.4300e 003	0.5743	0.1511	4.0800e 003	0.1552		559.699 0	559.699 0	0.0297		560.323 6
Total	1.3934	28.50 20	14.01 92	0.0826	2.4029	0.4586	2.8615	0.6529	0.4219	1.0748		8,228.6 588	8,228.65 88	0.0812		8,230.3 644

3.8 Plant Equipment Installation - 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	4.3515	36.88 92	23.03 76	0.0413		2.0861	2.0861		1.9817	1.9817		4,030.1 913	4,030.19 13	0.9517		4,050.1 770
Total	4.3515	36.88 92	23.03 76	0.0413		2.0861	2.0861		1.9817	1.9817		4,030.1 913	4,030.19 13	0.9517		4,050.1 770

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	0.0547	1.2239	0.4194	3.6300e003	0.0879	0.0199	0.1078	0.0241	0.0183	0.0424		360.6777	360.6777	2.3700e003		360.7274
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	0.1320	0.3674	3.7159	9.9800e003	0.8548	6.3800e003	0.8612	0.2266	5.8800e003	0.2325		807.2816	807.2816	0.0412		808.1477
Total	0.1867	1.5913	4.1353	0.0136	0.9428	0.0263	0.9690	0.2507	0.0242	0.2749		1,167.9593	1,167.9593	0.0436		1,168.8751

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.3515	36.8892	23.0376	0.0413		2.0861	2.0861		1.9817	1.9817		4,030.1913	4,030.1913	0.9517		4,050.1769
Total	4.3515	36.8892	23.0376	0.0413		2.0861	2.0861		1.9817	1.9817		4,030.1913	4,030.1913	0.9517		4,050.1769

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	0.0547	1.2239	0.4194	3.6300e003	0.0879	0.0199	0.1078	0.0241	0.0183	0.0424		360.6777	360.6777	2.3700e003		360.7274
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	0.1320	0.3674	3.7159	9.9800e003	0.8548	6.3800e003	0.8612	0.2266	5.8800e003	0.2325		807.2816	807.2816	0.0412		808.1477
Total	0.1867	1.5913	4.1353	0.0136	0.9428	0.0263	0.9690	0.2507	0.0242	0.2749		1,167.9593	1,167.9593	0.0436		1,168.8751

3.9 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	1.3135	13.1981	7.6078	0.0150		0.7443	0.7443		0.6848	0.6848		1,528.9918	1,528.9918	0.4685		1,538.8299
Total	1.3135	13.1981	7.6078	0.0150		0.7443	0.7443		0.6848	0.6848		1,528.9918	1,528.9918	0.4685		1,538.8299

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	0.0747	1.4189	0.7488	4.1300e-003	0.1176	0.0225	0.1401	0.0317	0.0207	0.0524		410.1752	410.1752	2.7900e-003		410.2337
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	0.1320	0.3674	3.7159	9.9800e-003	0.8548	6.3800e-003	0.8612	0.2266	5.8800e-003	0.2325		807.2816	807.2816	0.0412		808.1477
Total	0.2066	1.7863	4.4647	0.0141	0.9724	0.0289	1.0013	0.2583	0.0266	0.2849		1,217.4568	1,217.4568	0.0440		1,218.3814

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	1.3135	13.1981	7.6078	0.0150		0.7443	0.7443		0.6848	0.6848		1,528.9918	1,528.9918	0.4685		1,538.8299
Total	1.3135	13.1981	7.6078	0.0150		0.7443	0.7443		0.6848	0.6848		1,528.9918	1,528.9918	0.4685		1,538.8299

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	0.0747	1.4189	0.7488	4.1300e-003	0.1176	0.0225	0.1401	0.0317	0.0207	0.0524		410.1752	410.1752	2.7900e-003		410.2337
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	0.1320	0.3674	3.7159	9.9800e-003	0.8548	6.3800e-003	0.8612	0.2266	5.8800e-003	0.2325		807.2816	807.2816	0.0412		808.1477
Total	0.2066	1.7863	4.4647	0.0141	0.9724	0.0289	1.0013	0.2583	0.0266	0.2849		1,217.4568	1,217.4568	0.0440		1,218.3814

3.9 Building Construction - 2018**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	1.1341	11.2348	7.1119	0.0150		0.6183	0.6183		0.5689	0.5689		1,504.7847	1,504.7847	0.4685		1,514.6223
Total	1.1341	11.2348	7.1119	0.0150		0.6183	0.6183		0.5689	0.5689		1,504.7847	1,504.7847	0.4685		1,514.6223

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	0.0739	1.3137	0.7378	4.1200e-003	0.4095	0.0225	0.4321	0.1033	0.0207	0.1241		403.3682	403.3682	2.8200e-003		403.4274
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	0.1137	0.3335	3.3613	9.9700e-003	0.8548	6.1900e-003	0.8610	0.2266	5.7300e-003	0.2324		777.1279	777.1279	0.0384		777.9332
Total	0.1876	1.6472	4.0990	0.0141	1.2644	0.0287	1.2931	0.3300	0.0264	0.3564		1,180.4961	1,180.4961	0.0412		1,181.3606

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	1.1341	11.2348	7.1119	0.0150		0.6183	0.6183		0.5689	0.5689		1,504.7847	1,504.7847	0.4685		1,514.6223
Total	1.1341	11.2348	7.1119	0.0150		0.6183	0.6183		0.5689	0.5689		1,504.7847	1,504.7847	0.4685		1,514.6223

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	0.0739	1.3137	0.7378	4.1200e-003	0.4095	0.0225	0.4321	0.1033	0.0207	0.1241		403.3682	403.3682	2.8200e-003		403.4274
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	0.1137	0.3335	3.3613	9.9700e-003	0.8548	6.1900e-003	0.8610	0.2266	5.7300e-003	0.2324		777.1279	777.1279	0.0384		777.9332
Total	0.1876	1.6472	4.0990	0.0141	1.2644	0.0287	1.2931	0.3300	0.0264	0.3564		1,180.4961	1,180.4961	0.0412		1,181.3606

3.10 First 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	1.7417	18.1919	10.7855	0.0184		0.9763	0.9763		0.8982	0.8982		1,880.2425	1,880.2425	0.5761		1,892.3407
Paving	0.1667					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9084	18.1919	10.7855	0.0184		0.9763	0.9763		0.8982	0.8982		1,880.2425	1,880.2425	0.5761		1,892.3407

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	0.2481	4.7144	2.4878	0.0137	0.3298	0.0749	0.4047	0.0903	0.0689	0.1592		1,362.8115	1,362.8115	9.2600e-003		1,363.0060
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	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651
Total	0.3361	4.9593	4.9651	0.0204	0.8997	0.0791	0.9789	0.2414	0.0728	0.3142		1,900.9993	1,900.9993	0.0368		1,901.7711

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	1.7417	18.1919	10.7855	0.0184		0.9763	0.9763		0.8982	0.8982		1,880.2425	1,880.2425	0.5761		1,892.3407
Paving	0.1667					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9084	18.1919	10.7855	0.0184		0.9763	0.9763		0.8982	0.8982		1,880.2425	1,880.2425	0.5761		1,892.3407

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	0.2481	4.7144	2.4878	0.0137	0.3298	0.0749	0.4047	0.0903	0.0689	0.1592		1,362.8115	1,362.8115	9.2600e-003		1,363.0060
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	0.0880	0.2449	2.4773	6.6500e-003	0.5699	4.2500e-003	0.5741	0.1511	3.9200e-003	0.1550		538.1877	538.1877	0.0275		538.7651
Total	0.3361	4.9593	4.9651	0.0204	0.8997	0.0791	0.9789	0.2414	0.0728	0.3142		1,900.9993	1,900.9993	0.0368		1,901.7711

3.11 Construct Foundation - 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					0.0669	0.0000	0.0669	7.2200e-003	0.0000	7.2200e-003			0.0000			0.0000
Off-Road	2.8124	31.2600	15.1293	0.0357		1.3685	1.3685		1.2590	1.2590		3,646.5110	3,646.5110	1.1173		3,669.9740
Total	2.8124	31.2600	15.1293	0.0357	0.0669	1.3685	1.4353	7.2200e-003	1.2590	1.2662		3,646.5110	3,646.5110	1.1173		3,669.9740

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	0.0382	0.6543	0.4336	1.8800e-003	0.0449	0.0102	0.0551	0.0123	9.4000e-003	0.0217		186.4707	186.4707	1.3000e-003		186.4980
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	0.1320	0.3674	3.7159	9.9800e-003	0.8548	6.3800e-003	0.8612	0.2266	5.8800e-003	0.2325		807.2816	807.2816	0.0412		808.1477
Total	0.1702	1.0217	4.1495	0.0119	0.8997	0.0166	0.9163	0.2389	0.0153	0.2542		993.7523	993.7523	0.0425		994.6457

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0669	0.0000	0.0669	7.2200e-003	0.0000	7.2200e-003			0.0000			0.0000
Off-Road	2.8124	31.2600	15.1293	0.0357		1.3685	1.3685		1.2590	1.2590		3,646.5110	3,646.5110	1.1173		3,669.9740
Total	2.8124	31.2600	15.1293	0.0357	0.0669	1.3685	1.4353	7.2200e-003	1.2590	1.2662		3,646.5110	3,646.5110	1.1173		3,669.9740

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	0.0382	0.6543	0.4336	1.8800e-003	0.0449	0.0102	0.0551	0.0123	9.4000e-003	0.0217		186.4707	186.4707	1.3000e-003		186.4980
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	0.1320	0.3674	3.7159	9.9800e-003	0.8548	6.3800e-003	0.8612	0.2266	5.8800e-003	0.2325		807.2816	807.2816	0.0412		808.1477
Total	0.1702	1.0217	4.1495	0.0119	0.8997	0.0166	0.9163	0.2389	0.0153	0.2542		993.7523	993.7523	0.0425		994.6457

3.12 Final 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					0.3076	0.0000	0.3076	0.0332	0.0000	0.0332			0.0000			0.0000
Off-Road	2.1006	21.5696	11.5229	0.0216		1.1100	1.1100		1.0227	1.0227		2,188.8470	2,188.8470	0.6586		2,202.6784
Total	2.1006	21.5696	11.5229	0.0216	0.3076	1.1100	1.4176	0.0332	1.0227	1.0559		2,188.8470	2,188.8470	0.6586		2,202.6784

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	0.1320	0.3674	3.7159	9.9800e-003	0.8548	6.3800e-003	0.8612	0.2266	5.8800e-003	0.2325		807.2816	807.2816	0.0412		808.1477
Total	0.1320	0.3674	3.7159	9.9800e-003	0.8548	6.3800e-003	0.8612	0.2266	5.8800e-003	0.2325		807.2816	807.2816	0.0412		808.1477

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3076	0.0000	0.3076	0.0332	0.0000	0.0332			0.0000			0.0000
Off-Road	2.1006	21.5696	11.5229	0.0216		1.1100	1.1100		1.0227	1.0227		2,188.8470	2,188.8470	0.6586		2,202.6784
Total	2.1006	21.5696	11.5229	0.0216	0.3076	1.1100	1.4176	0.0332	1.0227	1.0559		2,188.8470	2,188.8470	0.6586		2,202.6784

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	0.1320	0.3674	3.7159	9.9800e-003	0.8548	6.3800e-003	0.8612	0.2266	5.8800e-003	0.2325		807.2816	807.2816	0.0412		808.1477
Total	0.1320	0.3674	3.7159	9.9800e-003	0.8548	6.3800e-003	0.8612	0.2266	5.8800e-003	0.2325		807.2816	807.2816	0.0412		808.1477

3.13 Architectural Coatings - 2018**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	7.1843					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	7.4829	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102

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	0.0758	0.2223	2.2409	6.6500e-003	0.5699	4.1300e-003	0.5740	0.1511	3.8200e-003	0.1549		518.0852	518.0852	0.0256		518.6221
Total	0.0758	0.2223	2.2409	6.6500e-003	0.5699	4.1300e-003	0.5740	0.1511	3.8200e-003	0.1549		518.0852	518.0852	0.0256		518.6221

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	7.1843					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	7.4829	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102

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	0.0758	0.2223	2.2409	6.6500e-003	0.5699	4.1300e-003	0.5740	0.1511	3.8200e-003	0.1549		518.0852	518.0852	0.0256		518.6221
Total	0.0758	0.2223	2.2409	6.6500e-003	0.5699	4.1300e-003	0.5740	0.1511	3.8200e-003	0.1549		518.0852	518.0852	0.0256		518.6221

