APPENDIX C

AIR QUALITY, GREENHOUSE GAS, AND HEALTH RISK ASSESSMENT BACKGROUND AND MODELING DATA

1. Air Quality

Ambient air quality standards (AAQS) have been adopted at State and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of toxic air contaminants (TACs). The City of Cupertino is in the San Francisco Bay Area Air Basin (SFBAAB) and is subject to the rules and regulations imposed by the Bay Area Air Quality Management District (BAAQMD), as well as the California AAQS adopted by the California Air Resources Board (CARB) and national AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed Project are summarized below. The discussion also identifies the natural factors in the air basin that affect air pollution.

1.1 REGULATORY FRAMEWORK

1.1.1 Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

Criteria air pollutants are the air pollutants for which AAQS have been developed that are regulated under the CAA. The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 1. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm[a]	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm[a]	
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Particulate Matter - Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarterly	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)	24 hours	25 µg/m^3	*	Industrial processes.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles when humidity <70%	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: California Air Resources Board (CARB), 2015, October 1. Ambient Air Quality Standards, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.
Notes: ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
[a] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

1.1.2 Air Pollutants of Concern

A substance in the air that can cause harm to humans and the environment is known as an air pollutant. Pollutants can be in the form of solid particles, liquid droplets, or gases. In addition, they may be natural or man-made.

1.1.2.1 CRITERIA AIR POLLUTANTS

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law. Air pollutants are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, nitrogen dioxide (NO_2), PM_{10}, and $PM_{2.5}$ are "criteria

air pollutants," which means that AAQS have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants.

A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

- **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little or no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of CO in the air basin. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. New findings indicate that CO emissions per mile are lowest at about 45 miles per hour (mph) for the average light-duty motor vehicle and begin to increase again at higher speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.[1] The air basin is designated under the California and National AAQS as being in attainment of CO criteria levels.[2]

- **Reactive Organic Gases (ROGs)** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, BAAQMD has established a significance threshold for this pollutant.

- **Nitrogen Oxides (NO_x)** are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 is an acute irritant and at equal concentrations more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm). NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high

[1] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011), Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[2] California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps, http://www.arb.ca.gov/desig/adm/adm.htm, June.

pressure.[3] The air basin is designated an attainment area for NO_2 under the National AAQS and California AAQS.[4]

- **Sulfur Dioxide (SO_2)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When SO_2 forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue.[5] The air basin is designated an attainment area for SO_2 under the California and National AAQS.[6]

- **Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004-inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch).

  Some particulate matter, such as pollen, occurs naturally. Most particulate matter in the air basin is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. An EPA scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, increased respiratory symptoms (e.g. irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the air basin. Wood burning in fireplaces and stoves is another large source of fine particulates.[7]

  Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individual with asthma); and alterations in lung tissue and structure and in respiratory tract defense

[3] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[4] California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps, http://www.arb.ca.gov/desig/adm/adm.htm, June.

[5] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[6] California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps, http://www.arb.ca.gov/desig/adm/adm.htm, June.

[7] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

mechanisms.[8] Diesel particulate matter (DPM) is classified a carcinogen by CARB. The air basin is designated nonattainment under the California AAQS for PM_{10} and nonattainment under both the California and National AAQS for $PM_{2.5}$.[9,10]

- **Ozone (O_3)** is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x,—both by-products of internal combustion engine exhaust—undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 levels usually build up during the day and peak in the afternoon. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees and materials such as rubber and fabrics.[11] The air basin is designated nonattainment of the 1-hour California AAQS and 8-hour California and National AAQS for O_3.[12]

- **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

  Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically.[13] The air basin is designated in attainment of the California and National AAQS for lead.[14] Because emissions of lead are found only in projects that are permitted by BAAQMD, lead is not an air quality of concern for the proposed Project.

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[8] South Coast Air Quality Management District (SCAQMD), 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.

[9] California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps, http://www.arb.ca.gov/desig/adm/adm.htm, June.

[10] On January 9, 2013, the EPA issued a final rule to determine that the SFBAAB has attained the 24-hour $PM_{2.5}$ National AAQS. This action suspends federal State Implementation Plan planning requirements for the Bay Area. The SFBAAB will continue to be designated nonattainment for the National 24-hour $PM_{2.5}$ standard until such time as BAAQMD elects to submit a redesignation request and a maintenance plan to EPA and EPA approves the proposed redesignation.

[11] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[12] California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps, http://www.arb.ca.gov/desig/adm/adm.htm, June.

[13] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

[14] California Air Resources Board (CARB), 2014. Area Designations: Activities and Maps, http://www.arb.ca.gov/desig/adm/adm.htm, June.

1.1.2.2 TOXIC AIR CONTAMINANTS

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 U.S. Code Section 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e. a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that it identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

At the time of the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[15] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

CARB has promulgated the following specific rules to limit TAC emissions:

- CARB Rule 2485 (13 CCR Chapter 10, Section 2485), Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- CARB Rule 2480 (13 CCR Chapter 10, Section 2480), Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools

[15] California Air Resources Board (CARB), 1999. Final Staff Report: Update to the Toxic Air Contaminant List.

- CARB Rule 2477 (13 CCR Section 2477 and Article 8), Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3 butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

1.1.3 Bay Area Air Quality Management District

BAAQMD is the agency responsible for assuring that the National and California AAQS are attained and maintained in the SFBAAB. BAAQMD is responsible for:

- Adopting and enforcing rules and regulations concerning air pollutant sources.
- Issuing permits for stationary sources of air pollutants.
- Inspecting stationary sources of air pollutants.
- Responding to citizen complaints.
- Monitoring ambient air quality and meteorological conditions.
- Awarding grants to reduce motor vehicle emissions.
- Conducting public education campaigns.
- Air quality management planning.

Air quality conditions in the air basin have improved significantly since the BAAQMD was created in 1955.[16] The BAAQMD prepares air quality management plans (AQMPs) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans (OAPs) for the National O_3 standard and clean air plans for the California O_3 standard. The BAAQMD prepares these AQMPs in coordination with the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The most recent adopted comprehensive plan is the 2010 Bay Area Clean Air Plan, which was adopted on September 15, 2010, and incorporates significant new scientific data, primarily in the form of updated

[16] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

1.1.3.1 BAAQMD 2010 BAY AREA CLEAN AIR PLAN

The purpose of the 2010 Bay Area Clean Air Plan is to: 1) update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement all feasible measures to reduce O_3; 2) consider the impacts of O_3 control measures on PM, TAC, and greenhouse gases (GHGs) in a single, integrated plan; 3) review progress in improving air quality in recent years; and 4) establish emission control measures in the 2009 to 2012 timeframe. The 2010 Bay Area Clean Air Plan also provides the framework for SFBAAB to achieve attainment of the California AAQS. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme. The attainment status for the SFBAAB is shown in Table 2. The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

1.1.3.2 BAAQMD'S COMMUNITY AIR RISK EVALUATION PROGRAM (CARE)

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk–weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.[17]

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. The highest modeled risks were found east of San Francisco, near West Oakland, and the Maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

1. Western Contra Costa County and the cities of Richmond and San Pablo
2. Western Alameda County along the Interstate 880 (I-880) corridor and the cities of Berkeley, Alameda, Oakland, and Hayward
3. San Jose

[17] Bay Area Air Quality Management District (BAAQMD), 2014. Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective and Path Forward (2004–2013), April.

4. Eastern side of San Francisco

5. Concord

6. Vallejo

7. Pittsburgh and Antioch

San Jose is the closest CARE program–impacted community to the city. Based on the Phase II boundaries, Cupertino lies outside this impacted community.

The major contributor to acute and chronic non-cancer health effects in the air basin is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[18] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.[19]

1.1.3.3 REGULATION 7, ODOROUS SUBSTANCES

Sources of objectionable odors may occur within the City. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

1.1.3.4 OTHER BAAQMD REGULATIONS

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to individual development projects allowed under the proposed General Plan, including:

- BAAQMD, Regulation 2, Rule 2, New Source Review
- BAAQMD, Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- BAAQMD Regulation 6, Rule 1, General Requirements
- BAAQMD Regulation 6, Rule 2, Commercial Cooking Equipment
- BAAQMD Regulation 8, Rule 3, Architectural Coatings

[18] Bay Area Air Quality Management District (BAAQMD), 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area.

[19] Bay Area Air Quality Management District (BAAQMD), 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines.

- BAAQMD Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- BAAQMD Regulation 8, Rule 7, Gasoline Dispensing Facilities
- BAAQMD Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)

1.1.3.5 SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

The Santa Clara Valley Transportation Authority (VTA) is the congestion management agency for Santa Clara County. VTA is tasked with developing a comprehensive transportation improvement program among local jurisdictions that will reduce traffic congestion and improve land use decision making and air quality. VTA's latest congestion management program (CMP) is the *2013 Congestion Management Program*. VTA's countywide transportation model must be consistent with the regional transportation model developed by the MTC with ABAG data. The countywide transportation model is used to help evaluate cumulative transportation impacts of local land use decisions on the CMP system. In addition, VTA's updated CMP includes multi-modal performance standards and trip reduction and transportation demand management strategies consistent with the goal of reducing regional VMT in accordance with Senate Bill 375 (SB 375). Strategies identified in the 2013 CMP for Santa Clara County, where local jurisdictions are responsible agencies, include:[20]

- **Traffic Level of Service:** Monitor and submit report on the level of service (LOS) on CMP roadway network intersections using CMP software and procedures.
- **Transportation Model and Database:** Certify that member agency models are consistent with the CMP model.
- **Community Form and Impact Analysis:** Prepare a transportation impact analysis (TIA) for projects that generate 100 or more peak hour trips and submit to the CMP according to TIA Guidelines schedule.
- **Community Form and Impact Analysis:** Submit relevant conditions of approval to VTA for projects generating TIAs.
- **Community Form and Impact Analysis:** Prepare and submit land use monitoring data to the CMP on all land use projects approved from July 1 to June 30 of the previous year.
- **Community Form and Impact Analysis:** Submit an annual statement certifying that the member agency has complied with the CMP Land Use Impact Analysis Program.
- **Monitoring and Conformance:** Outline the requirements and procedures established for conducting annual traffic LOS and land use monitoring efforts. Support the Traffic Level of Service and Community Form and Impact Analysis Elements.
- **Capital Improvement Program:** Develop a list of projects intended to maintain or improve the level of service on the designated system and to maintain transit performance standards.

[20] Santa Clara Valley Transportation Authority (VTA), 2013. 2013 Congestion Management Program, http://www.vta.org/sfc/servlet.shepherd/version/download/068A0000001Q7pt, October.

- **Deficiency Plan:** Prepare deficiency plans for facilities that violate CMP traffic LOS standards or that are projected to violate LOS standards using the adopted deficiency plan requirements.

- **Deficiency Plan:** Submit a deficiency plan implementation status report as part of annual monitoring.

1.2 ENVIRONMENTAL SETTING

1.2.1 San Francisco Bay Area Air Basin

The BAAQMD is the regional air quality agency for the SFBAAB, which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.[21]

1.2.1.1 METEOROLOGY

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits, resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast.

The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

1.2.1.2 WIND PATTERNS

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San

[21] This section describing the air basin is from Bay Area Air Quality Management District, 2010 (Revised 2011), Appendix C: Sample Air Quality Setting, in *California Environmental Quality Act Air Quality Guidelines*.

Francisco International Airport in July is about 17 knots (from 3:00 p.m. to 4:00 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

1.2.1.3 TEMPERATURE

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons the temperatures at the coast can be 35 degrees Fahrenheit (ºF) cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10ºF.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

1.2.1.4 PRECIPITATION

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e. air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, when mixing and ventilation are low and pollutant levels build up.

1.2.1.5 WIND CIRCULATION

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and

winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

1.2.1.6 INVERSIONS

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e. the vertical depth in the atmosphere available for diluting air contaminants near the ground. There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions are more common in the summer and fall, and radiation inversions are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

1.2.2 Existing Ambient Air Quality

1.2.2.1 ATTAINMENT STATUS OF THE SFBAAB

Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme. The attainment status for the air basin is shown in Table 2. The air basin is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

Table 2 Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment
PM_{10}	Nonattainment	Unclassified/Attainment
$PM_{2.5}$	Nonattainment	Unclassified/Attainment[a]
CO	Attainment	Attainment
NO_2	Attainment	Unclassified
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

Source: California Air Resources Board, 2014, Area Designations: Activities and Maps, http://www.arb.ca.gov/desig/adm/adm.htm, June 4.

[a] In December 2014, US EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ National AAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015 (BAAQMD 2016).

1.2.2.2 EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the Project site are best documented by measurements made by the BAAQMD. In addition to 24 permanent monitoring stations around the Bay Area, BAAQMD has a special monitoring station in Cupertino at the Monta Vista

Park on Foothill Boulevard. This station started operating in September 2010. Therefore, for years prior to 2010, data from the San Jose Jackson Street Monitoring Station was used in this analysis. Data from these stations are summarized in Table 3. The data show occasional violations of the State and federal O_3 standards. The State and federal CO, NO_2, PM_{10}, and $PM_{2.5}$ standards have not been exceeded in the last five years in the vicinity of the City.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2009	2010	2011	2012	2013
Ozone (O_3)[a]					
State 1-Hour ≥ 0.09 ppm	0	0	0	0	0
State 8-hour ≥ 0.07 ppm	0	3	0	0	1
Federal 8-Hour > 0.075 ppm	0	1	0	0	1
Maximum 1-Hour Conc. (ppm)	0.088	0.086	0.086	0.083	0.091
Maximum 8-Hour Conc. (ppm)	0.069	0.092	0.067	0.067	0.078
Carbon Monoxide (CO)[a]					
State 8-Hour > 9.0 ppm	0	0	0	0	0
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	0
Maximum 8-Hour Conc. (ppm)	2.50	0.93	0.95	0.73	*
Nitrogen Dioxide (NO_2)[a]					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	69.0	48.6	42.5	44.7	41.9
Coarse Particulates (PM_{10})[a]					
State 24-Hour > 50 µg/m^3	0	0	0	0	0
Federal 24-Hour > 150 µg/m^3	0	0	0	0	0
Maximum 24-Hour Conc. (µg/m^3)	43.3	27.9	28.9	41.5	33.5
Fine Particulates ($PM_{2.5}$)[a]					
Federal 24-Hour > 35 µg/m^3	0	*	*	*	*
Maximum 24-Hour Conc. (µg/m^3)	35.0	25.0	30.5	27.5	38.9

Source: California Air Resources Board, 2015, Air Pollution Data Monitoring Cards (2009, 2010, 2011, 2012, and 2013), Accessed December 15, 2015, http://www.arb.ca.gov/adam/index.html.

Notes: ppm: parts per million; ppb: parts per billion; µg/m^3: or micrograms per cubic meter

* = insufficient data

[a] Data from Cupertino Monitoring Station for years 2010–2013. Data from the San Jose Jackson Street Monitoring Station for year 2009.