3.14 Final paving - 2018

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	1.9627	20.4352	14.5549	0.0274		1.0686	1.0686		0.9832	0.9832		2,758.1555	2,758.1555	0.8587		2,776.1871
Paving	0.1834					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.1461	20.4352	14.5549	0.0274		1.0686	1.0686		0.9832	0.9832		2,758.1555	2,758.1555	0.8587		2,776.1871

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	0.4051	7.2019	4.0445	0.0226	0.5443	0.1234	0.6677	0.1490	0.1136	0.2626		2,211.3222	2,211.3222	0.0155		2,211.6466
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	0.1137	0.3335	3.3613	9.9700e-003	0.8548	6.1900e-003	0.8610	0.2266	5.7300e-003	0.2324		777.1279	777.1279	0.0384		777.9332
Total	0.5188	7.5353	7.4057	0.0326	1.3991	0.1296	1.5287	0.3756	0.1193	0.4949		2,988.4500	2,988.4500	0.0538		2,989.5798

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	1.9627	20.4352	14.5549	0.0274		1.0686	1.0686		0.9832	0.9832		2,758.1555	2,758.1555	0.8587		2,776.1871
Paving	0.1834					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.1461	20.4352	14.5549	0.0274		1.0686	1.0686		0.9832	0.9832		2,758.1555	2,758.1555	0.8587		2,776.1871

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	0.4051	7.2019	4.0445	0.0226	0.5443	0.1234	0.6677	0.1490	0.1136	0.2626		2,211.322	2,211.322	0.0155		2,211.646
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	0.1137	0.3335	3.3613	9.9700e003	0.8548	6.1900e003	0.8610	0.2266	5.7300e003	0.2324		777.1279	777.1279	0.0384		777.9332
Total	0.5188	7.5353	7.4057	0.0326	1.3991	0.1296	1.5287	0.3756	0.1193	0.4949		2,988.4500	2,988.4500	0.0538		2,989.5798

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	3.2727	11.2034	40.6787	0.1170	8.2698	0.1684	8.4382	2.2097	0.1552	2.3649		9,676.9851	9,676.9851	0.3635		9,684.6181
Unmitigated	3.2727	11.2034	40.6787	0.1170	8.2698	0.1684	8.4382	2.2097	0.1552	2.3649		9,676.9851	9,676.9851	0.3635		9,684.6181

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	880.45	166.74	85.90	2,944,736	2,944,736
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	880.45	166.74	85.90	2,944,736	2,944,736

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or	H-S or C-C	H-O or C-	H-W or C-W	H-S or C-	H-O or C-	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBU	MCY	SBUS	MH
0.511172	0.060004	0.18059	0.13899	0.042398	0.006681	0.016070	0.032568	0.001938	0.00	0.004370	0.000586	0.002135

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0702	0.638	0.536	3.8300e-003		0.0485	0.0485		0.0485	0.0485		765.859	765.859	0.0147	0.0140	770.520
NaturalGas Unmitigated	0.0702	0.638	0.536	3.8300e-003		0.0485	0.0485		0.0485	0.0485		765.859	765.859	0.0147	0.0140	770.520

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	6509.81	0.070	0.638	0.536	3.8300e-003		0.0485	0.0485		0.048	0.048		765.859	765.859	0.0147	0.0140	770.520
Other Asphalt Surfaces	0	0.000	0.000	0.0000	0.0000		0.0000	0.0000		0.000	0.000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.070	0.638	0.536	3.8300e-003		0.0485	0.0485		0.048	0.048		765.859	765.859	0.0147	0.0140	770.520

Mitigated

	Natural Gas	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	6.50981	0.0702	0.6382	0.5361	3.8300e-003		0.0485	0.0485		0.0485	0.0485		765.8595	765.8595	0.0147	0.0140	770.5204
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0702	0.6382	0.5361	3.8300e-003		0.0485	0.0485		0.0485	0.0485		765.8595	765.8595	0.0147	0.0140	770.5204

6.0 Area Detail**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.6965	1.2000e-3	0.0133	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0281	0.0281	8.0000e-005		0.0297
Unmitigated	5.6965	1.2000e-3	0.0133	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0281	0.0281	8.0000e-005		0.0297

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	1.3829					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3124					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2700e-003	1.2000e-3	0.0133	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0281	0.0281	8.0000e-005		0.0297
Total	5.6965	1.2000e-3	0.0133	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0281	0.0281	8.0000e-005		0.0297

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	1.3829					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3124					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2700e-003	1.2000e-003	0.0133	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0281	0.0281	8.0000e-005		0.0297
Total	5.6965	1.2000e-003	0.0133	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0281	0.0281	8.0000e-005		0.0297

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Asphalt Plant #1
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	126.32	1000sqft	2.90	126,320.00	0
Other Asphalt Surfaces	2.10	Acre	2.10	91,476.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2018
Utility Company					
CO2 Intensity (lb/MWhr)	0	CH4 Intensity (lb/MWhr)	0	N2O Intensity (lb/MWhr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics

Land Use - project specific

Construction Phase - project specific

Off-road Equipment -

Off-road Equipment - project specific

Off-road Equipment - project specific

Off-road Equipment - project specific

Off-road Equipment - project specific

- Off-road Equipment -
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Off-road Equipment - project specific
- Trips and VMT - project specific
- Demolition - project specific
- Grading - project specific
- Architectural Coating - project specific

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	108,898.00	4,650.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	326,694.00	4,650.00
tblConstructionPhase	NumDays	18.00	15.00
tblConstructionPhase	NumDays	230.00	93.00
tblConstructionPhase	NumDays	230.00	93.00
tblConstructionPhase	NumDays	230.00	193.00
tblConstructionPhase	NumDays	230.00	307.00
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	20.00	50.00
tblConstructionPhase	NumDays	8.00	46.00
tblConstructionPhase	NumDays	8.00	10.00
tblConstructionPhase	NumDays	8.00	88.00
tblConstructionPhase	NumDays	8.00	33.00
tblConstructionPhase	NumDays	18.00	30.00

tblConstructionPhase	NumDays	18.00	33.00
tblConstructionPhase	PhaseEndDate	7/19/2017	3/23/2018
tblConstructionPhase	PhaseEndDate	3/1/2017	2/1/2017
tblConstructionPhase	PhaseEndDate	6/12/2017	2/1/2017
tblConstructionPhase	PhaseEndDate	8/9/2017	10/16/2017
tblConstructionPhase	PhaseEndDate	12/19/2018	3/23/2018
tblConstructionPhase	PhaseEndDate	11/18/2016	10/21/2016
tblConstructionPhase	PhaseEndDate	5/23/2017	6/14/2017
tblConstructionPhase	PhaseEndDate	6/5/2017	1/28/2017
tblConstructionPhase	PhaseEndDate	3/15/2017	11/12/2016
tblConstructionPhase	PhaseEndDate	5/9/2018	3/20/2017
tblConstructionPhase	PhaseStartDate	6/29/2017	3/3/2018
tblConstructionPhase	PhaseStartDate	10/22/2016	9/26/2016
tblConstructionPhase	PhaseStartDate	2/2/2017	9/26/2016
tblConstructionPhase	PhaseStartDate	11/13/2016	1/19/2017
tblConstructionPhase	PhaseStartDate	10/17/2017	1/19/2017
tblConstructionPhase	PhaseStartDate	9/10/2016	8/15/2016
tblConstructionPhase	PhaseStartDate	3/21/2017	4/12/2017
tblConstructionPhase	PhaseStartDate	2/2/2017	9/28/2016
tblConstructionPhase	PhaseStartDate	1/29/2017	9/28/2016
tblConstructionPhase	PhaseStartDate	3/24/2018	3/26/2018
tblConstructionPhase	PhaseStartDate	3/24/2018	2/2/2017
tblGrading	AcresOfGrading	4.38	2.90
tblGrading	AcresOfGrading	14.44	2.90
tblGrading	MaterialExported	0.00	10,680.00
tblGrading	MaterialImported	0.00	14,300.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
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tblOffRoadEquipment	PhaseName		Utility
tblOffRoadEquipment	PhaseName		Utility
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tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	4.00

tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
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tblOffRoadEquipment	UsageHours	8.00	7.00
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tblOffRoadEquipment	UsageHours	8.00	4.00
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tblOffRoadEquipment	UsageHours	7.00	2.00
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tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	28.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	390.00

tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	2.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	79.00
tblTripsAndVMT	HaulingTripNumber	0.00	375.00
tblTripsAndVMT	HaulingTripNumber	571.00	293.00
tblTripsAndVMT	HaulingTripNumber	0.00	649.00
tblTripsAndVMT	HaulingTripNumber	1,788.00	695.00
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	700.00
tblTripsAndVMT	HaulingTripNumber	0.00	250.00
tblTripsAndVMT	HaulingVehicleClass		HHDT
tblTripsAndVMT	VendorTripNumber	36.00	0.00
tblTripsAndVMT	VendorTripNumber	36.00	0.00
tblTripsAndVMT	VendorTripNumber	36.00	0.00
tblTripsAndVMT	VendorTripNumber	36.00	0.00
tblTripsAndVMT	VendorVehicleClass		HDT_Mix
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00

tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripLength	14.70	75.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	20.00	15.00
tblTripsAndVMT	WorkerTripNumber	18.00	10.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	91.00	10.00
tblTripsAndVMT	WorkerTripNumber	91.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	10.00
tblTripsAndVMT	WorkerTripNumber	91.00	15.00
tblTripsAndVMT	WorkerTripNumber	91.00	15.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerVehicleClass		LD_Mix

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2009	2.5608	1.7070	4.9800e-003	0.2585	0.1002	0.3586	0.0754	0.0922	0.1677		446.4980	446.4980	0.0448	0.0000	447.4384
2017	0.7660	7.1122	5.1305	0.0116	0.2974	0.3655	0.6629	0.0780	0.3423	0.4203		998.1597	998.1597	0.1877	0.0000	1,002.1006
2018	0.1362	0.8258	0.7008	1.8500e-003	0.0620	0.0385	0.1006	0.0164	0.0356	0.0519		157.2976	157.2976	0.0266	0.0000	157.8571
Total	1.1031	10.4988	7.5383	0.0184	0.6179	0.5042	1.1221	0.1698	0.4701	0.6399		1,601.9553	1,601.9553	0.2591	0.0000	1,607.3961

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2009	2.5608	1.7070	4.9800e-003	0.2585	0.1002	0.3586	0.0754	0.0922	0.1677		446.4978	446.4978	0.0448	0.0000	447.4382
2017	0.7660	7.1122	5.1305	0.0116	0.2974	0.3655	0.6629	0.0780	0.3423	0.4203		998.1589	998.1589	0.1877	0.0000	1,002.0998
2018	0.1362	0.8258	0.7008	1.8500e-003	0.0620	0.0385	0.1006	0.0164	0.0356	0.0519		157.2975	157.2975	0.0266	0.0000	157.8570
Total	1.1031	10.4988	7.5383	0.0184	0.6179	0.5042	1.1221	0.1698	0.4701	0.6399		1,601.9542	1,601.9542	0.2591	0.0000	1,607.3951

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Demolition	Demolition	8/8/2016	9/9/2016	5	25	
2	Site Demolition, Removals and Drain Utility	Demolition	8/15/2016	10/21/2016	5	50	
3	Utility	Building Construction	9/26/2016	2/1/2017	5	93	
4	Civil Work	Building Construction	9/26/2016	2/1/2017	5	93	
5	Contaminated Soil Export	Grading	9/28/2016	1/28/2017	5	88	
6	Rough Grading	Grading	9/28/2016	11/12/2016	5	33	
7	Plant Equipment Installation	Building Construction	1/19/2017	10/16/2017	5	193	
8	Building Construction	Building Construction	1/19/2017	3/23/2018	5	307	
9	First Paving	Paving	2/2/2017	3/20/2017	5	33	
10	Construct Foundation	Grading	4/12/2017	6/14/2017	5	46	
11	Final Grading	Grading	6/15/2017	6/28/2017	5	10	
12	Architectural Coatings	Architectural Coating	3/3/2018	3/23/2018	5	15	
13	Final paving	Paving	3/26/2018	5/4/2018	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 4,650; Non-Residential Outdoor: 4,650 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Demolition	Cranes	1	4.00	226	0.29
Building Demolition	Dumpers/Tenders	2	7.00	16	0.38
Building Demolition	Excavators	2	7.00	162	0.38
Building Demolition	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Site Demolition, Removals and Prep	Cranes	1	1.00	226	0.29
Site Demolition, Removals and Prep	Excavators	1	7.00	162	0.38
Site Demolition, Removals and Prep	Rubber Tired Dozers	1	4.00	255	0.40
Site Demolition, Removals and Prep	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Utility	Dumpers/Tenders	1	5.00	16	0.38
Utility	Forklifts	1	4.00	89	0.20
Utility	Off-Highway Trucks	1	2.00	400	0.38
Utility	Rollers	1	4.00	80	0.38
Utility	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Civil Work	Bore/Drill Rigs	1	4.00	205	0.50
Civil Work	Forklifts	1	4.00	89	0.20
Civil Work	Off-Highway Trucks	1	2.00	400	0.38
Civil Work	Rollers	1	4.00	80	0.38
Civil Work	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Rough Grading	Graders	1	7.00	174	0.41
Rough Grading	Rubber Tired Dozers	1	4.00	255	0.40

Rough Grading	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Plant Equipment Installation	Cranes	2	6.00	226	0.29
Plant Equipment Installation	Forklifts	6	4.00	89	0.20
Plant Equipment Installation	Generator Sets	2	7.00	84	0.74
Plant Equipment Installation	Off-Highway Trucks	3	2.00	400	0.38
Plant Equipment Installation	Skid Steer Loaders	1	7.00	64	0.37
Plant Equipment Installation	Welders	4	4.00	46	0.45
Building Construction	Forklifts	6	4.00	89	0.20
Building Construction	Off-Highway Trucks	2	2.00	400	0.38
Building Construction	Off-Highway Trucks	1	2.00	400	0.38
Building Construction	Skid Steer Loaders	1	2.00	64	0.37
First Paving	Graders	1	4.00	174	0.41
First Paving	Off-Highway Trucks	1	4.00	400	0.38
First Paving	Pavers	1	8.00	125	0.42
First Paving	Rollers	1	8.00	80	0.38
First Paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Construct Foundation	Cranes	1	7.00	226	0.29
Construct Foundation	Forklifts	1	7.00	89	0.20
Construct Foundation	Off-Highway Trucks	4	4.00	400	0.38
Construct Foundation	Other Construction Equipment	1	2.00	171	0.42
Construct Foundation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Final Grading	Dumpers/Tenders	2	4.00	16	0.38
Final Grading	Graders	1	7.00	174	0.41
Final Grading	Off-Highway Trucks	1	7.00	400	0.38
Final Grading	Rollers	1	7.00	80	0.38
Final Grading	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Architectural Coatings	Air Compressors	1	6.00	78	0.48
Final paving	Off-Highway Trucks	1	7.00	400	0.38

Final paving	Pavers	1	7.00	125	0.42
Final paving	Paving Equipment	1	7.00	130	0.36
Final paving	Rollers	3	7.00	80	0.38
Final paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37

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
Building Demolition	7	10.00	0.00	0.00	75.00	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Site Demolition, Removals and Prep	5	10.00	0.00	293.00	75.00	6.90	28.00	LD_Mix	HDT_Mix	HHDT
Utility	6	10.00	0.00	0.00	75.00	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Civil Work	5	10.00	0.00	0.00	75.00	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Contaminated Soil Export	0	1.00	0.00	649.00	75.00	6.90	144.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	3	10.00	0.00	695.00	75.00	6.90	100.00	LD_Mix	HDT_Mix	HHDT
Plant Equipment Installation	18	15.00	0.00	50.00	75.00	6.90	390.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	15.00	0.00	700.00	75.00	6.90	50.00	LD_Mix	HDT_Mix	HHDT
First Paving	5	10.00	0.00	250.00	75.00	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Construct Foundation	8	15.00	0.00	79.00	75.00	6.90	30.00	LD_Mix	HDT_Mix	HHDT
Final Grading	6	15.00	0.00	0.00	75.00	6.90	50.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	10.00	0.00	0.00	75.00	6.90	0.00	LD_Mix	HDT_Mix	HHDT
Final paving	7	15.00	0.00	375.00	75.00	6.90	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7000e-004	0.0000	1.7000e-004	3.0000e-005	0.0000	3.0000e-005		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0221	0.2317	0.1519	2.4000e-004		0.0131	0.0131		0.0121	0.0121		21.8694	21.8694	6.3600e-003	0.0000	22.0031
Total	0.0221	0.2317	0.1519	2.4000e-004	1.7000e-004	0.0131	0.0133	3.0000e-005	0.0121	0.0121		21.8694	21.8694	6.3600e-003	0.0000	22.0031

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
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
Worker	1.2600e-003	3.5000e-003	0.0354	8.0000e-005	6.9900e-003	6.0000e-005	7.0500e-003	1.8600e-003	5.0000e-005	1.9100e-003		6.4466	6.4466	3.4000e-004	0.0000	6.4536
Total	1.2600e-003	3.5000e-003	0.0354	8.0000e-005	6.9900e-003	6.0000e-005	7.0500e-003	1.8600e-003	5.0000e-005	1.9100e-003		6.4466	6.4466	3.4000e-004	0.0000	6.4536

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7000e-004	0.0000	1.7000e-004	3.0000e-005	0.0000	3.0000e-005		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0221	0.2317	0.1519	2.4000e-004		0.0131	0.0131		0.0121	0.0121		21.8694	21.8694	6.3600e-003	0.0000	22.0031
Total	0.0221	0.2317	0.1519	2.4000e-004	1.7000e-004	0.0131	0.0133	3.0000e-005	0.0121	0.0121		21.8694	21.8694	6.3600e-003	0.0000	22.0031

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
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
Worker	1.2600e-003	3.5000e-003	0.0354	8.0000e-005	6.9900e-003	6.0000e-005	7.0500e-003	1.8600e-003	5.0000e-005	1.9100e-003		6.4466	6.4466	3.4000e-004	0.0000	6.4536
Total	1.2600e-003	3.5000e-003	0.0354	8.0000e-005	6.9900e-003	6.0000e-005	7.0500e-003	1.8600e-003	5.0000e-005	1.9100e-003		6.4466	6.4466	3.4000e-004	0.0000	6.4536

3.3 Site Demolition, Removals and Prep - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0618	0.0000	0.0618	9.3600e-003	0.0000	9.3600e-003		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4394	0.3209	3.8000e-004		0.0250	0.0250		0.0230	0.0230		35.8930	35.8930	0.0108	0.0000	36.1203
Total	0.0411	0.4394	0.3209	3.8000e-004	0.0618	0.0250	0.0868	9.3600e-003	0.0230	0.0324		35.8930	35.8930	0.0108	0.0000	36.1203

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	3.2400e-003	0.0581	0.0366	1.5000e-004	3.5100e-003	8.9000e-004	4.4000e-003	9.6000e-004	8.2000e-004	1.7800e-003		13.7210	13.7210	1.0000e-004	0.0000	13.7230
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
Worker	2.5100e-003	7.0000e-003	0.0708	1.7000e-004	0.0140	1.1000e-004	0.0141	3.7100e-003	1.0000e-004	3.8100e-003		12.8931	12.8931	6.7000e-004	0.0000	12.9073
Total	5.7500e-003	0.0651	0.1074	3.2000e-004	0.0175	1.0000e-003	0.0185	4.6700e-003	9.2000e-004	5.5900e-003		26.6141	26.6141	7.7000e-004	0.0000	26.6303

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0618	0.0000	0.0618	9.3600e-003	0.0000	9.3600e-003		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4394	0.3209	3.8000e-004		0.0250	0.0250		0.0230	0.0230		35.8929	35.8929	0.0108	0.0000	36.1203
Total	0.0411	0.4394	0.3209	3.8000e-004	0.0618	0.0250	0.0868	9.3600e-003	0.0230	0.0324		35.8929	35.8929	0.0108	0.0000	36.1203

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	3.2400e-003	0.0581	0.0366	1.5000e-004	3.5100e-003	8.9000e-004	4.4000e-003	9.6000e-004	8.2000e-004	1.7800e-003		13.7210	13.7210	1.0000e-004	0.0000	13.7230
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
Worker	2.5100e-003	7.0000e-003	0.0708	1.7000e-004	0.0140	1.1000e-004	0.0141	3.7100e-003	1.0000e-004	3.8100e-003		12.8931	12.8931	6.7000e-004	0.0000	12.9073
Total	5.7500e-003	0.0651	0.1074	3.2000e-004	0.0175	1.0000e-003	0.0185	4.6700e-003	9.2000e-004	5.5900e-003		26.6141	26.6141	7.7000e-004	0.0000	26.6303

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0257	0.2508	0.1493	2.6000e-004		0.0153	0.0153		0.0141	0.0141		24.0434	24.0434	7.0200e-003	0.0000	24.1908
Total	0.0257	0.2508	0.1493	2.6000e-004		0.0153	0.0153		0.0141	0.0141		24.0434	24.0434	7.0200e-003	0.0000	24.1908

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
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
Worker	3.5200e-003	9.8000e-003	0.0992	2.4000e-004	0.0196	1.6000e-004	0.0197	5.2000e-003	1.4000e-004	5.3400e-003		18.0504	18.0504	9.4000e-004	0.0000	18.0702
Total	3.5200e-003	9.8000e-003	0.0992	2.4000e-004	0.0196	1.6000e-004	0.0197	5.2000e-003	1.4000e-004	5.3400e-003		18.0504	18.0504	9.4000e-004	0.0000	18.0702

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	0.0257	0.2508	0.1493	2.6000e-004		0.0153	0.0153		0.0141	0.0141		24.0434	24.0434	7.0200e-003	0.0000	24.1908
Total	0.0257	0.2508	0.1493	2.6000e-004		0.0153	0.0153		0.0141	0.0141		24.0434	24.0434	7.0200e-003	0.0000	24.1908

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
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
Worker	3.5200e-003	9.8000e-003	0.0992	2.4000e-004	0.0196	1.6000e-004	0.0197	5.2000e-003	1.4000e-004	5.3400e-003		18.0504	18.0504	9.4000e-004	0.0000	18.0702
Total	3.5200e-003	9.8000e-003	0.0992	2.4000e-004	0.0196	1.6000e-004	0.0197	5.2000e-003	1.4000e-004	5.3400e-003		18.0504	18.0504	9.4000e-004	0.0000	18.0702

3.4 Utility - 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	7.8600e-003	0.0763	0.0477	8.0000e-005		4.5700e-003	4.5700e-003		4.2200e-003	4.2200e-003		7.7775	7.7775	2.3000e-003	0.0000	7.8259
Total	7.8600e-003	0.0763	0.0477	8.0000e-005		4.5700e-003	4.5700e-003		4.2200e-003	4.2200e-003		7.7775	7.7775	2.3000e-003	0.0000	7.8259

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
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
Worker	1.0000e-003	2.9100e-003	0.0294	8.0000e-005	6.4300e-003	5.0000e-005	6.4800e-003	1.7100e-003	5.0000e-005	1.7500e-003		5.7030	5.7030	2.9000e-004	0.0000	5.7090
Total	1.0000e-003	2.9100e-003	0.0294	8.0000e-005	6.4300e-003	5.0000e-005	6.4800e-003	1.7100e-003	5.0000e-005	1.7500e-003		5.7030	5.7030	2.9000e-004	0.0000	5.7090

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.8600e-003	0.0763	0.0477	8.0000e-005		4.5700e-003	4.5700e-003		4.2200e-003	4.2200e-003		7.7775	7.7775	2.3000e-003	0.0000	7.8259
Total	7.8600e-003	0.0763	0.0477	8.0000e-005		4.5700e-003	4.5700e-003		4.2200e-003	4.2200e-003		7.7775	7.7775	2.3000e-003	0.0000	7.8259

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
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
Worker	1.0000e-003	2.9100e-003	0.0294	8.0000e-005	6.4300e-003	5.0000e-005	6.4800e-003	1.7100e-003	5.0000e-005	1.7500e-003		5.7030	5.7030	2.9000e-004	0.0000	5.7090
Total	1.0000e-003	2.9100e-003	0.0294	8.0000e-005	6.4300e-003	5.0000e-005	6.4800e-003	1.7100e-003	5.0000e-005	1.7500e-003		5.7030	5.7030	2.9000e-004	0.0000	5.7090