1.2.2.3 EXISTING EMISSIONS

The 12.4-acre Project site is currently developed with 342 residential units, which generates criteria air pollutants emissions from vehicle trips, energy use (e.g., heating and cooling), and other area sources on-site (e.g., landscape fuel use, aerosols, and architectural coatings).

1.2.3 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to

stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population.

The closest sensitive receptors proximate to the Project site are the residents at the apartment complex approximately 130 feet to the northwest of the Project site. . Other nearby sensitive receptors includes the single-family homes further to the east and south, St. Joseph of Cupertino School approximately 390 feet east of the site, and Happy Days Child Development Center approximately 850 feet west of the site.

1.3 METHODOLOGY

The BAAQMD "CEQA Air Quality Guidelines" were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. In May 2011, the updated guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts.

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA.

Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and that set aside the significance thresholds. The BAAQMD recognizes that lead agencies may rely on the previously recommended thresholds of significance in its CEQA Guidelines adopted in 1999. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds. The City finds, therefore, that despite the Superior Court's ruling, and in light of the subsequent case history discussed below, the science and reasoning in the BAAQMD 2011 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. For that reason, substantial evidence supports continued use of the BAAQMD 2011 CEQA Air Quality Guidelines.

1.3.1 Criteria Air Pollutant Emissions

The proposed Project qualifies as a project-level project under BAAQMD's criteria. For project-level analyses, BAAQMD has adopted screening criteria and significance criteria that would be applicable to the proposed Project. If a project exceeds the screening level, it would be required to conduct a full analysis using BAAQMD's significance criteria.

Regional Significance Criteria

BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4. Criteria for both construction and operational phases of the Project are shown.

Table 4 BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM10	82 (Exhaust)	82	15
PM2.5	54 (Exhaust)	54	10
PM10 and PM2.5 Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

Local CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- Project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The Project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The Project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g. tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[22]

Odors

BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain

[22] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

odorous compounds. In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30 day period can be declared a public nuisance. BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[23]

1.3.2 Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to the siting of a new source. However, local jurisdictions may choose to apply these criteria when siting new receptors. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level.

For assessing community risk and hazards, sources within a 1,000-foot radius are considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources.[24,25]

The proposed Project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the surrounding residential receptors. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[26] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.[27]

The thresholds identified below are applied to the proposed Project:

Community Risk and Hazards – Project

Project-level construction emissions of TACs or $PM_{2.5}$ from the proposed Project to individual sensitive receptors within 1,000 feet of the Project site that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- Non-compliance with a qualified Community Risk Reduction Plan;

[23] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). *California Environmental Quality Act Air Quality Guidelines.*

[24] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

[25] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards.

[26] Bay Area Air Quality Management District, 2010, Screening Tables for Air Toxics Evaluations during Construction.

[27] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.

- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e. chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution;

- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant, cumulatively considerable contribution.[28]

Community Risk and Hazards – Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone.

A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the Project, exceeds the following:

- Non-compliance with a qualified Community Risk Reduction Plan; or

- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or

- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[29]

Current BAAQMD guidance recommends the determination of cancer risks using the Office of Environmental Health Hazard Assessment's (OEHHA) methodology, which was originally adopted in 2003.[30,31] In February 2015, OEHHA adopted new health risk assessment guidance which includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rates.[32] However, BAAQMD has not formally adopted the new OEHHA methodology into their CEQA guidance. To be conservative, the cancer risks associated with project implementation and significance conclusions were determined using the new 2015 OEHHA guidance for risk assessments.

[28] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.
[29] Bay Area Air Quality Management District (BAAQMD), 2010 (Revised 2011). California Environmental Quality Act Air Quality Guidelines, Appendix D: Threshold of Significance Justification.
[30] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards.
[31] Office of Environmental Health Hazard Assessment (OEHHA), 2003. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.
[32] Office of Environmental Health Hazard Assessment (OEHHA), 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

2. Greenhouse Gas Emissions

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[33,34,35] The major GHG are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global warming potential (GWP) gases.

    - *Chlorofluorocarbons (CFCs)* are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere,

[33] Intergovernmental Panel on Climate Change, 2001. Third Assessment Report: Climate Change 2001, New York: Cambridge University Press.

[34] Water vapor (H2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant because it is considered part of the feedback loop of changing radiative forcing rather than a primary cause of change.

[35] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2014a). However, state and national GHG inventories do not include black carbon yet due to ongoing work related to resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced, along with HFCs, as alternatives to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas, soluble in alcohol and ether and slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs. [36,37]

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high global warming potential (GWP) gases. Table 5 lists the GHG and their relative GWP compared to CO_2. The GWP is used to convert GHGs to CO_2-equivalent (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Second Assessment Report, GWP values for CH_4 are such that a project generating 10 metric tons (MT) of CH_4 would be equivalent to 210 MT of CO_2.

[36] United States Environmental Protection Agency, 2012. Greenhouse Gas Emissions, http://www.epa.gov/climatechange/ghgemissions/gases.html.

[37] Intergovernmental Panel on Climate Change, 2001. Third Assessment Report: Climate Change 2001, New York: Cambridge University Press.

Table 5 GHG Emissions and their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	50 to 200	1	1
Methane[2] (CH_4)	12 (±3)	12	21	25
Nitrous Oxide (N_2O)	120	114	310	298
Hydrofluorocarbons:				
HFC-23	264	270	11,700	14,800
HFC-32	5.6	4.9	650	675
HFC-125	32.6	29	2,800	3,500
HFC-134a	14.6	14	1,300	1,430
HFC-143a	48.3	52	3,800	4,470
HFC-152a	1.5	1.4	140	124
HFC-227ea	36.5	34.2	2,900	3,220
HFC-236fa	209	240	6,300	9,810
HFC-4310mee	17.1	15.9	1,300	1,030
Perfluoromethane: CF_4	50,000	50,000	6,500	7,390
Perfluoroethane: C_2F_6	10,000	10,000	9,200	12,200
Perfluorobutane: C_4F_{10}	2,600	NA	7,000	8,860
Perfluoro-2-methylpentane: C_6F_{14}	3,200	NA	7,400	9,300
Sulfur Hexafluoride (SF_6)	3,200	NA	23,900	22,800

Source: Intergovernmental Panel on Climate Change, 1996, Second Assessment Report: Climate Change 1996, New York: Cambridge University Press; and Intergovernmental Panel on Climate Change, 2007, Fourth Assessment Report: Climate Change 2001, New York: Cambridge University Press.

Notes: The IPCC has published updated global warming potential (GWP) values in its Fifth Assessment Report (2013) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in the Second Assessment Report are still used by SCAQMD to maintain consistency in GHG emissions modeling. In addition, the 2008 Scoping Plan was based on the GWP values in the Second Assessment Report.

1 Based on 100-year time horizon of the GWP of the air pollutant relative to CO_2 .

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

2.1 CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

California is the second largest emitter of GHG in the United States, only surpassed by Texas, and the tenth largest GHG emitter in the world.[38] However, California also has over 12 million more people than the State of Texas. Because of more stringent air emission regulations, in 2001 California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO_2 emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services).[39]

[38] California Energy Commission (CEC), 2005. Climate Change Emissions Estimates from Bemis, Gerry and Jennifer Allen, Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update, California Energy Commission Staff Paper CEC-600-2005-025, Sacramento, California, June.

[39] California Energy Commission (CEC), 2006. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004, Report CEC-600-2006-013-SF, December.

CARB's latest update to the statewide GHG emissions inventory was conducted in 2012 for year 2009 emissions.[40] In 2009, California produced 457 million metric tons (MMT) of CO_2-equivalent (CO_2e) GHG emissions.[41] California's transportation sector is the single largest generator of GHG emissions, producing 37.9 percent of the State's total emissions. Electricity consumption is the second largest source, comprising 22.7 percent. Industrial activities are California's third largest source of GHG emissions, comprising 17.8 percent of the State's total emissions. Other major sectors of GHG emissions include commercial and residential, recycling and waste, high global warming potential GHGs, agriculture, and forestry. [42]

In 2015, the statewide GHG emissions inventory was updated for 2000 to 2013 emissions using the GWPs in IPCC's Fourth Assessment Report. Based on these GWPs, California produced 459 million metric tons (MMT) CO_2e GHG emissions in 2013. California's transportation sector remains the single largest generator of GHG emissions, producing 36.8 percent of the State's total emissions. Electricity consumption made up 19.7 percent, and industrial activities produced 20.2 percent. Other major sectors of GHG emissions include commercial and residential, recycling and waste, high global warming potential GHGs, and agriculture.[43]

2.2 HUMAN INFLUENCE ON CLIMATE CHANGE

For approximately 1,000 years before the Industrial Revolution, the amount of GHG in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that are attributable to human activities. The amount of CO_2 in the Earth's atmosphere has increased by more than 35 percent since preindustrial times, and the concentration of CO_2 in the atmosphere has increased at an average rate of 1.4 parts per million (ppm) per year since 1960, mainly due to combustion of fossil fuels and deforestation.[44] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone.[45] Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[46] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so

[40] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (AB 32) (2006).

[41] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

[42] California Air Resources Board (CARB), 2012. California Greenhouse Gas Inventory for 2000–2009. By Category as Defined by the Scoping Plan. April.

[43] California Air Resources Board (CARB). 2015, April 24. California Greenhouse Gas Inventory for 2000–2013: By Category as Defined by the Scoping Plan.

[44] Intergovernmental Panel on Climate Change (IPCC), 2007. Fourth Assessment Report: Climate Change 2007, New York: Cambridge University Press.

[45] At the end of the last ice age, the concentration of CO_2 increased by around 100 ppm (parts per million) over about 8,000 years, or approximately 1.25 ppm per century. Since the start of the industrial revolution, the rate of increase has accelerated markedly. The rate of CO_2 accumulation currently stands at around 150 ppm/century—more than 200 times faster than the background rate for the past 15,000 years.

[46] California Climate Action Team (CAT), 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature, March.

that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[47]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historic trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty. For example, there are varying degrees of certainty on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas;
- Warmer and more frequent hot days and nights over most land areas;
- An increase in frequency of warm spells/heat waves over most land areas;
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas;
- Areas affected by drought increases;
- Intense tropical cyclone activity increases;
- Increased incidence of extreme high sea level (excluding tsunamis).

2.3 POTENTIAL CLIMATE CHANGE IMPACTS FOR CALIFORNIA

Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada. By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1–8.6°F, depending on emissions levels.[48]

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures, 2) a smaller fraction of precipitation falling as snow, 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones, 4) an advance snowmelt of 5 to 30 days earlier in the springs, and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[49] According to the California Climate Action Team, even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 6 and include public health

[47] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007,* New York: Cambridge University Press.

[48] California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July

[49] California Climate Action Team (CAT), 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. March.

impacts, water resources impacts, agricultural impacts, coastal sea level impacts, forest and biological resource impacts, and energy impacts.

Table 6 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Fewer extremely cold nights Poor air quality made worse Higher temperatures increase ground-level ozone levels
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: California Energy Commission, 2006, Our Changing Climate: Assessing the Risks to California, 2006 Biennial Report, California Climate Change Center, CEC-500-2006-077; California Energy Commission, 2008, The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California, CEC-500-2008-0077. California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July.

Specific climate change impacts that could affect the project include:

- ***Water Resources Impacts.*** By late-century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the State can be expected to be drier from the warming effects alone as the spring snowpack will melt sooner, and the moisture contained in soils will evaporate during long dry summer months.[50]

- ***Wildfire Risks***. Earlier snowmelt, higher temperatures and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will

[50] California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July.

continue to be the biggest factor in ignition risk. The number of large fires statewide are estimated to increase from 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.[51]

- ***Health Impacts.*** Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and heat waves occurring simultaneously in several regions throughout the State. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California.[52]

- ***Increase Energy Demand.*** Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the State will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process from higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand.[53]

2.1 REGULATORY FRAMEWORK

2.1.1 Federal Laws

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[54]

The EPA's endangerment finding covers emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world The first three are applicable to the proposed Project

[51] California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July.
[52] California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July.
[53] California Climate Change Center. 2012. Our Changing Climate 2012, Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. July.
[54] United States Environmental Protection Agency (EPA), 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment, Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity, December, http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252.

because they constitute the majority of GHG emissions from the onsite land uses, and per BAAQMD guidance are the GHG emissions that should be evaluated as part of a GHG emissions inventory.

2.1.1.1 US MANDATORY REPORTING RULE FOR GREENHOUSE GASES (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MT) or more of CO_2 per year are required to submit an annual report.

2.1.1.2 UPDATE TO CORPORATE AVERAGE FUEL ECONOMY STANDARDS (2010/2012)

The current Corporate Average Fuel Economy (CAFE) standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon [mpg] by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be considered to be in compliance with State requirements. The federal government issued new standards in 2012 for model years 2017–2025, which will require a fleet average of 54.5 mpg in 2025.

2.1.1.3 EPA REGULATION OF STATIONARY SOURCES UNDER THE CLEAN AIR ACT (ONGOING)

Pursuant to its authority under the Clean Air Act (CAA), the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to the President's 2013 Climate Action Plan, the EPA will be directed to also develop regulations for existing stationary sources.

2.1.2 State Laws

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-3-05, Executive Order B-30-15, Assembly Bill 32 (AB 32), and Senate Bill 375 (SB 375).

2.1.2.1 EXECUTIVE ORDER S-3-05

Executive Order S-3-05, signed June 1, 2005, set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

2.1.2.2 EXECUTIVE ORDER B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the State to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the State and requires state agencies to implement measures to meet the interim 2030 goal of Executive Order B-30-15 as well as the long-term goal for 2050 in Executive Order S-03-5. It also requires the Natural Resources Agency to conduct triennial updates the

California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in State planning and investment decisions.

2.1.2.3 ASSEMBLY BILL 32, THE GLOBAL WARMING SOLUTIONS ACT

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Assembly Bill 32 (AB 32), the Global Warming Solutions Act. AB 32 was passed by the California State legislature on August 31, 2006, to place the State on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-3-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MT of CO_2e per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be approximately 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the State. The 2020 target requires a total emissions reduction of 169 $MMTCO_2e$, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e., 28.5 percent of 596 $MMTCO_2e$). [55,56]

Since release of the 2008 Scoping Plan, CARB has updated the Statewide GHG emissions inventory to reflect GHG emissions in light of the economic downturn and of measures not previously considered in the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 545 MMT CO_2e by 2020. The revised BAU 2020 forecast shows that the State would have to reduce GHG emissions by 21.7 percent from BAU. The new inventory also identifies that if the updated 2020 forecast includes the reductions assumed from implementation of Pavley (26 MMT CO_2e of reductions) and the 33 percent RPS (12 MMT CO_2e of reductions) the forecast would be 507 MMT CO_2e in 2020, and then an estimated 80 MMT CO_2e of additional reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, or 15.7 percent of the projected emissions compared to BAU in year 2020 (i.e. 15.7 percent of 507 MMT CO_2e).[57]

Key elements of CARB's GHG reduction plan that may be applicable to the proposed Project include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards (adopted and cycle updates in progress);

[55] California Air Resources Board (CARB), 2008. *Climate Change Scoping Plan: A Framework for Change.*

[56] CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

[57] California Air Resources Board (CARB), 2012. *Status of Scoping Plan Recommended Measures.* http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.

- Achieving a mix of 33 percent for energy generation from renewable sources (anticipated by 2020);

- A California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources (adopted 2011);

- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted);

- Adopting and implementing measures pursuant to State laws and policies, including California's clean car standards (amendments to the Pavley Standards adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (LCFS) (adopted 2009);

- Creating target fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation (in progress).

Table 7 shows the anticipated reductions from regulations and programs outlined in the 2008 Scoping Plan. Although local government operations were not accounted for in achieving the 2020 emissions reduction, CARB estimates that land use changes implemented by local governments that integrate jobs, housing, and services result in a reduction of 5 $MMTCO_2e$, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments play in the successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of 2014 levels by 2020 to ensure that municipal and community-wide emissions match the State's reduction target.[58] Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer VMT.[59]

[58] The Scoping Plan references a goal for local governments to reduce community GHG emissions by 15 percent from current (interpreted as 2008) levels by 2020, but it does not rely on local GHG reduction targets established by local governments to meet the State's GHG reduction target of AB 32.

[59] California Air Resources Board (CARB), 2008. *Climate Change Scoping Plan: A Framework for Change.*

Table 7 Scoping Plan GHG Reduction Measures and Reductions toward 2020 Target

Recommended Reduction Measures	Reductions Counted toward 2020 Target of 169 MMT CO2e	Percentage of Statewide 2020 Target
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets[a]	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	146.7	87%
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	27.3	16%
Total Reductions Counted toward 2020 Target	174	100%
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations[b]	To Be Determined	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	42.8	NA

Source: California Air Resources Board, 2008, Climate Change Scoping Plan: A Framework for Change.

Notes: The percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 $MMTCO_2e$ and the Scoping Plan identifies 174 $MTCO_2e$ of emissions reductions strategies.

$MMTCO_2e$: million metric tons of CO_2e

[a] Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target.

[b] According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of CO_2e (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target.

First Update to the Scoping Plan

CARB recently completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The final update to the Scoping Plan was released in May, and CARB adopted it at the May 22, 2014, board hearing. The update to the Scoping Plan defines CARB's climate change priorities for the next five years and lays the groundwork to reach post-2020 goals in Executive Orders S-3-05 and B-16-2012. The update includes the latest scientific findings related to climate change and its impacts, including short-lived climate pollutants. The GHG target identified in the 2008 Scoping Plan is based on IPCC's GWPs identified in the Second and Third

Assessment Reports (see Table 5). IPCC's Fourth and Fifth Assessment Reports identified more recent GWP values based on the latest available science. CARB recalculated the 1990 GHG emission levels with the updated GWPs in the Fourth Assessment Report, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher, at 431 $MMTCO_2$.[60]

In the First Update to the Scoping Plan, CARB projects that statewide BAU emissions in 2020 would be approximately 509 million $MTCO_2e$.[61] Therefore, to achieve the AB 32 target of 431 million $MTCO_2e$ (i.e. 1990 emissions levels) by 2020, the State would need to reduce emissions by 78 million $MTCO_2e$ compared to BAU conditions, a reduction of 15.3 percent from BAU in 2020.[62, 63]

The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As identified in the update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update to the Scoping Plan also addresses the State's longer-term GHG goals within a post-2020 element. The post-2020 element provides a high level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the State to adopt a mid-term target. According to the update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with, or exceeds, the trajectory created by statewide goals. [64]

According to the update to the Scoping Plan, reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit.[65]

Second Update to the Scoping Plan

The new Executive Order B-30-15 requires CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. During the October 1, 2015, CARB workshop, CARB announced that the next update to the Scoping Plan would be adopted by late 2016 and would address the new 2030 interim target to achieve a 40 percent reduction below 1990 levels by 2030.

2.1.2.4 SENATE BILL 375

SB 375, the Sustainable Communities and Climate Protection Act, was adopted in 2005 to connect the Scoping Plan's GHG emissions reductions targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles

[60] California Air Resources Board (CARB), 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006, http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

[61] The BAU forecast includes GHG reductions from Pavley and the 33% Renewable Portfolio Standard (RPS).

[62] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

[63] If the GHG emissions reductions from Pavley I and the Renewable Electricity Standard are accounted for as part of the BAU scenario (30 million $MTCO_2e$ total), then the State would need to reduce emissions by 108 million $MTCO_2e$, which is a 20-percent reduction from BAU.

[64] California Air Resources Board (CARB), 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006, http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

[65] California Air Resources Board (CARB), 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006, http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

(excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 regions in California managed by a metropolitan planning organization (MPO). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction in GHG emissions from 2005 by 2020, and 15 percent per capita reduction from 2005 levels by 2035.[66] SB 375 requires CARB to periodically update the targets, no later than every 8 years. CARB plans to propose updated targets for consideration in 2016, with the intent to make them effective in 2018. Sustainable communities strategies (SCSs) adopted in 2018 would be subject to the updated targets.[67]

Plan Bay Area, Strategy for a Sustainable Region

Plan Bay Area is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). The Plan Bay Area was adopted jointly by ABAG and MTC July 18, 2013.[68] The SCS lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. According to Plan Bay Area, the Plan meets a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.

As part of the implementing framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas in existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2040 is allocated in PDAs. PDAs are expected to accommodate 80 percent (or over 525,570 units) of new housing and 66 percent (or 744,230) of new jobs in the region.[69] Plan Bay Area includes the following PDA in Cupertino, which the Project is located within:

- **Santa Clara Valley Transportation Authority: City Cores, Corridors, and Station Areas PDA –** This PDA includes transit-rich areas in the cities of Campbell, Cupertino, Gilroy, Los Altos, Los Gatos, Milpitas, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, and in unincorporated Santa Clara County. Within these cities, a mix of housing and job growth is planned. These areas have urban characteristics, including residential and commercial land uses and/or downtown center attractions combined with transit connectivity. This PDA supports Plan Bay Area's vision for pedestrian- and transit-oriented development. It would encourage residential, commercial, and recreational development in key areas that meets the smart growth practice of increasing the live-work-play balance within walking distance or within walking distance of a transit route that connects these land use types together. In Cupertino, this Mixed-Use Special Area PDA is along Stevens Creek Boulevard

[66] California Air Resources Board (CARB), 2010. Staff Report, Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375, August.
[67] California Air Resources Board, 2015, September 15. ARB Process and Schedule for SB 375 Target Update. http://www.arb.ca.gov/cc/sb375/sb375.htm.
[68] It should be noted that the Bay Area Citizens filed a lawsuit on MTC's and ABAG's adoption of Plan Bay Area.
[69] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2013. Plan Bay Area: Strategy for a Sustainable Region, July 18.

between State Route 85 and the City's eastern limits and along De Anza Boulevard between Stevens Creek Boulevard and the City of Sunnyvale.[70,71]

2.1.2.5 ASSEMBLY BILL 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles.[72] In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.[73]

2.1.2.6 EXECUTIVE ORDER S-1-07

On January 18, 2007, the State set a new Low Carbon Fuel Standard (LCFS) for transportation fuels sold in California. Executive Order S-1-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The LCFS applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle," using the most economically feasible methods.

2.1.2.7 EXECUTIVE ORDER B-16-2012

On March 23, 2012, the State identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate zero-emissions vehicles in major metropolitan areas, including infrastructure to support them (e.g. electric vehicle charging stations). The executive order also directs the number of zero-emission vehicles in California's State vehicle fleet to increase

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[70] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2013. Priority Development Area Showcase. http://gis.abag.ca.gov/website/PDAShowcase/ Accessed April 2016..

[71] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2012. *Visions for Priority Development Areas Jobs-Housing Connection Strategy,* May. http://onebayarea.org/file10010.html.

[72] See also the discussion on the update to the CAFE standards under federal laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

[73] See also the discussion on the update to the CAFE standards under Federal Laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

2.1.2.8 SENATE BILLS 1078 AND 107 AND EXECUTIVE ORDER S-14-08

A major component of California's Renewable Energy Program is the renewable portfolio standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the State's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SBX1-2). The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

2.1.2.9 SENATE BILL 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

2.1.2.10 CALIFORNIA BUILDING STANDARDS CODE

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2013 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which went into effect on July 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

Most recently, the CEC adopted the 2016 Building and Energy Efficiency Standards. The 2016 Standards will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These standards will go into effect on January 1, 2017. Under the 2016 Standards, residential buildings are 28 percent more energy efficient than the 2013 Standards while non-residential buildings are 5 percent more energy efficient than the 2013 Standards.[74]

The 2016 standards will not get us to zero net energy (ZNE). However, they do get us very close to the State's goal and make important steps toward changing residential building practices in California. The 2019

[74] California Energy Commission (CEC). 2015, June 10. 2016 Building Energy Efficiency Standards, Adoption Hearing Presentation. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents.

standards will take the final step to achieve ZNE for newly constructed residential buildings throughout California. [75]

2.1.2.11 CALIFORNIA GREEN BUILDING STANDARDS CODE – CALGREEN

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code (Title 24, CCR). CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[76] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, was updated in 2013, and became effective January 1, 2014.

2.1.2.12 2006 APPLIANCE ENERGY EFFICIENCY REGULATIONS

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business-as-usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

2.1.2.13 SOLID WASTE REGULATIONS

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 et seq.) set a requirement for cities and counties throughout the State to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

The California Solid Waste Reuse and Recycling Access Act (AB 1327, California Public Resources Code Sections 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

[75] California Energy Commission (CEC). 2015. 2016 Building Energy and Efficiency Standards Frequently Asked Questions.
http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

[76] The green building standards became mandatory in the 2010 edition of the code.

Section 5.408 of the 2013 California Green Building Standards Code (Title 24, California Code of Regulations, Part 11) also requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

2.1.2.14 WATER EFFICIENCY REGULATIONS

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

2.1.3 Local Regulations

2.1.3.1 CITY OF CUPERTINO CLIMATE ACTION PLAN

The City of Cupertino published the public draft Climate Action Plan (CAP) in December, 2014 to achieve the GHG reduction target of AB 32 for target year 2020. The CAP serves to support California's statewide climate change efforts through identification of actions that can be taken locally, by residents, businesses, and the City itself, to ensure the State's ambitious reduction goals can be achieved. The strategies outlined in the CAP seek to not only reduce GHG emissions, but also provide energy, water, fuel, and cost savings for the City.[77] The goals established by the City's CAP are the following:

- Goal 1 – Reduce Energy Use: Increase energy efficiency in existing homes and buildings and increase use of renewable energy community-wide.
- Goal 2 – Encourage Alternative Transportation: Support transit, carpooling, walking, and bicycling as viable transportation modes to decrease the number of single-occupancy vehicle trips within the community.
- Goal 3 – Conserve Water: Promote the efficient use and conservation of water in buildings and landscapes.
- Goal 4 – Reduce Solid Waste: Strengthen waste reduction efforts through recycling and organics collection and reduced consumption of materials that otherwise end up in landfills.

[77] City of Cupertino, 2014. Climate Action Plan Public Review Draft. December.

- Goal 5 – Expand Green Infrastructure: Enhance the City's existing urban forest on public and private lands.

2.2 ENVIRONMENTAL SETTING

2.2.1 Existing Emissions

The 5.12-acre Project site is currently developed with commercial uses, including a grocery store, shopping center, medical offices, and restaurants, which generate GHG emissions from vehicle trips, energy use (indirectly from purchased electricity use and directly through fuel consumed for building heating), area sources (e.g., equipment used on-site, consumer products, coatings), water/wastewater generation, and waste disposal.

2.3 METHODOLOGY

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines.[78]

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA.

Following the court's order, the BAAQMD released revised CEOA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and set aside the significance thresholds. The BAAQMD recognizes that lead agencies may rely on the previously recommended thresholds of significance in its CEQA Guidelines, adopted in 1999. In ordering BAAQMD to set aside the thresholds, the court did not address the merits of the science or evidence supporting the thresholds. The City finds, therefore, that despite the Superior Court's ruling, and in light of the subsequent case history discussed below, the science and reasoning in the BAAQMD 2011 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. For that reason, substantial evidence supports continued use of the BAAQMD 2011 CEQA Air Quality Guidelines.

[78] In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts.

2.3.1 Greenhouse Gas Emissions

BAAQMD has a tiered approach for assessing GHG emissions impacts of a project. If a project is within the jurisdiction of an agency that has a "qualified" GHG reduction strategy, the project can assess consistency of its GHG emissions impacts with the reduction strategy.

BAAQMD has adopted screening criteria and significance criteria for development projects that would be applicable for the proposed Project. If a project exceeds the Guidelines' GHG screening-level sizes, the project would be required to conduct a full GHG analysis using the following BAAQMD significance criteria:

- 1,100 MT of CO_2e per year; or
- 4.6 MT of CO_2e per service population (SP) for year 2020

AB 32 requires the statewide GHG emission be reduced to 1990 levels by 2020. On a per-capita basis, that means reducing the annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020.[79] Hence, BAAQMD's per capita significance threshold is calculated based on the State's land use sector emissions inventory prepared by CARB and the demographic forecasts for the 2008 Scoping Plan. The land use sector GHG emissions for 1990 were estimated by BAAQMD, as identified in Appendix D of the BAAQMD CEQA Guidelines, to be 295.53 $MMTCO_2e$and the 2020 California service population (SP) to be 64.3 million. Therefore, the significance threshold that would ensure consistency with the GHG reduction goals of AB 32 is estimated at 4.6 $MTCO_2e/SP$.[80] Land use development projects include residential, commercial, industrial, and public land use facilities. Direct sources of emissions may include on-site combustion of energy, such as natural gas used for heating and cooking, emissions from industrial processes (not applicable for most land use development projects), and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production, water conveyance due to a project's energy use and water consumption, and non-biogenic emissions from waste disposal. Biogenic CO_2 emissions are not included in the quantification of a project's GHG emissions, because biogenic CO_2 is derived from living biomass (e.g. organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. Although GHG emissions from waste generation are included in the GHG inventory for the proposed Project, the efficiency threshold of 4.6 $MTCO_2e$ per service population for 2020 identified above does not include the waste sector, and it is therefore not considered in the evaluation.

BAAQMD does not have thresholds of significance for construction-related GHG emissions, but requires quantification and disclosure of construction-related GHG emissions..[81]

[79] California Air Resources Board (CARB), 2008. *Climate Change Scoping Plan: A Framework for Change.*
[80] Bay Area Air Quality Management District, 2011 (revised), California Environmental Quality Act Air Quality Guidelines.
[81] Bay Area Air Quality Management District, 2011 (revised), California Environmental Quality Act Air Quality Guidelines.