3.5 Civil Work - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0272	0.3039	0.1585	3.7000e-004		0.0153	0.0153		0.0141	0.0141		34.6758	34.6758	0.0105	0.0000	34.8955
Total	0.0272	0.3039	0.1585	3.7000e-004		0.0153	0.0153		0.0141	0.0141		34.6758	34.6758	0.0105	0.0000	34.8955

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
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
Worker	3.5200e-003	9.8000e-003	0.0992	2.4000e-004	0.0196	1.6000e-004	0.0197	5.2000e-003	1.4000e-004	5.3400e-003		18.0504	18.0504	9.4000e-004	0.0000	18.0702
Total	3.5200e-003	9.8000e-003	0.0992	2.4000e-004	0.0196	1.6000e-004	0.0197	5.2000e-003	1.4000e-004	5.3400e-003		18.0504	18.0504	9.4000e-004	0.0000	18.0702

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	0.0272	0.3039	0.1585	3.7000e-004		0.0153	0.0153		0.0141	0.0141		34.6758	34.6758	0.0105	0.0000	34.8954
Total	0.0272	0.3039	0.1585	3.7000e-004		0.0153	0.0153		0.0141	0.0141		34.6758	34.6758	0.0105	0.0000	34.8954

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
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
Worker	3.5200e-003	9.8000e-003	0.0992	2.4000e-004	0.0196	1.6000e-004	0.0197	5.2000e-003	1.4000e-004	5.3400e-003		18.0504	18.0504	9.4000e-004	0.0000	18.0702
Total	3.5200e-003	9.8000e-003	0.0992	2.4000e-004	0.0196	1.6000e-004	0.0197	5.2000e-003	1.4000e-004	5.3400e-003		18.0504	18.0504	9.4000e-004	0.0000	18.0702

3.5 Civil Work - 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	8.2200e-003	0.0904	0.0504	1.2000e-004		4.5400e-003	4.5400e-003		4.1700e-003	4.1700e-003		11.2098	11.2098	3.4300e-003	0.0000	11.2819
Total	8.2200e-003	0.0904	0.0504	1.2000e-004		4.5400e-003	4.5400e-003		4.1700e-003	4.1700e-003		11.2098	11.2098	3.4300e-003	0.0000	11.2819

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
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
Worker	1.0000e-003	2.9100e-003	0.0294	8.0000e-005	6.4300e-003	5.0000e-005	6.4800e-003	1.7100e-003	5.0000e-005	1.7500e-003		5.7030	5.7030	2.9000e-004	0.0000	5.7090
Total	1.0000e-003	2.9100e-003	0.0294	8.0000e-005	6.4300e-003	5.0000e-005	6.4800e-003	1.7100e-003	5.0000e-005	1.7500e-003		5.7030	5.7030	2.9000e-004	0.0000	5.7090

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	8.2200e-003	0.0904	0.0504	1.2000e-004		4.5400e-003	4.5400e-003		4.1700e-003	4.1700e-003		11.2097	11.2097	3.4300e-003	0.0000	11.2819
Total	8.2200e-003	0.0904	0.0504	1.2000e-004		4.5400e-003	4.5400e-003		4.1700e-003	4.1700e-003		11.2097	11.2097	3.4300e-003	0.0000	11.2819

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
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
Worker	1.0000e-003	2.9100e-003	0.0294	8.0000e-005	6.4300e-003	5.0000e-005	6.4800e-003	1.7100e-003	5.0000e-005	1.7500e-003		5.7030	5.7030	2.9000e-004	0.0000	5.7090
Total	1.0000e-003	2.9100e-003	0.0294	8.0000e-005	6.4300e-003	5.0000e-005	6.4800e-003	1.7100e-003	5.0000e-005	1.7500e-003		5.7030	5.7030	2.9000e-004	0.0000	5.7090

3.6 Contaminated Soil Export - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1400e-003	0.0000	2.1400e-003	2.6000e-004	0.0000	2.6000e-004		0.0000	0.0000	0.0000	0.0000	0.0000
Total					2.1400e-003	0.0000	2.1400e-003	2.6000e-004	0.0000	2.6000e-004		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0213	0.4899	0.1765	1.3000e-003	0.0378	7.7800e-003	0.0456	0.0102	7.1600e-003	0.0173		119.1385	119.1385	7.9000e-004	0.0000	119.1552
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
Worker	3.4000e-004	9.5000e-004	9.6300e-003	2.0000e-005	1.9000e-003	2.0000e-005	1.9200e-003	5.0000e-004	1.0000e-005	5.2000e-004		1.7535	1.7535	9.0000e-005	0.0000	1.7554
Total	0.0216	0.4908	0.1861	1.3200e-003	0.0397	7.8000e-003	0.0475	0.0107	7.1700e-003	0.0178		120.8920	120.8920	8.8000e-004	0.0000	120.9106

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					2.1400e-003	0.0000	2.1400e-003	2.6000e-004	0.0000	2.6000e-004		0.0000	0.0000	0.0000	0.0000	0.0000
Total					2.1400e-003	0.0000	2.1400e-003	2.6000e-004	0.0000	2.6000e-004		0.0000	0.0000	0.0000	0.0000	0.0000

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	0.0213	0.4899	0.1765	1.3000e-003	0.0378	7.7800e-003	0.0456	0.0102	7.1600e-003	0.0173		119.1385	119.1385	7.9000e-004	0.0000	119.1552
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
Worker	3.4000e-004	9.5000e-004	9.6300e-003	2.0000e-005	1.9000e-003	2.0000e-005	1.9200e-003	5.0000e-004	1.0000e-005	5.2000e-004		1.7535	1.7535	9.0000e-005	0.0000	1.7554
Total	0.0216	0.4908	0.1861	1.3200e-003	0.0397	7.8000e-003	0.0475	0.0107	7.1700e-003	0.0178		120.8920	120.8920	8.8000e-004	0.0000	120.9106

3.6 Contaminated Soil Export - 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					2.1400e-003	0.0000	2.1400e-003	2.6000e-004	0.0000	2.6000e-004		0.0000	0.0000	0.0000	0.0000	0.0000
Total					2.1400e-003	0.0000	2.1400e-003	2.6000e-004	0.0000	2.6000e-004		0.0000	0.0000	0.0000	0.0000	0.0000

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	6.0400e-003	0.1317	0.0503	3.8000e-004	0.0325	2.0900e-003	0.0346	8.2300e-003	1.9200e-003	0.0102		34.4670	34.4670	2.3000e-004	0.0000	34.4718
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
Worker	9.0000e-005	2.5000e-004	2.5500e-003	1.0000e-005	5.6000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004		0.4959	0.4959	2.0000e-005	0.0000	0.4964
Total	6.1300e-003	0.1320	0.0528	3.9000e-004	0.0330	2.0900e-003	0.0351	8.3800e-003	1.9200e-003	0.0103		34.9629	34.9629	2.5000e-004	0.0000	34.9682

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					2.1400e-003	0.0000	2.1400e-003	2.6000e-004	0.0000	2.6000e-004		0.0000	0.0000	0.0000	0.0000	0.0000
Total					2.1400e-003	0.0000	2.1400e-003	2.6000e-004	0.0000	2.6000e-004		0.0000	0.0000	0.0000	0.0000	0.0000

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	6.0400e-003	0.1317	0.0503	3.8000e-004	0.0325	2.0900e-003	0.0346	8.2300e-003	1.9200e-003	0.0102		34.4670	34.4670	2.3000e-004	0.0000	34.4718
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
Worker	9.0000e-005	2.5000e-004	2.5500e-003	1.0000e-005	5.6000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004		0.4959	0.4959	2.0000e-005	0.0000	0.4964
Total	6.1300e-003	0.1320	0.0528	3.9000e-004	0.0330	2.0900e-003	0.0351	8.3800e-003	1.9200e-003	0.0103		34.9629	34.9629	2.5000e-004	0.0000	34.9682

3.7 Rough Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0520	0.0000	0.0520	0.0276	0.0000	0.0276		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2777	0.1676	1.8000e-004		0.0148	0.0148		0.0136	0.0136		16.6281	16.6281	5.0200e-003	0.0000	16.7334
Total	0.0263	0.2777	0.1676	1.8000e-004	0.0520	0.0148	0.0668	0.0276	0.0136	0.0412		16.6281	16.6281	5.0200e-003	0.0000	16.7334

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	0.0212	0.4736	0.1847	1.2500e-003	0.0298	7.4900e-003	0.0373	8.1600e-003	6.8900e-003	0.0151		114.8255	114.8255	7.7000e-004	0.0000	114.8417
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
Worker	1.6600e-003	4.6200e-003	0.0468	1.1000e-004	9.2300e-003	7.0000e-005	9.3000e-003	2.4500e-003	7.0000e-005	2.5200e-003		8.5095	8.5095	4.5000e-004	0.0000	8.5188
Total	0.0229	0.4782	0.2315	1.3600e-003	0.0390	7.5600e-003	0.0466	0.0106	6.9600e-003	0.0176		123.3350	123.3350	1.2200e-003	0.0000	123.3605

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0520	0.0000	0.0520	0.0276	0.0000	0.0276		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2777	0.1676	1.8000e-004		0.0148	0.0148		0.0136	0.0136		16.6280	16.6280	5.0200e-003	0.0000	16.7334
Total	0.0263	0.2777	0.1676	1.8000e-004	0.0520	0.0148	0.0668	0.0276	0.0136	0.0412		16.6280	16.6280	5.0200e-003	0.0000	16.7334

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	0.0212	0.4736	0.1847	1.2500e-003	0.0298	7.4900e-003	0.0373	8.1600e-003	6.8900e-003	0.0151		114.8255	114.8255	7.7000e-004	0.0000	114.8417
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
Worker	1.6600e-003	4.6200e-003	0.0468	1.1000e-004	9.2300e-003	7.0000e-005	9.3000e-003	2.4500e-003	7.0000e-005	2.5200e-003		8.5095	8.5095	4.5000e-004	0.0000	8.5188
Total	0.0229	0.4782	0.2315	1.3600e-003	0.0390	7.5600e-003	0.0466	0.0106	6.9600e-003	0.0176		123.3350	123.3350	1.2200e-003	0.0000	123.3605

3.8 Plant Equipment Installation - 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	0.4199	3.5598	2.2231	3.9900e-003		0.2013	0.2013		0.1912	0.1912		352.8164	352.8164	0.0833	0.0000	354.5660
Total	0.4199	3.5598	2.2231	3.9900e-003		0.2013	0.2013		0.1912	0.1912		352.8164	352.8164	0.0833	0.0000	354.5660

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2800e-003	0.1201	0.0404	3.5000e-004	8.3500e-003	1.9200e-003	0.0103	2.2900e-003	1.7700e-003	4.0500e-003		31.5772	31.5772	2.1000e-004	0.0000	31.5816
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
Worker	0.0125	0.0366	0.3697	9.8000e-004	0.0810	6.2000e-004	0.0816	0.0215	5.7000e-004	0.0221		71.7832	71.7832	3.6100e-003	0.0000	71.8591
Total	0.0178	0.1567	0.4102	1.3300e-003	0.0893	2.5400e-003	0.0919	0.0238	2.3400e-003	0.0261		103.3605	103.3605	3.8200e-003	0.0000	103.4406

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	0.4199	3.5598	2.2231	3.9900e-003		0.2013	0.2013		0.1912	0.1912		352.8159	352.8159	0.0833	0.0000	354.5655
Total	0.4199	3.5598	2.2231	3.9900e-003		0.2013	0.2013		0.1912	0.1912		352.8159	352.8159	0.0833	0.0000	354.5655

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2800e-003	0.1201	0.0404	3.5000e-004	8.3500e-003	1.9200e-003	0.0103	2.2900e-003	1.7700e-003	4.0500e-003		31.5772	31.5772	2.1000e-004	0.0000	31.5816
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
Worker	0.0125	0.0366	0.3697	9.8000e-004	0.0810	6.2000e-004	0.0816	0.0215	5.7000e-004	0.0221		71.7832	71.7832	3.6100e-003	0.0000	71.8591
Total	0.0178	0.1567	0.4102	1.3300e-003	0.0893	2.5400e-003	0.0919	0.0238	2.3400e-003	0.0261		103.3605	103.3605	3.8200e-003	0.0000	103.4406