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CalEEMod Inputs (Construction Run)

Name:	Marina Plaza Project
Project Location:	10145 De Anza Boulevard
County/Air Basin:	Santa Clara County
Climate Zone:	4
Land Use Setting:	Urban
Operational Year:	2019
Utility Company:	Pacific Gas and Electric

	SQFT	Acreage
Total Site Area:	223,044	5.12
Total Area Disturbed:		5.12

Components	SQFT	Acreage
New Apartment Buildings	271,371	1.51
Hotel	92,432	0.59
High Turnover Restaurant	9,000	0.21
Fast Food Restaurant	2,800	0.06
Retail	10,800	0.25
Total New Building	386,403	
Landscaping	20,000	0.46
Subterranean Parking	251,353	
Parking Lot	11,479	0.26
Driveways	28,209	0.65
Hardscape	49,379	1.13
		5.12

CalEEMod Land Use Inputs

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Square Feet
New Apartment Buildings	Residential	Apartment Mid Rise	188	DU	1.97	271,371
Hotel	Recreational	Hotel	122	Rooms	0.59	92,432
High Turnover Restaurant	Recreational	Quality Restaurant	9.00	1000sqft	0.21	9,000
Fast Food Restaurant	Recreational	Fast Food Restaurant w/o Drive-Through	2.80	1000sqft	0.06	2,800
Retail	Retail	Strip Mall	10.80	1000sqft	0.25	10,800
Subterranean Parking	Parking	Enclosed Parking Lot with Elevator	644	Space	0.00	251,353
Parking Lot	Parking	Parking Lot	36	Space	0.26	11,479
Driveways	Parking	Other Asphalt surface	28.209	1000sqft	0.65	28,209
Hardscape	Parking	Other Non-asphalt surface	49.379	1000sqft	1.13	49,379
					5.12	

Component	Amount to be Demolished (SQFT)*	Amount to be Demolished (Tons)	Haul Truck Capacity (tons)*	Haul Distance (miles)**	Total Trip Ends	Trips Ends/Day Provided by Applicant	Duration (days)
Asphalt	160,644	1,205	20	15	120	16	
Buildings	49,139	2260.4	20	15	226	16	
Trees	N/A	66	20	15	6	16	
Total		**3,531**			**352**		**22**

**Provided by the Applicant.*

***Distance to Zanker Recycling, provided by the Applicant.*

Soil Haul

Total Export Volume (CY)*	Haul Truck Capacity (CY)*	Haul Distance (miles)**	Total Trip Ends	Total Days	Trip Ends/Day	Trips Ends/Day Provided by Applicant	Duration (days)
105,000	16	20	**13,126**	165	80	80	**165**

**Provided by the Applicant.*
***CalEEMod Default*

Architectural Coating

BAAQMD Regulation 8 Rule 3

Interior Paint VOC content: 150
Exterior Paint VOC content: 250

Non-Residential Architectural Coating

Percentage of Buildings' Interior Painted: 100%
Percentage of Buildings' Exterior Painted: 100%

Residential Structures	Land Use Square Feet	CalEEMod Paintable Surface Area Multiplier	Total Paintable Surface Area[2]	Paintable Interior Area[1]	Paintable Exterior Area[1]
New Apartment Buildings	271,371	2.7	732,702	**549,526**	**183,175**

Non-Residential Structures	Land Use Square Feet	CalEEMod Application Factor	Total Paintable Surface Area[2]	Paintable Interior Area[1]	Paintable Exterior Area[1]
Hotel	92,432	2	184,864	138,648	46,216
High Turnover Restaurant	9,000	2	18,000	13,500	4,500
Fast Food Restaurant	2,800	2	5,600	4,200	1,400
Retail	10,800	2	21,600	16,200	5,400
Subterranean Parking	251,353	0.06	15,081	0	15,081
Parking Lot	11,479	0.06	689	0	689
Driveways	28,209	0.06	1,693	0	1,693
Hardscape	49,379	0.06	2,963	0	2,963
				172,548	**77,941**

Notes:

1 *CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively. Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted.

2 ** Applied CalEEMod Methodology in calculating total

Construction - Unmitigated Run

BAAQMD BMPs

Replace Ground Cover — PM10: 5 % Reduction; PM25: 5 % Reduction

Water Exposed Area — Frequency: 2 per day; PM10: 55 % Reduction; PM25: 55 % Reduction

Unpaved Roads — Vehicle Speed: 15 mph

Clean Paved Road 9 % PM Reduction

CalEEMod Construction Phase Inputs*

5-Day Work Week/8 hours per day

Phase Name	Phase Type	Start Date	End Date	CalEEMod Total Days	Total Days
Demolition	Demolition	11/1/2016	1/15/2017	54	75
Demolition Hauling	Demolition	11/1/2016	11/30/2016	22	29
Site Preparation	Site Preparation	1/15/2017	2/15/2017	23	31
Grading	Grading	1/15/2017	9/15/2017	175	243
Grading Hauling	Grading	1/15/2017	9/1/2017	165	229
Building Construction A	Building Construction	4/15/2017	9/15/2017	110	153
Building Construction B	Building Construction	9/16/2017	9/14/2019	520	728
Building Construction C	Building Construction	9/15/2019	10/15/2019	22	30
Paving	Paving	9/15/2019	12/31/2019	77	107
Painting	Architectural Coating	9/15/2019	12/31/2019	77	107

Year	Start Date	End Date	Days
2016	11/1/2016	12/31/2016	44
2017	1/1/2017	12/31/2017	260
2018	1/1/2018	12/31/2018	261
2019	1/1/2019	12/31/2019	261

*Based on construction schedule provided by the Applicant.

Modeling conservatively assumes architectural coatings and paving would overlap with building construction in year 2018.

CalEEMod Construction Off-Road Equipment Inputs*

Equipment Type	CalEEMod Equipment Type	Unit Amount	Hours /Day	HP	LF
Demolition					
Concrete/Industrial Saws	Concrete/Industrial Saws	1	8	81	0.73
Excavators	Excavators	4	8	162	0.38
Rubber Tired Dozers	Rubber Tired Dozers	2	8	255	0.4
Worker Trips		40			
Vendors Trips		0			
Site Preparation					
Rubber Tired Dozers		2	8	255	0.4
Tractor/Loader/Backhoe		4	8	97	0.37
Water Truck**		2	n/a		
Worker Trips		44			
Vendors Trips		4			
Mass Grading					
Excavators	Excavators	2	8	162	0.38
Graders	Graders	1	8	174	0.41
Rubber Tired Dozers	Rubber Tired Dozers	1	8	255	0.4
Scrapers	Scrapers	2	8	361	0.48
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	3	8	97	0.37
Water Truck**		2			
Worker Trips		50			
Vendors Trips		4			
Building Construction					
Air Compressors	Air Compressors	0	8	78	0.29
Cranes	Cranes	1	1	226	0.29
Forklifts	Forklifts	4	8	89	0.2
Generator Sets	Generator Sets	2	8	84	0.74
Tractors/Loaders/Backhoes - A *	Tractors/Loaders/Backhoes	0	7	97	0.37
Tractors/Loaders/Backhoes - B	Tractors/Loaders/Backhoes	3	7	97	0.37
Tractors/Loaders/Backhoes - C *	Tractors/Loaders/Backhoes	1	7	97	0.37
Welders	Welders	1	8	46	0.45
Worker Trips		180			
Vendors Trips		70			
* Number of equipment adjusted due to overlap with grading and paving sub-phases.					
Paving					
Pavers	Pavers	1	8	89	0.42
Paving Equipment	Paving Equipment	1	8	82	0.36
Rollers	Rollers	2	8	84	0.38
Tractor/Loader/Backhoe		2	8	97	0.37
Worker Trips		40			
Vendor Trips		0			
Painting					
Air Compressors	Air Compressors	2	8	78	0.48
Worker Trips		44			
Vendor Trips		0			

*CalEEMod default approved by Applicant.

**Assume 4 vendor trips for water trucks.

Pavement Volume to Weight Conversion

Component	Total SF of Area[1]	Assumed Thickness (foot)[2]	Debris Volume (cu. ft)	Weight of Crushed Asphalt (lbs/cf)[3]	AC Mass (lbs)	AC Mass (tons)
Asphalt	160,644	0.333	53,548	45	2,409,660	1204.83

[1] Based on construction information provided by the Applicant.

[2] Pavements and Surface Materials. Nonpoint Education for Municipal Officials, Technical Paper Number 8. University of Conneticut Cooperative Extension System, 1999.

[3] http://www.reade.com/Particle_Briefings/spec_gra2.html

Demo Haul Trip Calculation

*Conversion factors**

0.046	ton/SF
1.2641662	tons/cy
20	tons
15.820705	CY
0.7910352	CY/ton

Building Demoltion Haul Trips (BSF and Haul Truck (CY) given)

BSF Demo	Tons/SF	Tons	Haul Truck (CY)	Haul Truck (Ton)	Round Trips	Total Trip Ends
49,139	0.046	2260.394	16	20.00	113	226

*CalEEMod User's Guide Version 2011.1, Appendix A

CalEEMod Inputs (Operational Run - Existing Land Use 2016)

Name:	Marina Plaza Project
Project Location:	10145 De Anza Boulevard
County/Air Basin:	Santa Clara County
Climate Zone:	4
Land Use Setting:	Urban
Operational Year:	2016 and 2020
Utility Company:	Pacific Gas and Electric

	SQFT	Acreage
Total Site Area:	223,044	5.12
Total Area Disturbed:		5.12

Components	SQFT	Acreage
Shopping Center	1,240	0.03
Supermarket	34,000	0.78
Medical/Dental Office	1,950	0.04
High-Turnover Restaurant	11,500	0.26
Surface Parking Lot	160,644	3.69
Landscaping	13,693	0.31
		5.12

Residents	0
Employees	110
Service Population	110

CalEEMod Land Use Inputs

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Square Feet
Shopping Center	Retail	Strip Mall	1.24	1000sqft	0.03	1,240
High-Turnover Restaurant	Recreational	Quality Restaurant	11.5	1000sqft	0.26	11,500
Medical/Dental Office	Retail	Medical Office Building	1.95	1000sqft	0.04	1,950
Supermarket	Retail	Grocery	34.0	1000sqft	0.78	34,000
Surface Parking Lot and Paved Surfaces	Parking	Parking Lot	3.69	acres	3.69	160,644
Landscaping	Parking	Other Non-Asphalt Surfaces	0.31	acres	0.31	13,693
					5.12	

Land Use	Trip Generation (ADT)*	Trip Generation with reductions (ADT)	Weekday Trip Rate (trips/size metric)*	Saturday Trip Rate (trips/size metric)**	Sunday Trip Rate (trips/size metric)**
Shopping Center	79	72	57.97	67.18	34.26
Supermarket	3,476	3,163	93.02	161.57	151.43
Medical-Dental Office	70	64	32.66	8.10	1.40
High-Turnover Restaurant	1,467	1335	116.07	144.56	120.35
	5,092	**4,633**			

Trip Reduction *	9.0%

**Prepared by Fehr & Peers, 2016.*
***ITE Trip Generation Manual 9th Edition.*

	ITE Trip Rates **					
Land Use	ITE Weekday Trip Rate	ITE Saturday Trip Rate	ITE Sunday Trip Rate	Calculated Weekday Trip Rate	Adjusted Saturday Trip Rate	Adjusted Sunday Trip Rate
Shopping Center	42.70	49.49	25.24	57.97	*67.18*	*34.26*
Supermarket	102.24	177.59	166.44	93.02	*161.57*	*151.43*
Medical/Dental Office	36.13	8.96	1.55	32.66	*8.10*	*1.40*
High-Turnover Restararunt	127.15	158.37	131.84	116.07	*144.56*	*120.35*

Solid Waste

Employees	
Strip Mall	3
Supermarket	76
Medical-Dental Office	7
High-Turn Restaurant	26
Total Employees	**110**

NonResidential Solid Waste Generation Rate*:	4.3	pounds/person/day
Strip Mall	2	
Supermarket	59	
Medical-Dental Office	5	
High-Turn Restaurant	20	
Total Solid Waste	**87**	**TPY**

**Based on City of Cupertino General Plan Amendment, Housing Element Update, and Associated Rezoning Draft EIR, 2012.*

Water Use

Septic Tank	0%
Aerobic	100%
Facultative Lagoons	0%

	Restaurant-- Quality		Retail-- Strip Mall		Retail- Supermarket	
	GPY	**Percentage**	**GPY**	**Percentage**	**GPY**	**Percentage**
CalEEMod Default Indoor Water Use	3,490,637.69	94%	91,849.93	62%	4,191,119.31	97%
CalEEMod Default Outdoor Water Use	222,806.66	6%	56,295.12	38%	129,622.25	3%
CalEEMod Default Total Water Use	3,713,444.35	100%	148,145.05	100%	4,320,741.56	100%
Total Water Use*:	1.1	gpd/SF	0.11	gpd/SF	0.11	gpd/SF
Total Water Use:	4,617,250.00	GPY	49,786.00	GPY	1,365,100.00	GPY
Vastewater Generation (Indoor Water Use):	**4,340,215.00**	GPY	**30,867.32**	GPY	**1,324,147.00**	GPY
Outdoor Water Use:	**277,035.00**	GPY	**18,918.68**	GPY	**40,953.00**	GPY

	Commercial-- Medical/Dental Office	
	GPY	**Percentage**
CalEEMod Default Indoor Water Use	244,687.05	84%
CalEEMod Default Outdoor Water Use	46,607.06	16%
CalEEMod Default Total Water Use	291,294.11	100%
Total Water Use*:	0.15	gpd/SF
Total Water Use:	106,762.50	GPY
Vastewater Generation (Indoor Water Use):	**89,680.50**	GPY
Outdoor Water Use:	**17,082.00**	GPY

**Water generation rate from Water Supply Evaluation for General Plan Amendment (2012).*

Historical Data Enabled

The Existing building was constructed prior to the 2005 Building Energy Efficiency Standards. Modeling assumes 2005 Building and Energy Efficiency Standards; and therefore, modeling is conservative.

CalEEMod Inputs (Operational Run - Proposed Project 2020)

Name:	Marina Plaza Project
Project Location:	10145 De Anza Boulevard
County/Air Basin:	Santa Clara County
Climate Zone:	4
Land Use Setting:	Urban
Operational Year:	2020
Utility Company:	Pacific Gas and Electric

Apartments	188	DU
Residents	542	
Employees	53	
Service Population	595	
Temporary Residents (Hotel)	98	Assumes 80% occupancy and 1 person per hotel room.
Service Population with Temporary Residents	693	

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Square Feet	Acreage
New Apartment Buildings	Residential	Apartment Mid Rise	188	DU	278,213	1.97
Hotel	Recreational	Hotel	122	Rooms	92,432	0.59
High Turnover Restaurant	Recreational	Quality Restaurant	9.00	1000sqft	9,000	0.21
Fast Food Restaurant	Recreational	Fast Food	2.80	1000sqft	2,800	0.06
Retail	Retail	Strip Mall	10.80	1000sqft	10,800	0.25
Subterranean Parking	Parking	Enclosed Parking Lot with Elevator	644	Space	251,353	0.00
Parking Lot	Parking	Parking Lot	36	Space	11,479	0.26
Driveways	Parking	Other Asphalt surface	28.209	1000sqft	28,209	0.65
Hardscape	Parking	Other Non-asphalt surface	49.379	1000sqft	49,379	1.13
						5.12

Trip Generation*

Project Trips:	5,849	Trips
Trip Reduction Percentage:	11%	
Trip Reduction:	644	Trips
New Project Trip with Trip Reduction:	5,205	Trips
Existing Trips	4,633	Trips
Net New Trips:	572	Trips

Land Use	Trip Generation* (ADT)	Adjusted Trip Gen* (ADT)	Weekday Trip Rate* (trips/ksf)	Saturday Trip Rate** (trips/ksf)	Sunday Trip Rate** (trips/ksf)
New Apartment Buildings	1,263	1123.94	5.98	5.74	5.27
Hotel	997	887.23	7.27	7.29	5.30
High Turnover Restaurant	1,144	1018.04	113.12	140.89	117.29
Fast Food Restaurant	1983	1764.66	630.24	612.63	440.11
Retail	462	411.13	38.07	44.55	22.50
	5,849	**5205.00**			

	ITE Trip Rates **					
Land Use	**ITE Weekday Trip Rate****	**ITE Saturday Trip Rate****	**ITE Sunday Trip Rate****	**Calculated Weekday Trip Rate**	**Adjusted Saturday Trip Rate**	**Adjusted Sunday Trip Rate**
New Apartment Buildings	6.65	6.39	5.86	5.98	*5.74*	*5.27*
Hotel	8.17	8.19	5.95	7.27	*7.29*	*5.30*
High Turn Restaurant	127.15	158.37	131.84	113.12	*140.89*	*117.29*
Fast Food	716.00	696.00	500.00	630.24	*612.63*	*440.11*
Retail	42.70	49.97	25.24	38.07	*44.55*	*22.50*

**Fehr & Peers, 2016.*

***ITE Trip Generation Manual 9th Edition.*

Solid Waste

Residential Solid Waste Generation Rate*:	2.88	pounds/person/day	NonResidential Solid Waste Generation Rate*:	4.3	pounds/person/day
Total Solid Waste:	285	TPY	Total Solid Waste:	42	TPY
			Hotel	9	
			fast Food	4	
			Quality Restaruant	16	
			Strip Mall	13	

**Based on City of Cupertino General Plan Amendment, Housing Element Update, and Associated Rezoning Draft EIR, 2012.*

Water Use

Septic Tank	0%
Aerobic	100%
Facultative Lagoons	0%

	Residential		Restaurant-- Quality		Retail	
	GPY	**Percentage**	**GPY**	**Percentage**	**GPY**	**Percentage**
CalEEMod Default Indoor Water Use	12,248,956.82	61%	2,731,803.41	94%	799,983.23	62%
CalEEMod Default Outdoor Water Use	7,722,168.43	39%	174,370.43	6%	490,312.30	38%
CalEEMod Default Total Water Use	19,971,125.25	100%	2,906,173.84	100%	1,290,295.53	100%

Total Water Use*:	137.2	gpd/unit	1.1	gpd/SF	0.11	gpd/SF
Total Water Use:	9,414,664.00	GPY	3,613,500.00	GPY	433,620.00	GPY
Wastewater Generation (Indoor Water Use):	**5,774,327.25**	GPY	**3,396,690.00**	GPY	**268,844.40**	GPY
Outdoor Water Use:	**3,640,336.75**	GPY	**216,810.00**	GPY	**164,775.60**	GPY

	Hotel		Restaurant- Fast Food	
	GPY	**Percentage**	**GPY**	**Percentage**
CalEEMod Default Indoor Water Use	3,094,745.94	90%	849,894.39	94%
CalEEMod Default Outdoor Water Use	343,860.66	10%	54,248.58	6%
CalEEMod Default Total Water Use	3,438,606.60	100%	904,142.97	100%

Total Water Use*:	0.50	gpd/SF	1.1	gpd/SF
Total Water Use:	16,868,840.00	GPY	1,124,200.00	GPY
Wastewater Generation (Indoor Water Use):	**15,181,956.00**	GPY	**1,056,748.00**	GPY
Outdoor Water Use:	**1,686,884.00**	GPY	**67,452.00**	GPY

**Water generation rate from Water Supply Evaluation for General Plan Amendment (2012).*

Area - Hearths

0%	Woodstoves
0%	Wood Fireplace
100%	Gas Fireplace

Water Mitigation

Install Low Flow Bathroom Faucet	32	% Reduction in flow
Install Low Flow Kitchen Faucet	18	% Reduction in flow
Install Low Flow Toilet	20	% Reduction in flow
Install Low Flow Shower	20	% Reduction in flow
Use Water Efficiency Irrigation System	6.1	% Reduction in flow

Energy Mitigation*

2013 Building and Energy Efficiency Standards

Buildings constructed after January 1, 2014 are required to meet the 2013 Building and Energy Efficiency Standards. The 2013 Standards are 30% more energy efficient for non-residential buildings and 25% more energy efficient for residential buildings than the 2008 Building and Energy Efficiency Standards.

Non-Residential Exceed Title 24	30%	Improvement

2016 Building and Energy Efficiency Standards

Buildings constructed after January 1, 2017 are required to meet the 2016 Building and Energy Efficiency Standards. The 2016 Standards are 33.5% more energy efficient for non-residential buildings and 46% more energy efficient for residential buildings than the 2008 Building and Energy Efficiency Standards.

Non-Residential Exceed Title 24	5%	Improvement over 2013[1]
Non-Residential Exceed Title 24	33.5%	Improvement over 2008

Sources:

[1] California Energy Commission. 2015a. 2016 Building Energy Efficiency Standards, Adoption Hearing Presentation. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/ June 10.

**Multi-family of 4 stories and higher are treated as non-residential for the Building and Energy Efficiency Standards.*

Changes to the CalEEMod Defaults - Fleet Mix 2016

Trips 5092

Default	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
FleetMix (Model Default)	0.5523	0.058092	0.185339	0.123855	0.029634	0.004459	0.012625	0.022329	0.001774	0.001272	0.006012	0.000525	0.001763	100%
Trips	2,812	296	944	631	151	23	64	114	9	6	31	3	9	5,092
Percent	80%			12%	7%									100%
without buses/MH	0.552322	0.058092	0.185339	0.123855	0.029634	0.004459	0.012625	0.022329	0	0	0.006012	0	0	99%
Percent	80%			12%	7%									99%
Adjusted without buses/MH	0.552322	0.058092	0.185339	0.123855	0.031923	0.004803	0.013600	0.024054	0.000000	0.000000	0.006476	0.000000	0.000000	
Percent check	80%			12%	7%									100%
Assumed Mix	98.0%			1.00%	1.00%									100%
adjusted with Assumed	0.674714	0.070965	0.226409	0.010000	0.004292	0.000646	0.001828	0.003234	0.000000	0.000000	0.007912	0.000000	0.000000	100%
Trips	3,436	361	1,153	51	22	3	9	16	0	0	40	0	0	5,092
Check	*4,990*			*51*	*51*									

Source: Fleet mix based on HCM mix in the model, provided by Fehr & Peers (April 2016).

Changes to the CalEEMod Defaults - Fleet Mix 2020

Trips 5092

Default	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
FleetMix (Model Default)	0.5518	0.05874	0.185183	0.122735	0.029388	0.004432	0.012603	0.023662	0.001776	0.001268	0.006159	0.000502	0.001767	100%
Trips	2,810	299	943	625	150	23	64	120	9	6	31	3	9	5,092
Percent	80%			12%	8%									100%
without buses/MH	0.551785	0.058740	0.185183	0.122735	0.029388	0.004432	0.012603	0.023662	0	0	0.006159	0	0	99%
Percent	80%			12%	7%									99%
Adjusted without buses/MH	0.551785	0.058740	0.185183	0.122735	0.031616	0.004768	0.013558	0.025456	0.000000	0.000000	0.006626	0.000000	0.000000	
Percent check	80%			12%	8%									100%
Assumed Mix	98.0%			1.00%	1.00%									100%
adjusted with Assumed	0.673970	0.071747	0.226189	0.010000	0.004193	0.000632	0.001798	0.003376	0.000000	0.000000	0.008093	0.000000	0.000000	100%
Trips	3,432	365	1,152	51	21	3	9	17	0	0	41	0	0	5,092
Check	*4,990*			*51*	*51*									

Source: Fleet mix based on HCM mix in the model, provided by Fehr & Peers (April 2016).

Marina Plaza Project Santa Clara
County, Annual
Construction- Unmitigated

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	644.00	Space	0.01	251,353.00	0
Other Asphalt Surfaces	28.21	1000sqft	0.65	28,209.00	0
Other Non-Asphalt Surfaces	49.38	1000sqft	1.13	49,379.00	0
Parking Lot	36.00	Space	0.26	11,479.00	0
Fast Food Restaurant w/o Drive Thru	2.80	1000sqft	0.06	2,800.00	0
Hotel	122.00	Room	0.59	87,432.00	0
Quality Restaurant	9.00	1000sqft	0.21	9,000.00	0
Apartments Low Rise	188.00	Dwelling Unit	1.97	276,371.00	542
Strip Mall	10.80	1000sqft	0.25	10,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Updated PD

Construction Phase - Calculated values

Off-road Equipment - More air compressors

Off-road Equipment - Cranes only onsite 4 months out of 18 month total, this is reflected.

Off-road Equipment - provided by applicant

Off-road Equipment - provided by applicant

Off-road Equipment - provided by applicant

Off-road Equipment - According to Equipment inputs

Off-road Equipment - equipment included in Demo sub-phase

Off-road Equipment - No reductions due to overlap in this period

Off-road Equipment - equipment accounted for in grading sub-phase

Off-road Equipment - Tractors as shown in Const_Equip in CalEEMod_Inputs

Off-road Equipment - Number reduced due to overlap with grading

Trips and VMT - Taken from Const_Equip

Site for demo debris is 15 mi away

Demolition -

Grading - According to Input Assumptions file

Architectural Coating - VOC Content for non-residential not specified on CalEEMod Inputs, left baselines

Area Coating - per CalEEMod arch coating methodology

Construction Off-road Equipment Mitigation - BAAQMD BMPs for fugitive dust

Water Mitigation - CalGreen

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	219,659.00	75,441.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	658,976.00	165,048.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	150.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	230.00	110.00
tblConstructionPhase	NumDays	230.00	520.00
tblConstructionPhase	NumDays	230.00	22.00

tblConstructionPhase	NumDays	20.00	54.00
tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	20.00	175.00
tblConstructionPhase	NumDays	20.00	165.00
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	PhaseEndDate	4/16/2020	12/31/2019
tblConstructionPhase	PhaseEndDate	2/2/2018	9/15/2017
tblConstructionPhase	PhaseEndDate	2/14/2017	11/30/2016
tblConstructionPhase	PhaseEndDate	10/18/2017	9/15/2017
tblConstructionPhase	PhaseEndDate	5/4/2018	9/1/2017
tblConstructionPhase	PhaseEndDate	1/30/2020	12/31/2019
tblConstructionPhase	PhaseEndDate	1/2/2017	2/15/2017
tblConstructionPhase	PhaseStartDate	1/1/2020	9/15/2019
tblConstructionPhase	PhaseStartDate	9/2/2017	4/15/2017
tblConstructionPhase	PhaseStartDate	1/14/2017	11/1/2016
tblConstructionPhase	PhaseStartDate	2/16/2017	1/15/2017
tblConstructionPhase	PhaseStartDate	9/16/2017	1/15/2017
tblConstructionPhase	PhaseStartDate	10/16/2019	9/15/2019
tblConstructionPhase	PhaseStartDate	12/1/2016	1/15/2017
tblGrading	MaterialExported	0.00	105,000.00
tblLandUse	LandUseSquareFeet	257,600.00	251,353.00
tblLandUse	LandUseSquareFeet	28,210.00	28,209.00
tblLandUse	LandUseSquareFeet	49,380.00	49,379.00
tblLandUse	LandUseSquareFeet	14,400.00	11,479.00
tblLandUse	LandUseSquareFeet	177,144.00	87,432.00
tblLandUse	LandUseSquareFeet	188,000.00	276,371.00
tblLandUse	LotAcreage	5.80	0.01
tblLandUse	LotAcreage	0.32	0.26
tblLandUse	LotAcreage	4.07	0.59

tblLandUse	LotAcreage	11.75	1.97
tblLandUse	Population	538.00	542.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	15.00
tblTripsAndVMT	HaulingTripNumber	349.00	352.00

tblTripsAndVMT	HaulingTripNumber	13,125.00	13,126.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	94.00	70.00
tblTripsAndVMT	VendorTripNumber	94.00	70.00
tblTripsAndVMT	VendorTripNumber	94.00	70.00
tblTripsAndVMT	WorkerTripNumber	18.00	40.00
tblTripsAndVMT	WorkerTripNumber	65.00	44.00
tblTripsAndVMT	WorkerTripNumber	15.00	44.00
tblTripsAndVMT	WorkerTripNumber	23.00	50.00
tblTripsAndVMT	WorkerTripNumber	323.00	180.00
tblTripsAndVMT	WorkerTripNumber	323.00	180.00
tblTripsAndVMT	WorkerTripNumber	323.00	180.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1095	1.1469	0.9290	1.1900e-003	0.0480	0.0558	0.1038	8.4600e-003	0.0520	0.0604	0.0000	108.7648	108.7648	0.0260	0.0000	109.3098
2017	1.1657	11.5553	9.7073	0.0175	1.2565	0.5291	1.7855	0.4875	0.4922	0.9798	0.0000	1,544.0273	1,544.0273	0.2287	0.0000	1,548.8295
2018	0.5391	3.9632	4.7230	8.6400e-003	0.2729	0.2298	0.5027	0.0738	0.2181	0.2919	0.0000	715.7744	715.7744	0.0808	0.0000	717.4720
2019	4.5028	3.5551	4.3774	8.1700e-003	0.2448	0.2007	0.4455	0.0661	0.1903	0.2563	0.0000	668.1778	668.1778	0.0853	0.0000	669.9681
Total	**6.3171**	**20.2204**	**19.7367**	**0.0355**	**1.8221**	**1.0154**	**2.8376**	**0.6358**	**0.9526**	**1.5884**	**0.0000**	**3,036.7442**	**3,036.7442**	**0.4207**	**0.0000**	**3,045.5794**

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	0.1095	1.1468	0.9290	1.1900e-003	0.0256	0.0558	0.0814	5.0000e-003	0.0520	0.0570	0.0000	108.7647	108.7647	0.0260	0.0000	109.3096
2017	1.1657	11.5553	9.7073	0.0175	0.7135	0.5291	1.2426	0.2569	0.4922	0.7492	0.0000	1,544.0264	1,544.0264	0.2287	0.0000	1,548.8286
2018	0.5391	3.9632	4.7230	8.6400e-003	0.2524	0.2298	0.4823	0.0688	0.2181	0.2869	0.0000	715.7740	715.7740	0.0808	0.0000	717.4716
2019	4.5028	3.5551	4.3774	8.1700e-003	0.2264	0.2007	0.4271	0.0615	0.1903	0.2518	0.0000	668.1774	668.1774	0.0853	0.0000	669.9677
Total	**6.3171**	**20.2204**	**19.7366**	**0.0355**	**1.2179**	**1.0154**	**2.2333**	**0.3923**	**0.9526**	**1.3448**	**0.0000**	**3,036.7424**	**3,036.7424**	**0.4207**	**0.0000**	**3,045.5774**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**33.16**	**0.00**	**21.29**	**38.31**	**0.00**	**15.34**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.4515	0.0188	1.6175	2.5000e-004		0.0381	0.0381		0.0381	0.0381	3.0771	7.2673	10.3444	7.9800e-003	2.6000e-004	10.5915
Energy	0.0464	0.4156	0.3104	2.5300e-003		0.0320	0.0320		0.0320	0.0320	0.0000	1,525.1284	1,525.1284	0.0570	0.0184	1,532.0258
Mobile	2.3204	4.0598	20.2841	0.0483	3.4461	0.0593	3.5054	0.9213	0.0548	0.9760	0.0000	3,350.5959	3,350.5959	0.1268	0.0000	3,353.2595