3.9 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	0.1622	1.6300	0.9396	1.8500e-003		0.0919	0.0919		0.0846	0.0846		171.3041	171.3041	0.0525	0.0000	172.4064
Total	0.1622	1.6300	0.9396	1.8500e-003		0.0919	0.0919		0.0846	0.0846		171.3041	171.3041	0.0525	0.0000	172.4064

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	9.1600e-003	0.1782	0.0914	5.1000e-004	0.0143	2.7800e-003	0.0171	3.8500e-003	2.5600e-003	6.4100e-003		45.9807	45.9807	3.1000e-004	0.0000	45.9872
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
Worker	0.0160	0.0469	0.4732	1.2500e-003	0.1036	7.9000e-004	0.1044	0.0275	7.3000e-004	0.0282		91.8677	91.8677	4.6200e-003	0.0000	91.9647
Total	0.0252	0.2251	0.5646	1.7600e-003	0.1179	3.5700e-003	0.1215	0.0314	3.2900e-003	0.0347		137.8484	137.8484	4.9300e-003	0.0000	137.9519

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	0.1622	1.6300	0.9396	1.8500e-003		0.0919	0.0919		0.0846	0.0846		171.3039	171.3039	0.0525	0.0000	172.4062
Total	0.1622	1.6300	0.9396	1.8500e-003		0.0919	0.0919		0.0846	0.0846		171.3039	171.3039	0.0525	0.0000	172.4062

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	9.1600e-003	0.1782	0.0914	5.1000e-004	0.0143	2.7800e-003	0.0171	3.8500e-003	2.5600e-003	6.4100e-003		45.9807	45.9807	3.1000e-004	0.0000	45.9872
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
Worker	0.0160	0.0469	0.4732	1.2500e-003	0.1036	7.9000e-004	0.1044	0.0275	7.3000e-004	0.0282		91.8677	91.8677	4.6200e-003	0.0000	91.9647
Total	0.0252	0.2251	0.5646	1.7600e-003	0.1179	3.5700e-003	0.1215	0.0314	3.2900e-003	0.0347		137.8484	137.8484	4.9300e-003	0.0000	137.9519

3.9 Building Construction - 2018

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	0.0340	0.3370	0.2134	4.5000e-004		0.0186	0.0186		0.0171	0.0171		40.9535	40.9535	0.0128	0.0000	41.2213
Total	0.0340	0.3370	0.2134	4.5000e-004		0.0186	0.0186		0.0171	0.0171		40.9535	40.9535	0.0128	0.0000	41.2213

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	2.2000e-003	0.0401	0.0219	1.2000e-004	0.0120	6.8000e-004	0.0127	3.0400e-003	6.2000e-004	3.6600e-003		10.9840	10.9840	8.0000e-005	0.0000	10.9857
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
Worker	3.3500e-003	0.0103	0.1041	3.0000e-004	0.0252	1.9000e-004	0.0254	6.6800e-003	1.7000e-004	6.8500e-003		21.4828	21.4828	1.0400e-003	0.0000	21.5047
Total	5.5500e-003	0.0504	0.1259	4.2000e-004	0.0372	8.7000e-004	0.0381	9.7200e-003	7.9000e-004	0.0105		32.4669	32.4669	1.1200e-003	0.0000	32.4904

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	0.0340	0.3370	0.2134	4.5000e-004		0.0186	0.0186		0.0171	0.0171		40.9535	40.9535	0.0128	0.0000	41.2212
Total	0.0340	0.3370	0.2134	4.5000e-004		0.0186	0.0186		0.0171	0.0171		40.9535	40.9535	0.0128	0.0000	41.2212

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	2.2000e-003	0.0401	0.0219	1.2000e-004	0.0120	6.8000e-004	0.0127	3.0400e-003	6.2000e-004	3.6600e-003		10.9840	10.9840	8.0000e-005	0.0000	10.9857
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
Worker	3.3500e-003	0.0103	0.1041	3.0000e-004	0.0252	1.9000e-004	0.0254	6.6800e-003	1.7000e-004	6.8500e-003		21.4828	21.4828	1.0400e-003	0.0000	21.5047
Total	5.5500e-003	0.0504	0.1259	4.2000e-004	0.0372	8.7000e-004	0.0381	9.7200e-003	7.9000e-004	0.0105		32.4669	32.4669	1.1200e-003	0.0000	32.4904

3.10 First Paving - 2017**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0287	0.3002	0.1780	3.0000e-004		0.0161	0.0161		0.0148	0.0148		28.1445	28.1445	8.6200e-003	0.0000	28.3256
Paving	2.7500e-003					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0315	0.3002	0.1780	3.0000e-004		0.0161	0.0161		0.0148	0.0148		28.1445	28.1445	8.6200e-003	0.0000	28.3256

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	4.0700e-003	0.0791	0.0406	2.3000e-004	5.3500e-003	1.2400e-003	6.5900e-003	1.4700e-003	1.1400e-003	2.6000e-003		20.4108	20.4108	1.4000e-004	0.0000	20.4137
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
Worker	1.4300e-003	4.1700e-003	0.0422	1.1000e-004	9.2300e-003	7.0000e-005	9.3000e-003	2.4500e-003	6.0000e-005	2.5100e-003		8.1825	8.1825	4.1000e-004	0.0000	8.1912
Total	5.5000e-003	0.0833	0.0827	3.4000e-004	0.0146	1.3100e-003	0.0159	3.9200e-003	1.2000e-003	5.1100e-003		28.5933	28.5933	5.5000e-004	0.0000	28.6048

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	0.0287	0.3002	0.1780	3.0000e-004		0.0161	0.0161		0.0148	0.0148		28.1445	28.1445	8.6200e-003	0.0000	28.3256
Paving	2.7500e-003					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0315	0.3002	0.1780	3.0000e-004		0.0161	0.0161		0.0148	0.0148		28.1445	28.1445	8.6200e-003	0.0000	28.3256

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	4.0700e-003	0.0791	0.0406	2.3000e-004	5.3500e-003	1.2400e-003	6.5900e-003	1.4700e-003	1.1400e-003	2.6000e-003			20.4108	1.4000e-004	0.0000	20.4137
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	1.4300e-003	4.1700e-003	0.0422	1.1000e-004	9.2300e-003	7.0000e-005	9.3000e-003	2.4500e-003	6.0000e-005	2.5100e-003			8.1825	4.1000e-004	0.0000	8.1912
Total	5.5000e-003	0.0833	0.0827	3.4000e-004	0.0146	1.3100e-003	0.0159	3.9200e-003	1.2000e-003	5.1100e-003			28.5933	5.5000e-004	0.0000	28.6048

3.11 Construct Foundation - 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					1.5400e-003	0.0000	1.5400e-003	1.7000e-004	0.0000	1.7000e-004			0.0000	0.0000	0.0000	0.0000
Off-Road	0.0647	0.7190	0.3480	8.2000e-004		0.0315	0.0315		0.0290	0.0290			76.0854	0.0233	0.0000	76.5749
Total	0.0647	0.7190	0.3480	8.2000e-004	1.5400e-003	0.0315	0.0330	1.7000e-004	0.0290	0.0291			76.0854	0.0233	0.0000	76.5749

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	8.7000e-004	0.0153	9.8200e-003	4.0000e-005	1.0200e-003	2.3000e-004	1.2500e-003	2.8000e-004	2.2000e-004	4.9000e-004			3.8944	3.0000e-005	0.0000	3.8949
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	2.9900e-003	8.7300e-003	0.0881	2.3000e-004	0.0193	1.5000e-004	0.0194	5.1200e-003	1.4000e-004	5.2600e-003			17.1090	8.6000e-004	0.0000	17.1270
Total	3.8600e-003	0.0240	0.0980	2.7000e-004	0.0203	3.8000e-004	0.0207	5.4000e-003	3.6000e-004	5.7500e-003			21.0033	8.9000e-004	0.0000	21.0220

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5400e-003	0.0000	1.5400e-003	1.7000e-004	0.0000	1.7000e-004		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0647	0.7190	0.3480	8.2000e-004		0.0315	0.0315		0.0290	0.0290		76.0853	76.0853	0.0233	0.0000	76.5748
Total	0.0647	0.7190	0.3480	8.2000e-004	1.5400e-003	0.0315	0.0330	1.7000e-004	0.0290	0.0291		76.0853	76.0853	0.0233	0.0000	76.5748

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	8.7000e-004	0.0153	9.8200e-003	4.0000e-005	1.0200e-003	2.3000e-004	1.2500e-003	2.8000e-004	2.2000e-004	4.9000e-004		3.8944	3.8944	3.0000e-005	0.0000	3.8949
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
Worker	2.9900e-003	8.7300e-003	0.0881	2.3000e-004	0.0193	1.5000e-004	0.0194	5.1200e-003	1.4000e-004	5.2600e-003		17.1090	17.1090	8.6000e-004	0.0000	17.1270
Total	3.8600e-003	0.0240	0.0980	2.7000e-004	0.0203	3.8000e-004	0.0207	5.4000e-003	3.6000e-004	5.7500e-003		21.0033	21.0033	8.9000e-004	0.0000	21.0220

3.12 Final 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					1.5400e-003	0.0000	1.5400e-003	1.7000e-004	0.0000	1.7000e-004		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1079	0.0576	1.1000e-004		5.5500e-003	5.5500e-003		5.1100e-003	5.1100e-003		9.9284	9.9284	2.9900e-003	0.0000	9.9912
Total	0.0105	0.1079	0.0576	1.1000e-004	1.5400e-003	5.5500e-003	7.0900e-003	1.7000e-004	5.1100e-003	5.2800e-003		9.9284	9.9284	2.9900e-003	0.0000	9.9912

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
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
Worker	6.5000e-004	1.9000e-003	0.0192	5.0000e-005	4.2000e-003	3.0000e-005	4.2300e-003	1.1100e-003	3.0000e-005	1.1400e-003		3.7193	3.7193	1.9000e-004	0.0000	3.7233
Total	6.5000e-004	1.9000e-003	0.0192	5.0000e-005	4.2000e-003	3.0000e-005	4.2300e-003	1.1100e-003	3.0000e-005	1.1400e-003		3.7193	3.7193	1.9000e-004	0.0000	3.7233

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5400e-003	0.0000	1.5400e-003	1.7000e-004	0.0000	1.7000e-004		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1079	0.0576	1.1000e-004		5.5500e-003	5.5500e-003		5.1100e-003	5.1100e-003		9.9284	9.9284	2.9900e-003	0.0000	9.9912
Total	0.0105	0.1079	0.0576	1.1000e-004	1.5400e-003	5.5500e-003	7.0900e-003	1.7000e-004	5.1100e-003	5.2800e-003		9.9284	9.9284	2.9900e-003	0.0000	9.9912

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
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
Worker	6.5000e-004	1.9000e-003	0.0192	5.0000e-005	4.2000e-003	3.0000e-005	4.2300e-003	1.1100e-003	3.0000e-005	1.1400e-003		3.7193	3.7193	1.9000e-004	0.0000	3.7233
Total	6.5000e-004	1.9000e-003	0.0192	5.0000e-005	4.2000e-003	3.0000e-005	4.2300e-003	1.1100e-003	3.0000e-005	1.1400e-003		3.7193	3.7193	1.9000e-004	0.0000	3.7233

3.13 Architectural Coatings - 2018

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	0.0539					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2400e-003	0.0150	0.0139	2.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003		1.9149	1.9149	1.8000e-004	0.0000	1.9188
Total	0.0561	0.0150	0.0139	2.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003		1.9149	1.9149	1.8000e-004	0.0000	1.9188

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
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
Worker	5.6000e-004	1.7200e-003	0.0173	5.0000e-005	4.2000e-003	3.0000e-005	4.2300e-003	1.1100e-003	3.0000e-005	1.1400e-003		3.5805	3.5805	1.7000e-004	0.0000	3.5841
Total	5.6000e-004	1.7200e-003	0.0173	5.0000e-005	4.2000e-003	3.0000e-005	4.2300e-003	1.1100e-003	3.0000e-005	1.1400e-003		3.5805	3.5805	1.7000e-004	0.0000	3.5841

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	0.0539					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.2400e-003	0.0150	0.0139	2.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003		1.9149	1.9149	1.8000e-004	0.0000	1.9188
Total	0.0561	0.0150	0.0139	2.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003		1.9149	1.9149	1.8000e-004	0.0000	1.9188