Waste						0.0000	0.0000		0.0000	0.0000	41.6294	0.0000	41.6294	2.4602	0.0000	93.2941
Water						0.0000	0.0000		0.0000	0.0000	6.2580	39.9949	46.2529	0.6446	0.0156	64.6094
Total	**5.8182**	**4.4941**	**22.2120**	**0.0511**	**3.4461**	**0.1295**	**3.5755**	**0.9213**	**0.1249**	**1.0462**	**50.9644**	**4,922.9866**	**4,973.9510**	**3.2966**	**0.0342**	**5,053.7804**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.4515	0.0188	1.6175	2.5000e-004		0.0381	0.0381		0.0381	0.0381	3.0771	7.2673	10.3444	7.9800e-003	2.6000e-004	10.5915
Energy	0.0464	0.4156	0.3104	2.5300e-003		0.0320	0.0320		0.0320	0.0320	0.0000	1,525.1284	1,525.1284	0.0570	0.0184	1,532.0258
Mobile	2.3204	4.0598	20.2841	0.0483	3.4461	0.0593	3.5054	0.9213	0.0548	0.9760	0.0000	3,350.5959	3,350.5959	0.1268	0.0000	3,353.2595
Waste						0.0000	0.0000		0.0000	0.0000	41.6294	0.0000	41.6294	2.4602	0.0000	93.2941
Water						0.0000	0.0000		0.0000	0.0000	5.0064	33.2393	38.2456	0.5156	0.0124	52.9277
Total	**5.8182**	**4.4941**	**22.2120**	**0.0511**	**3.4461**	**0.1295**	**3.5755**	**0.9213**	**0.1249**	**1.0462**	**49.7128**	**4,916.2309**	**4,965.9437**	**3.1677**	**0.0311**	**5,042.0986**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.46**	**0.14**	**0.16**	**3.91**	**9.12**	**0.23**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2016	1/13/2017	5	54	
2	Demolition Hauling	Demolition	11/1/2016	11/30/2016	5	22	
3	Site Preparation	Site Preparation	1/15/2017	2/15/2017	5	23	
4	Grading	Grading	1/15/2017	9/15/2017	5	175	
5	Grading Hauling	Grading	1/15/2017	9/1/2017	5	165	
6	Building Construction A	Building Construction	4/15/2017	9/15/2017	5	110	
7	Building Construction B	Building Construction	9/16/2017	9/13/2019	5	520	
8	Building Construction C	Building Construction	9/14/2019	10/15/2019	5	22	
9	Paving	Paving	9/15/2019	12/31/2019	5	77	
10	Architectural Coating	Architectural Coating	9/15/2019	12/31/2019	5	77	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 437.5

Acres of Paving: 0

Residential Indoor: 559,651; Residential Outdoor: 186,550; Non-Residential Indoor: 165,048; Non-Residential Outdoor: 75,441

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	4	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Demolition Hauling	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition Hauling	Excavators	0	8.00	162	0.38
Demolition Hauling	Rubber Tired Dozers	0	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading Hauling	Excavators	0	8.00	162	0.38
Grading Hauling	Graders	0	8.00	174	0.41
Grading Hauling	Rubber Tired Dozers	0	8.00	255	0.40
Grading Hauling	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction A	Cranes	1	1.00	226	0.29
Building Construction A	Forklifts	4	8.00	89	0.20
Building Construction A	Generator Sets	2	8.00	84	0.74
Building Construction A	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction A	Welders	1	8.00	46	0.45
Building Construction B	Cranes	1	1.00	226	0.29
Building Construction B	Forklifts	4	8.00	89	0.20
Building Construction B	Generator Sets	2	8.00	84	0.74
Building Construction B	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction B	Welders	1	8.00	46	0.45
Building Construction C	Cranes	1	1.00	226	0.29
Building Construction C	Forklifts	4	8.00	89	0.20
Building Construction C	Generator Sets	2	8.00	84	0.74
Building Construction C	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction C	Welders	1	8.00	46	0.45
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	2	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	40.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition Hauling	0	0.00	0.00	352.00	12.40	7.30	15.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	44.00	4.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	50.00	4.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Hauling	0	0.00	0.00	13,126.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction A	8	180.00	70.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction B	11	180.00	70.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction C	9	180.00	70.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	40.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	44.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1029	1.1019	0.8461	9.9000e-004		0.0552	0.0552		0.0514	0.0514	0.0000	92.5895	92.5895	0.0255	0.0000	93.1251
Total	**0.1029**	**1.1019**	**0.8461**	**9.9000e-004**		**0.0552**	**0.0552**		**0.0514**	**0.0514**	**0.0000**	**92.5895**	**92.5895**	**0.0255**	**0.0000**	**93.1251**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2800e-003	4.6100e-003	0.0447	9.0000e-005	8.0100e-003	6.0000e-005	8.0800e-003	2.1300e-003	6.0000e-005	2.1900e-003	0.0000	7.0597	7.0597	3.8000e-004	0.0000	7.0676
Total	**3.2800e-003**	**4.6100e-003**	**0.0447**	**9.0000e-005**	**8.0100e-003**	**6.0000e-005**	**8.0800e-003**	**2.1300e-003**	**6.0000e-005**	**2.1900e-003**	**0.0000**	**7.0597**	**7.0597**	**3.8000e-004**	**0.0000**	**7.0676**

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	0.1029	1.1019	0.8461	9.9000e-004		0.0552	0.0552		0.0514	0.0514	0.0000	92.5894	92.5894	0.0255	0.0000	93.1250
Total	**0.1029**	**1.1019**	**0.8461**	**9.9000e-004**		**0.0552**	**0.0552**		**0.0514**	**0.0514**	**0.0000**	**92.5894**	**92.5894**	**0.0255**	**0.0000**	**93.1250**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2800e-003	4.6100e-003	0.0447	9.0000e-005	7.3900e-003	6.0000e-005	7.4500e-003	1.9800e-003	6.0000e-005	2.0400e-003	0.0000	7.0597	7.0597	3.8000e-004	0.0000	7.0676
Total	**3.2800e-003**	**4.6100e-003**	**0.0447**	**9.0000e-005**	**7.3900e-003**	**6.0000e-005**	**7.4500e-003**	**1.9800e-003**	**6.0000e-005**	**2.0400e-003**	**0.0000**	**7.0597**	**7.0597**	**3.8000e-004**	**0.0000**	**7.0676**

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0221	0.2336	0.1866	2.3000e-004		0.0116	0.0116		0.0108	0.0108	0.0000	20.7642	20.7642	5.7700e-003	0.0000	20.8855
Total	**0.0221**	**0.2336**	**0.1866**	**2.3000e-004**		**0.0116**	**0.0116**		**0.0108**	**0.0108**	**0.0000**	**20.7642**	**20.7642**	**5.7700e-003**	**0.0000**	**20.8855**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	9.4000e-004	9.0900e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.5431	1.5431	8.0000e-005	0.0000	1.5448
Total	**6.7000e-004**	**9.4000e-004**	**9.0900e-003**	**2.0000e-005**	**1.8200e-003**	**1.0000e-005**	**1.8300e-003**	**4.8000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.5431**	**1.5431**	**8.0000e-005**	**0.0000**	**1.5448**

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	0.0221	0.2336	0.1866	2.3000e-004		0.0116	0.0116		0.0108	0.0108	0.0000	20.7642	20.7642	5.7700e-003	0.0000	20.8855
Total	**0.0221**	**0.2336**	**0.1866**	**2.3000e-004**		**0.0116**	**0.0116**		**0.0108**	**0.0108**	**0.0000**	**20.7642**	**20.7642**	**5.7700e-003**	**0.0000**	**20.8855**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	9.4000e-004	9.0900e-003	2.0000e-005	1.6800e-003	1.0000e-005	1.6900e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.5431	1.5431	8.0000e-005	0.0000	1.5448
Total	**6.7000e-004**	**9.4000e-004**	**9.0900e-003**	**2.0000e-005**	**1.6800e-003**	**1.0000e-005**	**1.6900e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.5431**	**1.5431**	**8.0000e-005**	**0.0000**	**1.5448**

3.3 Demolition Hauling - 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					0.0378	0.0000	0.0378	5.7200e-003	0.0000	5.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0378**	**0.0000**	**0.0378**	**5.7200e-003**	**0.0000**	**5.7200e-003**	**0.0000**	**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	3.3300e-003	0.0403	0.0382	1.0000e-004	2.2300e-003	5.2000e-004	2.7500e-003	6.1000e-004	4.7000e-004	1.0900e-003	0.0000	9.1156	9.1156	7.0000e-005	0.0000	9.1171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	**3.3300e-003**	**0.0403**	**0.0382**	**1.0000e-004**	**2.2300e-003**	**5.2000e-004**	**2.7500e-003**	**6.1000e-004**	**4.7000e-004**	**1.0900e-003**	**0.0000**	**9.1156**	**9.1156**	**7.0000e-005**	**0.0000**	**9.1171**

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					0.0162	0.0000	0.0162	2.4500e-003	0.0000	2.4500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0162**	**0.0000**	**0.0162**	**2.4500e-003**	**0.0000**	**2.4500e-003**	**0.0000**	**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	3.3300e-003	0.0403	0.0382	1.0000e-004	2.0800e-003	5.2000e-004	2.6000e-003	5.8000e-004	4.7000e-004	1.0500e-003	0.0000	9.1156	9.1156	7.0000e-005	0.0000	9.1171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	**3.3300e-003**	**0.0403**	**0.0382**	**1.0000e-004**	**2.0800e-003**	**5.2000e-004**	**2.6000e-003**	**5.8000e-004**	**4.7000e-004**	**1.0500e-003**	**0.0000**	**9.1156**	**9.1156**	**7.0000e-005**	**0.0000**	**9.1171**

3.4 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1385	0.0000	0.1385	0.0761	0.0000	0.0761	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0420	0.4435	0.3388	3.5000e-004		0.0246	0.0246		0.0227	0.0227	0.0000	32.2689	32.2689	9.8900e-003	0.0000	32.4765
Total	**0.0420**	**0.4435**	**0.3388**	**3.5000e-004**	**0.1385**	**0.0246**	**0.1631**	**0.0761**	**0.0227**	**0.0988**	**0.0000**	**32.2689**	**32.2689**	**9.8900e-003**	**0.0000**	**32.4765**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	4.1100e-003	5.7300e-003	1.0000e-005	3.0000e-004	6.0000e-005	3.6000e-004	9.0000e-005	5.0000e-005	1.4000e-004	0.0000	0.9777	0.9777	1.0000e-005	0.0000	0.9779
Worker	1.6900e-003	2.3700e-003	0.0230	5.0000e-005	4.6100e-003	4.0000e-005	4.6400e-003	1.2300e-003	3.0000e-005	1.2600e-003	0.0000	3.9041	3.9041	2.0000e-004	0.0000	3.9083
Total	**2.1700e-003**	**6.4800e-003**	**0.0287**	**6.0000e-005**	**4.9100e-003**	**1.0000e-004**	**5.0000e-003**	**1.3200e-003**	**8.0000e-005**	**1.4000e-003**	**0.0000**	**4.8818**	**4.8818**	**2.1000e-004**	**0.0000**	**4.8862**

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					0.0592	0.0000	0.0592	0.0326	0.0000	0.0326	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0420	0.4435	0.3388	3.5000e-004		0.0246	0.0246		0.0227	0.0227	0.0000	32.2689	32.2689	9.8900e-003	0.0000	32.4765
Total	**0.0420**	**0.4435**	**0.3388**	**3.5000e-004**	**0.0592**	**0.0246**	**0.0838**	**0.0326**	**0.0227**	**0.0552**	**0.0000**	**32.2689**	**32.2689**	**9.8900e-003**	**0.0000**	**32.4765**

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	4.1100e-003	5.7300e-003	1.0000e-005	2.8000e-004	6.0000e-005	3.4000e-004	8.0000e-005	5.0000e-005	1.4000e-004	0.0000	0.9777	0.9777	1.0000e-005	0.0000	0.9779
Worker	1.6900e-003	2.3700e-003	0.0230	5.0000e-005	4.2500e-003	4.0000e-005	4.2800e-003	1.1400e-003	3.0000e-005	1.1700e-003	0.0000	3.9041	3.9041	2.0000e-004	0.0000	3.9083
Total	**2.1700e-003**	**6.4800e-003**	**0.0287**	**6.0000e-005**	**4.5300e-003**	**1.0000e-004**	**4.6200e-003**	**1.2200e-003**	**8.0000e-005**	**1.3100e-003**	**0.0000**	**4.8818**	**4.8818**	**2.1000e-004**	**0.0000**	**4.8862**

3.5 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7589	0.0000	0.7589	0.3147	0.0000	0.3147	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5614	6.3556	4.3049	5.6700e-003		0.3103	0.3103		0.2855	0.2855	0.0000	526.4103	526.4103	0.1613	0.0000	529.7974
Total	**0.5614**	**6.3556**	**4.3049**	**5.6700e-003**	**0.7589**	**0.3103**	**1.0692**	**0.3147**	**0.2855**	**0.6002**	**0.0000**	**526.4103**	**526.4103**	**0.1613**	**0.0000**	**529.7974**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6400e-003	0.0313	0.0436	8.0000e-005	2.2600e-003	4.5000e-004	2.7100e-003	6.5000e-004	4.2000e-004	1.0600e-003	0.0000	7.4391	7.4391	6.0000e-005	0.0000	7.4403
Worker	0.0146	0.0205	0.1988	4.6000e-004	0.0398	3.0000e-004	0.0401	0.0106	2.8000e-004	0.0109	0.0000	33.7560	33.7560	1.7100e-003	0.0000	33.7920

Total	**0.0182**	**0.0518**	**0.2424**	**5.4000e-004**	**0.0421**	**7.5000e-004**	**0.0429**	**0.0112**	**7.0000e-004**	**0.0119**	**0.0000**	**41.1951**	**41.1951**	**1.7700e-003**	**0.0000**	**41.2323**