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
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
Worker	5.6000e-004	1.7200e-003	0.0173	5.0000e-005	4.2000e-003	3.0000e-005	4.2300e-003	1.1100e-003	3.0000e-005	1.1400e-003		3.5805	3.5805	1.7000e-004	0.0000	3.5841
Total	5.6000e-004	1.7200e-003	0.0173	5.0000e-005	4.2000e-003	3.0000e-005	4.2300e-003	1.1100e-003	3.0000e-005	1.1400e-003		3.5805	3.5805	1.7000e-004	0.0000	3.5841

3.14 Final paving - 2018

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	0.0294	0.3065	0.2183	4.1000e-004		0.0160	0.0160		0.0148	0.0148		37.5324	37.5324	0.0117	0.0000	37.7777
Paving	2.7500e-003					0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0322	0.3065	0.2183	4.1000e-004		0.0160	0.0160		0.0148	0.0148		37.5324	37.5324	0.0117	0.0000	37.7777

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	6.0400e-003	0.1099	0.0599	3.4000e-004	8.0300e-003	1.8500e-003	9.8800e-003	2.2000e-003	1.7000e-003	3.9100e-003		30.1081	30.1081	2.1000e-004	0.0000	30.1125
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
Worker	1.6800e-003	5.1700e-003	0.0520	1.5000e-004	0.0126	9.0000e-005	0.0127	3.3400e-003	9.0000e-005	3.4300e-003		10.7414	10.7414	5.2000e-004	0.0000	10.7524
Total	7.7200e-003	0.1150	0.1120	4.9000e-004	0.0206	1.9400e-003	0.0226	5.5400e-003	1.7900e-003	7.3400e-003		40.8495	40.8495	7.3000e-004	0.0000	40.8648

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	0.0294	0.3065	0.2183	4.1000e-004		0.0160	0.0160		0.0148	0.0148			37.5323	37.5323	0.0117	0.0000	37.7777
Paving	2.7500e-003					0.0000	0.0000		0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0322	0.3065	0.2183	4.1000e-004		0.0160	0.0160		0.0148	0.0148			37.5323	37.5323	0.0117	0.0000	37.7777

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	6.0400e-003	0.1099	0.0599	3.4000e-004	8.0300e-003	1.8500e-003	9.8800e-003	2.2000e-003	1.7000e-003	3.9100e-003			30.1081	30.1081	2.1000e-004	0.0000	30.1125
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
Worker	1.6800e-003	5.1700e-003	0.0520	1.5000e-004	0.0126	9.0000e-005	0.0127	3.3400e-003	9.0000e-005	3.4300e-003			10.7414	10.7414	5.2000e-004	0.0000	10.7524
Total	7.7200e-003	0.1150	0.1120	4.9000e-004	0.0206	1.9400e-003	0.0226	5.5400e-003	1.7900e-003	7.3400e-003			40.8495	40.8495	7.3000e-004	0.0000	40.8648

Attachment B
Project Operation Emission
Calculations

Operational Emissions Summary

Asphalt Plant #1 Existing Operation Emissions

	Onsite Equipment Historical Data				
	2009 ton/year	2010 ton/year	2011 ton/year	2012 ton/year	2013 ton/year
ROG	4.568	3.451	3.53	4.214	3.665
Nox	5.078	3.102	3.591	2.109	3.469
Sox	0.433	0.038	0.287	0.012	0.399
CO	37.517	8.152	24.893	0.703	34.434
PM10	5.07	0.962	3.333	4.385	4.249
PM2.5	5.07	0.962	3.333	4.385	4.249

Note:

Onsite equipment historical data were obtained from SCAQMD website, emission data for the facility

Asphalt Plant #1 Existing Operational Emissions

	Onsite Equipment ton/year	Offsite Vehicles ton/year	Total Emissions ton/year
ROG	3.89	0.52	4.40
Nox	3.47	13.21	16.68
Sox	0.23	0.02	0.26
CO	21.14	2.48	23.62
PM10	3.60	0.43	4.03
PM2.5	3.60	0.32	3.91

Asphalt Plant #1 Proposed Project Operational Emissions

	Onsite Equipment ton/year	Offsite Vehicles ton/year	Total Emissions ton/year
ROG	9.72	0.34	10.06
Nox	4.61	14.98	19.58
Sox	1.20	0.05	1.25
CO	45.63	2.31	47.95
PM10	8.32	0.44	8.76
PM2.5	7.10	0.23	7.33

Asphalt Plant #1 Proposed Project Operational Emissions Increase - by onsite and offsite (Compared to Existing Plant)

	Proposed Plant ton/year	Existing Plant ton/year	Onsite Equipment Increase ton/year	Offsite Trucks increase ton/year	Annual Emissions Increase ton/year	Daily Emissions Increase lb/day	SCAQMD Threshold lb/day	Exceed threshold?
ROG	10.06	4.40	5.83	-0.18	5.66	31.01	55	No
Nox	19.58	16.68	1.14	1.77	2.91	15.94	55	No
Sox	1.25	0.26	0.96	0.02	0.99	5.42	150	No
CO	47.95	23.62	24.49	-0.17	24.32	133.28	550	No
PM10	8.76	4.03	4.72	0.01	4.73	25.94	150	No
PM2.5	7.33	3.91	3.50	-0.08	3.42	18.73	55	No

Operational Emissions Summary

GHG Emissions Summary - Stationary Sources

	Onsite Equipment	Electricity Use	Amortized Construction Emissions	Total	SCAQMD Threshold (MT/year)	Exceed Threshold?
	MT/year	MT/year	MT/year	MT/year		
Existing Condition	3404.0	92.4	0	3496.4	10,000	NO
Proposed Project	11914.1	135.1	52.9	12102.1		
Increase	8510.1	42.7	52.9	8605.7		

Note:
 GHG emissions from existing equipment operation are not available from historical reporting data. It was estimated by scaling the GHG emissions from the proposed plant.
 Existing plant production 200,000 tons/year
 Proposed plant production 700,000 tons/year
 Proposed project onsite emissions include GHG from drum dryer and the oil heater. GHG from other equipment is expected to be minimal.

GHG Emissions -Offsite Vehicle Emissions

	Offsite Vehicle
	MT/year
Existing Condition	2596.1
Proposed Project	5116.9
Increase	2520.7

Note: Diesel Vehicle emissions were estimated with CNG vehicle emission factors were from the 2105 c factors of Climate Registry

Emissions Calculations Details

GHG Emissions from Onsite Equipment

Dryer	New Plant
Production (ton/year)	700,000
CO2 (lb/ton)	33
CH4 (lb/ton)	0.012
CO2e (lb/ton)	33.252
CO2e Emissions (MT/year)	10,558.18

Emission factor from EPA AP-42 Table 11.1-8

Global Warming Potential

CO2	1
CH4	21
N2O	310

Oil heater	New Plant
Rating (MMBtu/hr)	2.9
Operating Hours	8760
CO2 (g/mmBtu)	53060
CH4 (g/mmBtu)	0.95
N2O (g/mmBtu)	0.95
CO2e (g/mmBtu)	53374.45
CO2e Emissions (MT/year)	1355.92

Emission factor from 2015 default emission factors of Climate Registry.

GHG Emission Factors for Electricity

Global Warming Potential	Emission Factor			
	CO2	CH4	N2O	CO2e
	lb/MWH	lb/MWH	lb/MWH	lb/MWH
	650.31	0.0312	0.00567	652.78
	1	25	298	

Note:
 GHG emission factors were EPA eGRID2012 Summary Tables, October 2015.

Electricity Use Emissions

	Demand (MW)	Hours	Electricity Usage (MWH/year)	GHG Emissions (MT/year)
Existing Plant	0.125	2496	312.0	92.4
Proposed Plant	0.35	3640	456.3	135.1

Vehicle Emissions

Existing Operation

Material Type	Qty/yr (Tons)	Truck Load Capacity (tons)	Round Trip Distance (mi)	# of round trips/yr	VMT/year	% CNG VMT	%Diesel VMT	CNG VMT	Diesel VMT
RAP	20,000	12	2	1667	3,333	20%	80%	667	2,667
Oil	10,000	25	143	400	57,200	0%	100%	-	57,200
Aggregates	170,000	18	100	9444	944,444	0%	100%	-	944,444
HMA	200,000	12	20	16667	333,333	20%	80%	66,667	266,667
Total VMT					1,338,311	-	-	67,333	1,270,978

Existing Vehicle Emissions

Emission Source	VMT/year	Vehicle Emission Factors (g/mile)							Emissions (ton/year)						
		ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}	CO ₂	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}	CO ₂
Existing Condition (diesel Vehicles)	1,270,978	0.356	1.353	9.216	0.016	0.288	0.217	1697.545	0.4982	1.896	12.912	0.023	0.403	0.304	2378.24
Existing Condition (CNG Vehicles)	67,333	0.110	2.707	3.500	0.016	0.127	0.064	1522.796	0.0082	0.201	0.260	0.001	0.009	0.005	113.02
Existing Condition (worker)	280,800	0.036	1.251	0.110	0.003	0.047	0.020	338.761	0.0112	0.387	0.034	0.001	0.014	0.006	104.85
Total Existing Vehicle Emissions									0.5175	2.484	13.205	0.025	0.427	0.315	2596.12

Note:

Operating hours 8 hours/day
 Operating days 312 days/year
 number or worker 12
 round trip distance of worker 75 miles/RT

Except for CNG trucks, emission factors are from the ARB EMFAC2014 model for SCAQMD. Worker commute vehicles were assumed to be gasoline fueled automobiles, and haul trucks were modeled as heavy heavy-duty diesel trucks.

Proposed Vehicle Operation

Material Type	Qty/yr (Tons)	Truck Load Capacity (tons)	Round Trip Distance (mi)	# of round trips/yr	VMT/year	% CNG VMT	%Diesel VMT	CNG VMT	Diesel VMT
RAP	339,500	18	2	18861	37,722	90%	10%	33,950	3,772
Oil	21,000	25	143	840	120,120	0%	100%	-	120,120
Aggregates	339,500	18	100	18861	1,886,111	0%	100%	-	1,886,111
HMA	700,000	18	20	38889	777,778	90%	10%	700,000	77,778
Total VMT					2,821,731	-	-	733,950	2,087,781

Proposed Plant Vehicle Emissions

	VMT/year	Vehicle Emission Factors (g/mile)							Emissions (ton/year)						
		ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}	CO ₂	ROG	CO	NOx	SOx	PM ₁₀	PM _{2.5}	CO ₂
Proposed Project (diesel vehicles)	2,087,781	0.131	0.510	5.266	0.016	0.139	0.075	1638.8	0.302	1.174	12.118	0.036	0.321	0.174	3,772
Proposed Project (CNG vehicles)	733,950	0.041	1.020	3.500	0.016	0.127	0.064	1522.8	0.033	0.825	2.832	0.013	0.103	0.052	1,232
Proposed Project (worker)	328,500	0.020	0.870	0.075	0.003	0.047	0.020	312.924	0.007	0.315	0.027	0.001	0.017	0.007	113
Total Existing Vehicle Emissions									0.342	2.314	14.977	0.050	0.441	0.233	5,117

Note:

Operating hours 10 hours/day
 Operating days 365 days/year
 number or worker 12
 round trip distance of worker 75 miles/RT

Except for CNG trucks, emission factors are from the ARB EMFAC2014 model for SCAQMD. Worker commute vehicles were assumed to be gasoline fueled automobiles, and haul trucks were modeled as heavy heavy-duty diesel trucks.

Alternative Fuel (CNG) Vehicle Emission Factors

Summary of LNG or CNG Heavy Duty Trucks Emissions Comparing to Similar Diesel Trucks and Derived Emission Factors

Pollutant	percent change compared to similar diesel trucks - Natural Gas Garbage Trucks (1)	Percent change used in EPA Smartway Truck Tool (2)	Percent Change Tested by SCAQMD (3)	ARB Emission Factors (4)	Emission Factor Used For Analysis	Note:
ROG	-69% to -83%	NA	-64%	NA	Assumed 69% reduction from diesel	least reduction rate
CO	-11% to +200%	NA	200%	NA	Assumed 200% increase from diesel	highest increase rate
Nox	-32% to -85%	-17%	-17%	3.5 g/mile	3.5 g/mile	ARB Emission Factor
Sox	NA	NA	0%	NA	Assumed same as diesel	Assumed the same as diesel trucks
PM10	-85% to -94%	-86%	-85%	0.029	0.029 g/mile	ARB Emission Factor
PM2.5	-85% to -94%	-86%	-85%	NA	0.029 g/mile, Assumed same as PM10	ARB Emission Factor
CO2e	-21% to +5%	NA	-11%	NA	See Below	derived from the Climate Registry default emission factor

Date Source:

1. Greening Garbage Trucks: New Technologies for Cleaner Air, Inform Inc, 2003

Data Sources: Kevin Chandler et al., "Waste Management's LNG Truck Fleet: Final Results," National Renewable Energy Laboratory, January 2001; Nigel Clark et al., "A Long-Term Field Emissions Study of Natural Gas Fueled Refuse Haulers in New York City," Society of Automotive Engineers technical paper 982456, presented at the International Fall Fuels and Lubricants Meeting and Exposition, San Francisco, CA, October 1998

2. SmartWay 2.0.11 Truck Tool – Technical Documentation, EPA, January 2012.

3. SCAQMD Preliminary Key Findings In-Use NOx Emissions Compared to 2010 Exhaust Emission Standard (SCAQMD, March 2013, http://www.aqmd.gov/hb/attachments/2011-2015/2013Mar/SpecMtgAttach/3_Testing_OnRoad_HD_Vehicles.pdf). Accessed in October 2013. Data is derived from the figure for 2010 refuse trucks.

4. ARB Methods to Find the Cost-Effectiveness of Funding Air Quality Projects, Emission Factor Tables (ARB, 2010). Table 5.

2015 Climate Registry Default Emission Factors of LNG Vehicles, updated April 2015

Vehicle/Fuel Type	Default CO ₂ EF (kg/scf or kg/gal)	Converted CO ₂ EF (g/mile)	Default N ₂ O EF (g/mi)	Default CH ₄ EF (g/mi)	CO ₂ e (g/mi)
HD LNG	4.46	1427.26	0.175	1.966	1522.8
GWP		1	310	21	

Source: <http://www.theclimateregistry.org/wp-content/uploads/2015/04/2015-TCR-Default-EF-April-2015-FINAL.pdf>

Fuel economy data used in derivation of the CO₂ emission factors (Based on factors used in SmartWay 2.0.11 Truck Tool – Technical Documentation, EPA, January 2012.)

5.98 miles per gallon diesel	Class 8a
4.75 miles per gallon gasoline	(25.9% lower than diesel vehicles)
3.12 miles per gallon LNG	(Assumed the same fuel economy as diesel vehicles, applied a factor of 1.52 to convert gasoline volume to LNG)

Asphalt Plant - New Plant Emissions

Emissions Summary - Facility wide Summary

Emission rates	Daily Emissions (lb/day)	Annual Emissions (ton/year)
ROG	53.24	9.72
NOx	25.24	4.61
SOx	6.56	1.20
CO	250.05	45.63
PM10	45.61	8.32
PM2.5	38.88	7.10

Emissions from Each Equipment / Process

Emissions Summary - dryer

Emission rates	Daily Emissions (lb/day)	Annual Emissions (ton/year)
ROG	96.00	8.40
NOx	51.03	4.47
SOx	13.60	1.19
CO	520.00	45.50
PM10	72.86	6.38
PM2.5	72.86	6.38

Emissions Summary - Silo Filling

Emission rates	Daily Emissions (lb/day)	Annual Emissions (ton/year)
ROG	7.31	0.64
NOx	NA	NA
SOx	NA	NA
CO	0.71	0.06
PM10	0.35	0.03
PM2.5	0.35	0.03

Emissions Summary - Loadout

Emission rates	Daily Emissions (lb/day)	Annual Emissions (ton/year)
ROG	2.35	0.21
NOx	NA	NA
SOx	NA	NA
CO	0.81	0.07
PM10	0.31	0.03
PM2.5	0.31	0.03

Emissions Summary - Asphalt Cement Storage Tanks (total of 3 tanks)

Emission rates	Daily Emissions (lb/day)	Annual Emissions (ton/year)
ROG	NA	0.40
NOx	NA	NA
SOx	NA	NA
CO	NA	NA
PM10	NA	NA
PM2.5	NA	NA

Emissions Summary - Oil Heater

Emission rates	Daily Emissions (lb/day)	Annual Emissions (ton/year)
ROG	0.38	0.07
NOx	0.77	0.14
SOx	0.04	0.01
CO	0.01	0.00
PM10	0.52	0.09
PM2.5	0.52	0.09

Emissions Summary f - Fugitive Dust (Transfer Points and Stock Pile)

Emission rates	Daily Emissions (lb/day)	Annual Emissions (ton/year)
ROG	NA	NA
NOx	NA	NA
SOx	NA	NA
CO	NA	NA
PM10	20.53	1.80
PM2.5	6.49	0.57

Note: Fugitive dust emissions include sources of conveyor transfer points, scalping screen, front loader, and stock pile,

Asphalt Plant - New Plant Emissions**Dryer Emissions - Criteria Pollutants/GHG****Natural Gas Fired Drum Mix Asphalt Plant With Fabric Filter AP-42 Section 11.1**

Number of dryer	1
Max Hourly Production	400 Tons/hr
Max Daily Production	4,000 Tons/day
Average Daily Production	1,918 Tons/day
Average Monthly Production	58,333 tons/month
Annual Production	700,000 Tons/yr (Proposed Throughput Limit)
Maximum working days	31 days/month
maximum Operating hours	10 hours/day
Operating hours	7 days/week

Pollutant	Emission Factor (lb/ton)	Max. Emissions (lb/hr)	Max. Emissions (lb/day)	Average Emissions (lb/day)	Emissions (ton/yr)
VOC ^a	0.024	9.60	96.00	46.67	8.40
NOx ^b	0.013	5.10	51.03	24.81	4.47
SO ₂ ^a	0.0034	1.36	13.60	6.61	1.19
CO ^a	0.13	52.00	520.00	252.78	45.50
PM (total) ^c	0.01821	7.29	72.86	35.42	6.38
PM-10 (total) ^c	0.01821	7.29	72.86	35.42	6.38
PM-2.5 ^c	0.01821	7.29	72.86	35.42	6.38

Notes:

^aAP-42, Table 11.1-7 and Table 11.1-8, Emission Factors for CO, VOC, SO₂, from Drum Mix Hot Asphalt Plants, 3/04^bNox emissions were estimated based on SCAQMD BACT requirements, 36 ppm at 3% O₂^cPM emission factors derived from Rule 1155 Limits

PM emissions were estimated based on SCAQMD Rule 1155 for Tier 3 baghouses

Dryer Maximum Heat Input Rating: 115 MMBtu/hr

PM Emission Factor (Rule 1155 Limit) 0.01 gr/scf

Baghouse Flow Rate 85000 scfm

PM Emissions 7.29 lb/hr

PM10 and PM2.5 emissions are assumed to be the same as PM.

Asphalt Plant - New Plant Emissions**Natural Gas Fired Oil Heater**

Number of heater	1
Heater Rating	2.9 MMBtu/hour
Fuel Consumption Rate	0.0028 MMscf/hr
Maximum working days	31 days/month
Operating hours	24 hours/day
Natural Gas heat Value	1,020 MMBtu/MMscf
Operating days	365 days/year

Pollutant	Emission Factor (lb/MMscf)	Emission factor units	Emissions (lb/hr)	Emissions (lb/day)	Emissions (ton/yr)
VOC ^a	5.5	lb/MMscf	0.016	0.38	0.0685
NOx ^b	0.011	lb/MMBtu	0.032	0.77	0.1409
SO ₂ ^a	0.6	lb/MMscf	0.002	0.041	0.0075
CO ^b	0.075	lb/MMscf	0.000	0.005	0.0009
PM ^a	7.6	lb/MMscf	0.022	0.52	0.0946
PM-10 ^a	7.6	lb/MMscf	0.022	0.52	0.0946
PM-2.5	7.6	lb/MMscf	0.022	0.52	0.0946

Notes:

^aAP-42, Table 1.4-2, Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion, 7/98^bNOx and CO emission factors were based on SCAQMD BACT requirements

Nox Rule 1146.1	9 ppm @ 3% O ₂	
Nox Emission Factor (BACT requirement)	20 ppm @ 3% O ₃	
Nox Emission Factor (Rule 1146.1)	0.011 lb/MMBtu	
CO Emission Factor (BACT requirement)	100 ppm @ 3% O ₃	water tube
CO Emission Factor (BACT requirement)	0.075 lb/MMBtu	

Asphalt Plant - New Plant Emissions

Silo Filling Operations

1

Max Hourly Production 400 T/hr
 Max Daily Production 4,000 Tons/day
 Max Annual Production 700,000 Tons/yr

Pollutant	Emission Factor ^a Silo Fill (lb/ton)	Uncontrolled Emissions			Controlled Emissions		
		lb/hr	lb/day	ton/year	lb/hr	lb/day	ton/year
VOC ^b	1.22E-02	4.87E+00	4.87E+01	4.2653	0.73	7.31	0.64
NOx	NA	NA	NA	NA	NA	NA	NA
SO ₂	NA	NA	NA	NA	NA	NA	NA
CO ^c	1.18E-03	0.4720	4.72E+00	0.4130	0.071	0.708	0.062
PM-10 (total) ^c	5.86E-04	0.2344	2.34E+00	0.2051	0.035	0.352	0.031
PM-2.5 ^c	5.86E-04	0.2344	2.34E+00	0.2051	0.035	0.352	0.031
PM (total) ^c	5.86E-04	0.2344	2.34E+00	0.2051	0.035	0.352	0.031

^aEmission factors are from AP-42 11.1, Hot Mix Asphalt Plants, 3/04

^bAP-42, Table 11.1-16, Speciation Profiles for Load-out, Silo Filling, & Asphalt Storage--Organic Volatile-Based Compounds, 3/04, (EF=Spec% * TOC PM EF) VOC 100% Compound/TOC Control Efficiency: 85% based on 90% capture and 95% efficiency based on blue smoke documentation

^cAP-42, Table 11.1-14, Predictive Emission Factor Equations for Load-Out and Silo Filling Operations, 3/04

		<u>SILO FILL</u> lb/ton
Total PM EF = 0.00332 + 0.00105(-V)e ^{((0.0251)(T+460)-20.43)}	=	5.859E-04
Organic PM EF = 0.00105(-V)e ^{((0.0251)(T+460)-20.43)}	=	2.539E-04
TOC EF = 0.0504(-V)e ^{((0.0251)(T+460)-20.43)}	=	1.219E-02
CO EF = 0.00488(-V)e ^{((0.0251)(T+460)-20.43)}	=	1.180E-03
Defaults: (-V) = 0.5		
Default: T (°F) = 325		

Asphalt Plant - New Plant Emissions

Load-out Operations

1
 Max Hourly Production 400 T/hr
 Max Daily Production 4,000 Tons/day
 Max Annual Production 700,000 Tons/yr

Pollutant	Uncontrolled Emissions				Controlled Emissions		
	Emission Factor ^a Loadout (lb/ton)	(lb/hr)	lb/day	Emissions (ton/yr)	Emissions (lb/hr) 1-hr Average	lb/day	Emissions (ton/yr)
VOC ^b	3.91E-03	1.564	15.6	1.37	0.23	2.35	0.21
NOx	NA	NA	NA	NA	NA	NA	NA
SO ₂	NA	NA	NA	NA	NA	NA	NA
CO ^c	1.35E-03	0.540	5.4	0.47	0.081	0.810	0.071
PM-10 (total) ^c	5.22E-04	0.209	2.1	0.18	0.031	0.313	0.027
PM-2.5 ^c	5.22E-04	0.209	2.1	0.18	0.031	0.313	0.027
PM (total) ^c	5.22E-04	0.209	2.1	0.18	0.031	0.313	0.027

^aEmission factors are from AP-42 11.1, Hot Mix Asphalt Plants, 3/04

^bAP-42, Table 11.1-16, Speciation Profiles for Load-out, Silo Filling, & Asphalt Storage--Organic Volatile-Based Compounds, 3/04, (EF=Spec% * TOC PM EF). VOC 94% Compound/TOC Control Efficiency: 85% based on 90% capture and 95% efficiency based on blue smoke documentation