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					0.3244	0.0000	0.3244	0.1345	0.0000	0.1345	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5614	6.3556	4.3049	5.6700e-003		0.3103	0.3103		0.2855	0.2855	0.0000	526.4096	526.4096	0.1613	0.0000	529.7967
Total	**0.5614**	**6.3556**	**4.3049**	**5.6700e-003**	**0.3244**	**0.3103**	**0.6347**	**0.1345**	**0.2855**	**0.4200**	**0.0000**	**526.4096**	**526.4096**	**0.1613**	**0.0000**	**529.7967**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6400e-003	0.0313	0.0436	8.0000e-005	2.1100e-003	4.5000e-004	2.5700e-003	6.1000e-004	4.2000e-004	1.0300e-003	0.0000	7.4391	7.4391	6.0000e-005	0.0000	7.4403
Worker	0.0146	0.0205	0.1988	4.6000e-004	0.0367	3.0000e-004	0.0370	9.8300e-003	2.8000e-004	0.0101	0.0000	33.7560	33.7560	1.7100e-003	0.0000	33.7920
Total	**0.0182**	**0.0518**	**0.2424**	**5.4000e-004**	**0.0388**	**7.5000e-004**	**0.0396**	**0.0104**	**7.0000e-004**	**0.0111**	**0.0000**	**41.1951**	**41.1951**	**1.7700e-003**	**0.0000**	**41.2323**

3.6 Grading Hauling - 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					5.9400e-003	0.0000	5.9400e-003	9.0000e-004	0.0000	9.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.9400e-003**	**0.0000**	**5.9400e-003**	**9.0000e-004**	**0.0000**	**9.0000e-004**	**0.0000**	**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	0.1279	1.7552	1.4290	4.9100e-003	0.1109	0.0225	0.1334	0.0305	0.0207	0.0511	0.0000	441.9766	441.9766	3.2100e-003	0.0000	442.0441
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	**0.1279**	**1.7552**	**1.4290**	**4.9100e-003**	**0.1109**	**0.0225**	**0.1334**	**0.0305**	**0.0207**	**0.0511**	**0.0000**	**441.9766**	**441.9766**	**3.2100e-003**	**0.0000**	**442.0441**

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					2.5400e-003	0.0000	2.5400e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.5400e-003**	**0.0000**	**2.5400e-003**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**0.0000**	**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	0.1279	1.7552	1.4290	4.9100e-003	0.1034	0.0225	0.1259	0.0286	0.0207	0.0493	0.0000	441.9766	441.9766	3.2100e-003	0.0000	442.0441
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	**0.1279**	**1.7552**	**1.4290**	**4.9100e-003**	**0.1034**	**0.0225**	**0.1259**	**0.0286**	**0.0207**	**0.0493**	**0.0000**	**441.9766**	**441.9766**	**3.2100e-003**	**0.0000**	**442.0441**

3.7 Building Construction A - 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	0.1411	1.0415	0.8140	1.2400e-003		0.0756	0.0756		0.0727	0.0727	0.0000	107.3106	107.3106	0.0179	0.0000	107.6871
Total	**0.1411**	**1.0415**	**0.8140**	**1.2400e-003**		**0.0756**	**0.0756**		**0.0727**	**0.0727**	**0.0000**	**107.3106**	**107.3106**	**0.0179**	**0.0000**	**107.6871**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0400	0.3442	0.4797	9.1000e-004	0.0249	4.9800e-003	0.0298	7.1300e-003	4.5800e-003	0.0117	0.0000	81.8300	81.8300	6.3000e-004	0.0000	81.8433
Worker	0.0330	0.0464	0.4498	1.0400e-003	0.0901	6.9000e-004	0.0908	0.0240	6.3000e-004	0.0246	0.0000	76.3851	76.3851	3.8800e-003	0.0000	76.4665
Total	**0.0730**	**0.3906**	**0.9295**	**1.9500e-003**	**0.1150**	**5.6700e-003**	**0.1207**	**0.0311**	**5.2100e-003**	**0.0363**	**0.0000**	**158.2151**	**158.2151**	**4.5100e-003**	**0.0000**	**158.3098**

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	0.1411	1.0415	0.8140	1.2400e-003		0.0756	0.0756		0.0727	0.0727	0.0000	107.3104	107.3104	0.0179	0.0000	107.6870
Total	**0.1411**	**1.0415**	**0.8140**	**1.2400e-003**		**0.0756**	**0.0756**		**0.0727**	**0.0727**	**0.0000**	**107.3104**	**107.3104**	**0.0179**	**0.0000**	**107.6870**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0400	0.3442	0.4797	9.1000e-004	0.0233	4.9800e-003	0.0282	6.7400e-003	4.5800e-003	0.0113	0.0000	81.8300	81.8300	6.3000e-004	0.0000	81.8433
Worker	0.0330	0.0464	0.4498	1.0400e-003	0.0831	6.9000e-004	0.0838	0.0223	6.3000e-004	0.0229	0.0000	76.3851	76.3851	3.8800e-003	0.0000	76.4665
Total	**0.0730**	**0.3906**	**0.9295**	**1.9500e-003**	**0.1064**	**5.6700e-003**	**0.1121**	**0.0290**	**5.2100e-003**	**0.0342**	**0.0000**	**158.2151**	**158.2151**	**4.5100e-003**	**0.0000**	**158.3098**

3.8 Building Construction B - 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	0.1274	1.0097	0.7907	1.1500e-003		0.0741	0.0741		0.0703	0.0703	0.0000	101.5877	101.5877	0.0209	0.0000	102.0273
Total	**0.1274**	**1.0097**	**0.7907**	**1.1500e-003**		**0.0741**	**0.0741**		**0.0703**	**0.0703**	**0.0000**	**101.5877**	**101.5877**	**0.0209**	**0.0000**	**102.0273**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0273	0.2347	0.3270	6.2000e-004	0.0170	3.3900e-003	0.0204	4.8600e-003	3.1200e-003	7.9800e-003	0.0000	55.7932	55.7932	4.3000e-004	0.0000	55.8023
Worker	0.0225	0.0317	0.3067	7.1000e-004	0.0615	4.7000e-004	0.0619	0.0163	4.3000e-004	0.0168	0.0000	52.0807	52.0807	2.6400e-003	0.0000	52.1362
Total	**0.0498**	**0.2663**	**0.6337**	**1.3300e-003**	**0.0784**	**3.8600e-003**	**0.0823**	**0.0212**	**3.5500e-003**	**0.0248**	**0.0000**	**107.8739**	**107.8739**	**3.0700e-003**	**0.0000**	**107.9385**

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	0.1274	1.0097	0.7907	1.1500e-003		0.0741	0.0741		0.0703	0.0703	0.0000	101.5875	101.5875	0.0209	0.0000	102.0272
Total	**0.1274**	**1.0097**	**0.7907**	**1.1500e-003**		**0.0741**	**0.0741**		**0.0703**	**0.0703**	**0.0000**	**101.5875**	**101.5875**	**0.0209**	**0.0000**	**102.0272**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0273	0.2347	0.3270	6.2000e-004	0.0159	3.3900e-003	0.0193	4.5900e-003	3.1200e-003	7.7100e-003	0.0000	55.7932	55.7932	4.3000e-004	0.0000	55.8023
Worker	0.0225	0.0317	0.3067	7.1000e-004	0.0567	4.7000e-004	0.0571	0.0152	4.3000e-004	0.0156	0.0000	52.0807	52.0807	2.6400e-003	0.0000	52.1362
Total	**0.0498**	**0.2663**	**0.6337**	**1.3300e-003**	**0.0725**	**3.8600e-003**	**0.0764**	**0.0198**	**3.5500e-003**	**0.0233**	**0.0000**	**107.8739**	**107.8739**	**3.0700e-003**	**0.0000**	**107.9385**

3.8 Building Construction B - 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	0.3828	3.1247	2.6936	4.0000e-003		0.2173	0.2173		0.2066	0.2066	0.0000	350.5147	350.5147	0.0709	0.0000	352.0036
Total	**0.3828**	**3.1247**	**2.6936**	**4.0000e-003**		**0.2173**	**0.2173**		**0.2066**	**0.2066**	**0.0000**	**350.5147**	**350.5147**	**0.0709**	**0.0000**	**352.0036**

Unmitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0860	0.7393	1.0719	2.1700e-003	0.0590	0.0109	0.0699	0.0169	0.0101	0.0270	0.0000	190.7671	190.7671	1.4800e-003	0.0000	190.7981
Worker	0.0703	0.0992	0.9575	2.4800e-003	0.2139	1.5800e-003	0.2155	0.0569	1.4600e-003	0.0583	0.0000	174.4926	174.4926	8.4600e-003	0.0000	174.6702
Total	**0.1563**	**0.8385**	**2.0294**	**4.6500e-003**	**0.2729**	**0.0125**	**0.2854**	**0.0738**	**0.0115**	**0.0853**	**0.0000**	**365.2597**	**365.2597**	**9.9400e-003**	**0.0000**	**365.4683**

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	0.3828	3.1247	2.6936	4.0000e-003		0.2173	0.2173		0.2066	0.2066	0.0000	350.5143	350.5143	0.0709	0.0000	352.0032
Total	**0.3828**	**3.1247**	**2.6936**	**4.0000e-003**		**0.2173**	**0.2173**		**0.2066**	**0.2066**	**0.0000**	**350.5143**	**350.5143**	**0.0709**	**0.0000**	**352.0032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0860	0.7393	1.0719	2.1700e-003	0.0552	0.0109	0.0661	0.0160	0.0101	0.0260	0.0000	190.7671	190.7671	1.4800e-003	0.0000	190.7981
Worker	0.0703	0.0992	0.9575	2.4800e-003	0.1972	1.5800e-003	0.1988	0.0528	1.4600e-003	0.0543	0.0000	174.4926	174.4926	8.4600e-003	0.0000	174.6702

Total	**0.1563**	**0.8385**	**2.0294**	**4.6500e-003**	**0.2524**	**0.0125**	**0.2649**	**0.0688**	**0.0115**	**0.0803**	**0.0000**	**365.2597**	**365.2597**	**9.9400e-003**	**0.0000**	**365.4683**

3.8 Building Construction B - 2019

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	0.2379	2.0022	1.8727	2.8200e-003		0.1320	0.1320		0.1255	0.1255	0.0000	245.0400	245.0400	0.0486	0.0000	246.0612
Total	**0.2379**	**2.0022**	**1.8727**	**2.8200e-003**		**0.1320**	**0.1320**		**0.1255**	**0.1255**	**0.0000**	**245.0400**	**245.0400**	**0.0486**	**0.0000**	**246.0612**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0550	0.4757	0.7165	1.5200e-003	0.0416	7.1600e-003	0.0487	0.0119	6.5900e-003	0.0185	0.0000	132.1483	132.1483	1.0200e-003	0.0000	132.1697
Worker	0.0453	0.0636	0.6135	1.7400e-003	0.1508	1.0900e-003	0.1519	0.0401	1.0100e-003	0.0411	0.0000	118.5831	118.5831	5.5400e-003	0.0000	118.6994
Total	**0.1003**	**0.5394**	**1.3300**	**3.2600e-003**	**0.1924**	**8.2500e-003**	**0.2006**	**0.0520**	**7.6000e-003**	**0.0596**	**0.0000**	**250.7314**	**250.7314**	**6.5600e-003**	**0.0000**	**250.8691**

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	0.2379	2.0022	1.8727	2.8200e-003		0.1320	0.1320		0.1255	0.1255	0.0000	245.0397	245.0397	0.0486	0.0000	246.0609
Total	**0.2379**	**2.0022**	**1.8727**	**2.8200e-003**		**0.1320**	**0.1320**		**0.1255**	**0.1255**	**0.0000**	**245.0397**	**245.0397**	**0.0486**	**0.0000**	**246.0609**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0550	0.4757	0.7165	1.5200e-003	0.0389	7.1600e-003	0.0461	0.0113	6.5900e-003	0.0179	0.0000	132.1483	132.1483	1.0200e-003	0.0000	132.1697
Worker	0.0453	0.0636	0.6135	1.7400e-003	0.1390	1.0900e-003	0.1401	0.0372	1.0100e-003	0.0382	0.0000	118.5831	118.5831	5.5400e-003	0.0000	118.6994
Total	**0.1003**	**0.5394**	**1.3300**	**3.2600e-003**	**0.1779**	**8.2500e-003**	**0.1862**	**0.0485**	**7.6000e-003**	**0.0561**	**0.0000**	**250.7314**	**250.7314**	**6.5600e-003**	**0.0000**	**250.8691**

3.9 Building Construction C - 2019

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	0.0240	0.1944	0.1796	2.8000e-004		0.0128	0.0128		0.0122	0.0122	0.0000	23.9276	23.9276	4.1100e-003	0.0000	24.0140
Total	**0.0240**	**0.1944**	**0.1796**	**2.8000e-004**		**0.0128**	**0.0128**		**0.0122**	**0.0122**	**0.0000**	**23.9276**	**23.9276**	**4.1100e-003**	**0.0000**	**24.0140**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5800e-003	0.0569	0.0857	1.8000e-004	4.9700e-003	8.6000e-004	5.8300e-003	1.4300e-003	7.9000e-004	2.2100e-003	0.0000	15.8003	15.8003	1.2000e-004	0.0000	15.8029
Worker	5.4200e-003	7.6100e-003	0.0734	2.1000e-004	0.0180	1.3000e-004	0.0182	4.7900e-003	1.2000e-004	4.9100e-003	0.0000	14.1784	14.1784	6.6000e-004	0.0000	14.1923
Total	**0.0120**	**0.0645**	**0.1590**	**3.9000e-004**	**0.0230**	**9.9000e-004**	**0.0240**	**6.2200e-003**	**9.1000e-004**	**7.1200e-003**	**0.0000**	**29.9788**	**29.9788**	**7.8000e-004**	**0.0000**	**29.9952**

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	0.0240	0.1944	0.1796	2.8000e-004		0.0128	0.0128		0.0122	0.0122	0.0000	23.9275	23.9275	4.1100e-003	0.0000	24.0139
Total	**0.0240**	**0.1944**	**0.1796**	**2.8000e-004**		**0.0128**	**0.0128**		**0.0122**	**0.0122**	**0.0000**	**23.9275**	**23.9275**	**4.1100e-003**	**0.0000**	**24.0139**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5800e-003	0.0569	0.0857	1.8000e-004	4.6500e-003	8.6000e-004	5.5100e-003	1.3500e-003	7.9000e-004	2.1300e-003	0.0000	15.8003	15.8003	1.2000e-004	0.0000	15.8029
Worker	5.4200e-003	7.6100e-003	0.0734	2.1000e-004	0.0166	1.3000e-004	0.0168	4.4500e-003	1.2000e-004	4.5700e-003	0.0000	14.1784	14.1784	6.6000e-004	0.0000	14.1923
Total	**0.0120**	**0.0645**	**0.1590**	**3.9000e-004**	**0.0213**	**9.9000e-004**	**0.0223**	**5.8000e-003**	**9.1000e-004**	**6.7000e-003**	**0.0000**	**29.9788**	**29.9788**	**7.8000e-004**	**0.0000**	**29.9952**