^cAP-42, Table 11.1-14, Predictive Emission Factor Equations for Load-Out and Silo Filling Operations, 3/04

Defaults: (-V) = 0.5

T (°F) = 325

	<u>LOADOUT</u>
Total PM EF = 0.000181+0.00141(-V)e ^{((0.0251)/(T+460)-20.43)}	= 5.219E-04
Organic PM EF = 0.00141(-V)e ^{((0.0251)/(T+460)-20.43)}	= 3.409E-04
TOC PM EF = 0.0172(-V)e ^{((0.0251)/(T+460)-20.43)}	= 4.159E-03
CO PM EF = 0.00558(-V)e ^{((0.0251)/(T+460)-20.43)}	= 1.349E-03

Asphalt Plant - New Plant Emissions

Scalping Screens and Transfer Points

Max Hourly Production	400 T/hr	97% T/hr is Aggregate & RAP =	388 T/hr	RAP	50%
Max Daily Production	4,000 Tons/day	97% T/day is Aggregate & RAP =	3,880 T/day	Aggregate	50%
Max Annual Production	700,000 Tons/yr	97% T/yr is Aggregate & RAP =	679,000 T/yr		
Maximum hour	11 hours/day				
Notes:					
Percent aggregate & RAP based on raw material minus oil from the data request					

RAP Crusher

Based on SCAQMD PM Emission Factors for Processes/Equipment at Asphalt, Cement, Concrete and Aggregate Product Plants (<http://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/particulate-matter-emission-factors-for-processes-equipment-at-asphalt-cement-concrete-and-aggregate-product-plants.pdf?sfvrsn=10>)

%RAP of total throughput	50%	194 ton/hr of RAP
		1,940 ton/day of RAP
		339,500 ton/yr of RAP
% Control for TP points on conveyor:		95% based on SCAQMD guidance

Crushing Fine Crusher Controlled

Pollutant	Table 11.19.2-2 Emissions Factors UNCONTROLLED (lb/ton)	Uncontrolled Emissions				Controlled Emissions			
		Emissions (lb/hr) 1-hr	Emissions (lb/day) Max.	Emissions (lb/hr) 24-hr Average	Emissions (ton/yr)	Emissions (lb/hr) 1-hr	Emissions (lb/day) Max.	Emissions (lb/hr) 24-hr Average	Emissions (ton/yr)
PM (total)	3.90E-02	7.57	83.23	3.15	6.62	0.38	4.16	0.16	0.33
PM-10	1.50E-02	2.91	32.01	1.21	2.55	0.15	1.60	0.06	0.13
PM-2.5	5.69E-03	1.10	12.15	0.46	0.97	0.06	0.61	0.02	0.05

Notes:
PM2.5 emission factors based on PM2.5 to PM ratio in the Mineral Process Loss Appendix A - Updated CEIDARS List with PM2.5 Fractions
PM2.5 Fraction of Total PM 0.146

**Conveyor and Scalping Screen Emission Points
Conveyor Transfer Points**

Transfer from bins to conveyor and from conveyor to scalping screen:	194 T/hr	13 Transfer Points (Total RAP and Aggregate)
% Control for TP points on conveyor:	95% based on SCAQMD guidance	

Pollutant	Table 11.19.2-2 Emission Factors UNCONTROLLED (lb/ton)	Uncontrolled Emissions Per Transfer Point				Controlled Emissions Per Transfer Point				Controlled Total Emissions			
		Emissions (lb/hr) 1-hr	Emissions (lb/day) Max.	Emissions (lb/hr) 24-hr Average	Emissions (ton/yr)	Emissions (lb/hr) 1-hr	Emissions (lb/day) Max.	Emissions (lb/hr) 24-hr Average	Emissions (T/yr)	Emissions (lb/hr) 1-hr	Emissions (lb/day) Max.	Emissions (lb/hr) 24-hr Average	Emissions (ton/yr)
PM (total)	0.003	5.82E-01	6.40	2.43E-01	5.09E-01	2.91E-02	0.70	1.21E-02	2.55E-02	3.78E-01	9.08	1.58E-01	3.31E-01
PM-10 (total)	1.10E-03	2.13E-01	5.12	8.89E-02	1.87E-01	1.07E-02	0.26	4.45E-03	9.34E-03	1.39E-01	3.33	0.057795833	1.21E-01
PM-2.5	4.38E-04	8.50E-02	2.04	3.54E-02	7.44E-02	4.25E-03	0.10	1.77E-03	3.72E-03	5.52E-02	1.33	2.30E-02	4.83E-02

Notes:
PM2.5 emission factors based on PM2.5 to PM ratio in the Mineral Process Loss Appendix A - Updated CEIDARS List with PM2.5 Fractions
PM2.5 Fraction of Total PM 0.146

Aggregate and Rap Scalping Screen, AP-42 11.19.2 (8/04)

Aggregate and RAP flow across scalping screen onto conveyor (2 Scalping Screens):	194 T/hr
% Control for TP points on conveyor:	95% based on SCAQMD guidance

Pollutant	Emission Factor Table 11.19.2-2 COARSE SCREENING UNCONTROLLED (lb/ton)	Uncontrolled Emissions Per Transfer Point				Controlled Emissions Per Screen				Controlled Total Emissions			
		Emissions (lb/hr) 1-hr	Emissions (lb/day) Max.	Emissions (lb/hr) 24-hr Average	Emissions (ton/yr)	Emissions (lb/hr) 1-hr	Emissions (lb/day) Max.	Emissions (lb/hr) 24-hr Average	Emissions (ton/yr)	Emissions (lb/hr) 1-hr	Emissions (lb/day) Max.	Emissions (lb/hr) 24-hr Average	Emissions (ton/yr)
PM (total)	0.025	9.700	232.80	2.02E+00	4.24E+00	0.243	2.67	1.01E-01	2.12E-01	4.85E-01	5.34	2.02E-01	4.24E-01
PM-10 (total)	0.0087	1.688	40.51	7.03E-01	1.48E+00	0.084	0.93	3.52E-02	7.38E-02	1.69E-01	1.86	0.070325	1.48E-01
PM-2.5	3.65E-03	0.708	16.99	2.95E-01	6.20E-01	0.035	0.39	1.48E-02	3.10E-02	7.08E-02	0.78	2.95E-02	6.20E-02

Notes:
PM2.5 emission factors based on PM2.5 to PM ratio in the Mineral Process Loss Appendix A - Updated CEIDARS List with PM2.5 Fractions
PM2.5 Fraction of Total PM 0.146

Asphalt Plant - New Plant Emissions

Open Storage pile				Percentage of RAP	
Max Hourly Production	400 T/hr				
Max Daily Production	4,000 Tons/day				
Max Annual Production	700,000 Tons/yr				
97% T/hr is Aggregate & RAP =		388 T/hr		50%	194 T/hr RAP
97% T/day is Aggregate & RAP =		3,880 T/day			1,940 T/day RAP
97% T/yr is Aggregate & RAP =		679,000 T/yr			339,500 T/yr RAP

Notes:
Percent aggregate & RAP based on raw material minus oil from the data request

Pollutant	SCAQMD Emissions Factor (lb/ton)	Emissions 1-hour Maximum (lb/hr)	Emissions 24-hour average (lb/hr)	Emissions Annual (lb/year)	Emissions Annual (tpy)
PM (total) - uncontrolled	0.33	64.02	26.675	112035	56.0175
PM (total) - controlled	0.0165	3.2	1.3	5601.8	2.8
PM10 - controlled	0.00825	1.6	0.7	2800.9	1.4
PM2.5 - controlled	0.002409	0.5	0.2	817.9	0.4

Notes:
SCAQMD Particulate Matter (PM) Emission Factors For Process/Equipment at Asphalt, Cement, Concrete, and Aggregate Production Plants
 $E = TP \times EF$
 E = Emissions
 TP = annual tonnage of stored material = amount of material loaded into, or out of, the pile
 EF = Emission Factor

Controlled PM emissions include a 95% control efficiency as per SCAQMD Particulate Matter (PM) Emission Factors For Process/Equipment at Asphalt, Cement, Concrete, and Aggregate Production Plants

PM10 and PM2.5 emission factors based on Mineral Products Crushing, Screening, Blasting, Loading and Unloading SCAQMD Appendix A - Updated CEIDARS List with PM2.5 Fractions

PM2.5 Fraction of Total PM	0.146
PM10 Fraction of Total PM	0.50

Asphalt Plant - New Plant Emissions**Asphalt Storage Tanks**

Max Annual Production	700,000 Tons/yr
Storage Chemical	
Petroleum oil (1.018 g/cm ³ density)	3% of throughput 21000 tpy
Throughput	4,943,724 gallons per year total (all 3 tanks) 1,647,908 gallons per year per tank
Number of Tanks	3
Tank Height	50 feet
Tank Diameter	12 feet
Liquid Height	45 feet

Annual Working Loss Per Tank (lb/yr)	Breathing Loss Per Tank (lb/yr)	VOC Emissions Per Tank (lb/yr)	Total VOC Emissions (ton/yr)
89.39	0	89.39	0.134085

Notes:

Chemical assumed follow the methodology in AP42 Section 4.4.5 Emissions Factor Documentation for AP-42 Section 11.1 Hot Mix Asphalt Plants February 2004 (<http://www.epa.gov/ttn/chief/ap42/ch11/bgdocs/b11s01.pdf>)

Liquid Density	9.22 lb/gallon
Median liquid molecular weight	1000 g/g-mole
Vapor molecular weight	105 g/g-mole
Antoine's Constants	75350.06 A in K 9.00346 B in K

Conversion

1 ton =	907185 grams
1 cm ³ =	0.000264172 gallons

Year 2018 + Project Intersection LOS Summary

Intersection		AM Peak Hour						PM Peak Hour					
		2018 Conditions			2018 + Project Operations			2018 Conditions			2018 + Project Operations		
		Intersection Volume	V/C or Delay	LOS	Intersection Volume	V/C or Delay	LOS	Intersection Volume	V/C or Delay	LOS	Intersection Volume	V/C or Delay	LOS
1	I-10 WB ramps/8th St. (stop sign)	880	23.3	C	886	23.8	C	1120	60.5	F	1126	63	F
2	I-10 EB ramps/Porter St. (stop sign)	1085	19.2	C	1101	19.6	C	1072	21.5	C	1088	22	C
3	S. Santa Fe Ave./8th St.	2055	0.808	D	2101	0.814	D	2243	0.818	D	2289	0.827	D
4	S. Santa Fe Ave/ Porter St.	2738	0.821	D	2844	0.84	D	2743	0.811	D	2847	0.828	D
5	S. Santa Fe Ave./E. Olympic Blvd.	4305	1.359	F	4371	1.368	F	5273	1.624	F	5339	1.633	F
6	Soto St./U.S. 101 off-ramp	2722	0.847	D	2734	0.847	D	2633	0.774	C	2645	0.776	C
7	E. Olympic Blvd./Soto St.	5289	1.159	F	5301	1.161	F	6082	1.384	F	6094	1.385	F

Year 2040 + Project Intersection LOS Summary

Intersection		AM Peak Hour						PM Peak Hour					
		2040 Conditions			2040 + Project Operations			2040 Conditions			2040 + Project Operations		
		Intersection Volume	V/C or Delay	LOS	Intersection Volume	V/C or Delay	LOS	Intersection Volume	V/C or Delay	LOS	Intersection Volume	V/C or Delay	LOS
1	I-10 WB ramps/8th St. (Stop sign)	924	26.6	C	938	27.2	D	1176	87.7	F	1190	91.3	F
2	I-10 EB ramps/Porter St. (Stop sign)	1139	21.6	C	1155	24.4	C	1125	24.4	C	1141	25.1	C
3	S. Santa Fe Ave./8th St.	2165	0.85	D	2211	0.856	D	2363	0.861	D	2409	0.87	D
4	S. Santa Fe Ave/ Porter St.	2885	0.863	D	2989	0.882	D	2891	0.853	D	2995	0.871	D
5	S. Santa Fe Ave./E. Olympic Blvd.	4537	1.427	F	4603	1.435	F	5543	1.699	F	5609	1.708	F
6	Soto St./U.S. 101 off-ramp	2868	0.891	D	2880	0.891	D	2775	0.815	D	2787	0.896	D
7	E. Olympic Blvd./Soto St.	5574	1.218	F	5586	1.219	F	6409	1.452	F	6421	1.453	F