3.10 Paving - 2019

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	0.0541	0.5538	0.5273	7.7000e-004		0.0333	0.0333		0.0306	0.0306	0.0000	69.1286	69.1286	0.0219	0.0000	69.5879
Paving	1.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0553**	**0.5538**	**0.5273**	**7.7000e-004**		**0.0333**	**0.0333**		**0.0306**	**0.0306**	**0.0000**	**69.1286**	**69.1286**	**0.0219**	**0.0000**	**69.5879**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2100e-003	5.9200e-003	0.0571	1.6000e-004	0.0140	1.0000e-004	0.0141	3.7300e-003	9.0000e-005	3.8200e-003	0.0000	11.0277	11.0277	5.2000e-004	0.0000	11.0385
Total	**4.2100e-003**	**5.9200e-003**	**0.0571**	**1.6000e-004**	**0.0140**	**1.0000e-004**	**0.0141**	**3.7300e-003**	**9.0000e-005**	**3.8200e-003**	**0.0000**	**11.0277**	**11.0277**	**5.2000e-004**	**0.0000**	**11.0385**

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	0.0541	0.5538	0.5273	7.7000e-004		0.0333	0.0333		0.0306	0.0306	0.0000	69.1286	69.1286	0.0219	0.0000	69.5879
Paving	1.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0553**	**0.5538**	**0.5273**	**7.7000e-004**		**0.0333**	**0.0333**		**0.0306**	**0.0306**	**0.0000**	**69.1286**	**69.1286**	**0.0219**	**0.0000**	**69.5879**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2100e-003	5.9200e-003	0.0571	1.6000e-004	0.0129	1.0000e-004	0.0130	3.4600e-003	9.0000e-005	3.5500e-003	0.0000	11.0277	11.0277	5.2000e-004	0.0000	11.0385
Total	**4.2100e-003**	**5.9200e-003**	**0.0571**	**1.6000e-004**	**0.0129**	**1.0000e-004**	**0.0130**	**3.4600e-003**	**9.0000e-005**	**3.5500e-003**	**0.0000**	**11.0277**	**11.0277**	**5.2000e-004**	**0.0000**	**11.0385**

3.11 Architectural Coating - 2019

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	4.0372					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.1884	0.1890	3.1000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	26.2134	26.2134	2.2100e-003	0.0000	26.2599
Total	**4.0645**	**0.1884**	**0.1890**	**3.1000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**26.2134**	**26.2134**	**2.2100e-003**	**0.0000**	**26.2599**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6300e-003	6.5100e-003	0.0628	1.8000e-004	0.0154	1.1000e-004	0.0155	4.1000e-003	1.0000e-004	4.2000e-003	0.0000	12.1304	12.1304	5.7000e-004	0.0000	12.1423
Total	**4.6300e-003**	**6.5100e-003**	**0.0628**	**1.8000e-004**	**0.0154**	**1.1000e-004**	**0.0155**	**4.1000e-003**	**1.0000e-004**	**4.2000e-003**	**0.0000**	**12.1304**	**12.1304**	**5.7000e-004**	**0.0000**	**12.1423**

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	4.0372					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.1884	0.1890	3.1000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	26.2134	26.2134	2.2100e-003	0.0000	26.2599
Total	**4.0645**	**0.1884**	**0.1890**	**3.1000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**26.2134**	**26.2134**	**2.2100e-003**	**0.0000**	**26.2599**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6300e-003	6.5100e-003	0.0628	1.8000e-004	0.0142	1.1000e-004	0.0143	3.8100e-003	1.0000e-004	3.9100e-003	0.0000	12.1304	12.1304	5.7000e-004	0.0000	12.1423
Total	**4.6300e-003**	**6.5100e-003**	**0.0628**	**1.8000e-004**	**0.0142**	**1.1000e-004**	**0.0143**	**3.8100e-003**	**1.0000e-004**	**3.9100e-003**	**0.0000**	**12.1304**	**12.1304**	**5.7000e-004**	**0.0000**	**12.1423**

Marina Plaza Project Santa Clara County,

Annual, Construction - Mitigated

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	644.00	Space	0.01	251,353.00	0
Other Asphalt Surfaces	28.21	1000sqft	0.65	28,209.00	0
Other Non-Asphalt Surfaces	49.38	1000sqft	1.13	49,379.00	0
Parking Lot	36.00	Space	0.26	11,479.00	0
Fast Food Restaurant w/o Drive Thru	2.80	1000sqft	0.06	2,800.00	0
Hotel	122.00	Room	0.59	87,432.00	0
Quality Restaurant	9.00	1000sqft	0.21	9,000.00	0
Apartments Low Rise	188.00	Dwelling Unit	1.97	276,371.00	542
Strip Mall	10.80	1000sqft	0.25	10,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Updated PD

Construction Phase - Calculated values

Off-road Equipment - More air compressors

Off-road Equipment - Cranes only onsite 4 months out of 18 month total, this is reflected.

Off-road Equipment - provided by applicant

Off-road Equipment - provided by applicant

Off-road Equipment - provided by applicant

Off-road Equipment - According to Equipment inputs

Off-road Equipment - equipment included in Demo sub-phase

Off-road Equipment - No reductions due to overlap in this period

Off-road Equipment - equipment accounted for in grading sub-phase

Off-road Equipment - Tractors as shown in Const_Equip in CalEEMod_Inputs

Off-road Equipment - Number reduced due to overlap with grading

Trips and VMT - Taken from Const_Equip

Site for demo debris is 15 mi away

Demolition -

Grading - According to Input Assumptions file

Architectural Coating - VOC Content for non-residential not specified on CalEEMod Inputs, left baselines

Area Coating - per CalEEMod arch coating methodology

Construction Off-road Equipment Mitigation - Tier 3/Level 3 DPF for equipment > 50 hp; BAAQMD BMPs for fugitive dust

Water Mitigation - CalGreen

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	219,659.00	75,441.00

tblArchitecturalCoating	ConstArea_Nonresidential_Interior	658,976.00	165,048.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	150.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	13.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	230.00	110.00
tblConstructionPhase	NumDays	230.00	520.00
tblConstructionPhase	NumDays	230.00	22.00
tblConstructionPhase	NumDays	20.00	54.00

tblConstructionPhase	NumDays	20.00	22.00
tblConstructionPhase	NumDays	20.00	175.00
tblConstructionPhase	NumDays	20.00	165.00
tblConstructionPhase	NumDays	20.00	77.00
tblConstructionPhase	NumDays	10.00	23.00
tblConstructionPhase	PhaseEndDate	4/16/2020	12/31/2019
tblConstructionPhase	PhaseEndDate	2/2/2018	9/15/2017
tblConstructionPhase	PhaseEndDate	2/14/2017	11/30/2016
tblConstructionPhase	PhaseEndDate	10/18/2017	9/15/2017
tblConstructionPhase	PhaseEndDate	5/4/2018	9/1/2017
tblConstructionPhase	PhaseEndDate	1/30/2020	12/31/2019
tblConstructionPhase	PhaseEndDate	1/2/2017	2/15/2017
tblConstructionPhase	PhaseStartDate	1/1/2020	9/15/2019
tblConstructionPhase	PhaseStartDate	9/2/2017	4/15/2017
tblConstructionPhase	PhaseStartDate	1/14/2017	11/1/2016
tblConstructionPhase	PhaseStartDate	2/16/2017	1/15/2017
tblConstructionPhase	PhaseStartDate	9/16/2017	1/15/2017
tblConstructionPhase	PhaseStartDate	10/16/2019	9/15/2019
tblConstructionPhase	PhaseStartDate	12/1/2016	1/15/2017
tblGrading	MaterialExported	0.00	105,000.00
tblLandUse	LandUseSquareFeet	257,600.00	251,353.00
tblLandUse	LandUseSquareFeet	28,210.00	28,209.00
tblLandUse	LandUseSquareFeet	49,380.00	49,379.00
tblLandUse	LandUseSquareFeet	14,400.00	11,479.00
tblLandUse	LandUseSquareFeet	177,144.00	87,432.00
tblLandUse	LandUseSquareFeet	188,000.00	276,371.00
tblLandUse	LotAcreage	5.80	0.01
tblLandUse	LotAcreage	0.32	0.26
tblLandUse	LotAcreage	4.07	0.59
tblLandUse	LotAcreage	11.75	1.97
tblLandUse	Population	538.00	542.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	HaulingTripLength	20.00	15.00
tblTripsAndVMT	HaulingTripNumber	349.00	352.00
tblTripsAndVMT	HaulingTripNumber	13,125.00	13,126.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	94.00	70.00
tblTripsAndVMT	VendorTripNumber	94.00	70.00
tblTripsAndVMT	VendorTripNumber	94.00	70.00
tblTripsAndVMT	WorkerTripNumber	18.00	40.00
tblTripsAndVMT	WorkerTripNumber	65.00	44.00
tblTripsAndVMT	WorkerTripNumber	15.00	44.00
tblTripsAndVMT	WorkerTripNumber	23.00	50.00
tblTripsAndVMT	WorkerTripNumber	323.00	180.00
tblTripsAndVMT	WorkerTripNumber	323.00	180.00
tblTripsAndVMT	WorkerTripNumber	323.00	180.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1095	1.1469	0.9290	1.1900e-003	0.0480	0.0558	0.1038	8.4600e-003	0.0520	0.0604	0.0000	108.7648	108.7648	0.0260	0.0000	109.3098
2017	1.1657	11.5553	9.7073	0.0175	1.2565	0.5291	1.7855	0.4875	0.4922	0.9798	0.0000	1,544.0273	1,544.0273	0.2287	0.0000	1,548.8295
2018	0.5391	3.9632	4.7230	8.6400e-003	0.2729	0.2298	0.5027	0.0738	0.2181	0.2919	0.0000	715.7744	715.7744	0.0808	0.0000	717.4720
2019	4.5028	3.5551	4.3774	8.1700e-003	0.2448	0.2007	0.4455	0.0661	0.1903	0.2563	0.0000	668.1778	668.1778	0.0853	0.0000	669.9681
Total	**6.3171**	**20.2204**	**19.7367**	**0.0355**	**1.8221**	**1.0154**	**2.8376**	**0.6358**	**0.9526**	**1.5884**	**0.0000**	**3,036.7442**	**3,036.7442**	**0.4207**	**0.0000**	**3,045.5794**

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	0.0303	0.5131	0.7271	1.1900e-003	0.0256	3.8900e-003	0.0295	5.0000e-003	3.8400e-003	8.8400e-003	0.0000	108.7647	108.7647	0.0260	0.0000	109.3096
2017	0.5183	6.7478	8.7815	0.0175	0.7135	0.0770	0.7905	0.2569	0.0743	0.3313	0.0000	1,544.0264	1,544.0264	0.2287	0.0000	1,548.8286
2018	0.2962	2.9289	4.7884	8.6400e-003	0.2524	0.0468	0.2992	0.0688	0.0458	0.1146	0.0000	715.7740	715.7740	0.0808	0.0000	717.4716
2019	4.2876	2.7693	4.5067	8.1700e-003	0.2264	0.0399	0.2663	0.0615	0.0392	0.1007	0.0000	668.1774	668.1774	0.0853	0.0000	669.9677
Total	**5.1325**	**12.9591**	**18.8036**	**0.0355**	**1.2179**	**0.1676**	**1.3855**	**0.3923**	**0.1631**	**0.5554**	**0.0000**	**3,036.7424**	**3,036.7424**	**0.4207**	**0.0000**	**3,045.5774**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**18.75**	**35.91**	**4.73**	**0.00**	**33.16**	**83.50**	**51.17**	**38.31**	**82.88**	**65.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2016	1/13/2017	5	54	
2	Demolition Hauling	Demolition	11/1/2016	11/30/2016	5	22	
3	Site Preparation	Site Preparation	1/15/2017	2/15/2017	5	23	
4	Grading	Grading	1/15/2017	9/15/2017	5	175	
5	Grading Hauling	Grading	1/15/2017	9/1/2017	5	165	
6	Building Construction A	Building Construction	4/15/2017	9/15/2017	5	110	
7	Building Construction B	Building Construction	9/16/2017	9/13/2019	5	520	
8	Building Construction C	Building Construction	9/14/2019	10/15/2019	5	22	
9	Paving	Paving	9/15/2019	12/31/2019	5	77	
10	Architectural Coating	Architectural Coating	9/15/2019	12/31/2019	5	77	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 437.5

Acres of Paving: 0

Residential Indoor: 559,651; Residential Outdoor: 186,550; Non-Residential Indoor: 165,048; Non-Residential Outdoor: 75,441

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	4	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Demolition Hauling	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition Hauling	Excavators	0	8.00	162	0.38
Demolition Hauling	Rubber Tired Dozers	0	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading Hauling	Excavators	0	8.00	162	0.38
Grading Hauling	Graders	0	8.00	174	0.41
Grading Hauling	Rubber Tired Dozers	0	8.00	255	0.40
Grading Hauling	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction A	Cranes	1	1.00	226	0.29
Building Construction A	Forklifts	4	8.00	89	0.20
Building Construction A	Generator Sets	2	8.00	84	0.74
Building Construction A	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction A	Welders	1	8.00	46	0.45
Building Construction B	Cranes	1	1.00	226	0.29
Building Construction B	Forklifts	4	8.00	89	0.20
Building Construction B	Generator Sets	2	8.00	84	0.74

Building Construction B	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction B	Welders	1	8.00	46	0.45
Building Construction C	Cranes	1	1.00	226	0.29
Building Construction C	Forklifts	4	8.00	89	0.20
Building Construction C	Generator Sets	2	8.00	84	0.74
Building Construction C	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction C	Welders	1	8.00	46	0.45
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	1	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Architectural Coating	Air Compressors	2	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	7	40.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition Hauling	0	0.00	0.00	352.00	12.40	7.30	15.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	44.00	4.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	50.00	4.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Hauling	0	0.00	0.00	13,126.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction A	8	180.00	70.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction B	11	180.00	70.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction C	9	180.00	70.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	40.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	44.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1029	1.1019	0.8461	9.9000e-004		0.0552	0.0552		0.0514	0.0514	0.0000	92.5895	92.5895	0.0255	0.0000	93.1251
Total	**0.1029**	**1.1019**	**0.8461**	**9.9000e-004**		**0.0552**	**0.0552**		**0.0514**	**0.0514**	**0.0000**	**92.5895**	**92.5895**	**0.0255**	**0.0000**	**93.1251**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2800e-003	4.6100e-003	0.0447	9.0000e-005	8.0100e-003	6.0000e-005	8.0800e-003	2.1300e-003	6.0000e-005	2.1900e-003	0.0000	7.0597	7.0597	3.8000e-004	0.0000	7.0676
Total	**3.2800e-003**	**4.6100e-003**	**0.0447**	**9.0000e-005**	**8.0100e-003**	**6.0000e-005**	**8.0800e-003**	**2.1300e-003**	**6.0000e-005**	**2.1900e-003**	**0.0000**	**7.0597**	**7.0597**	**3.8000e-004**	**0.0000**	**7.0676**

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	0.0237	0.4682	0.6442	9.9000e-004		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	92.5894	92.5894	0.0255	0.0000	93.1250
Total	**0.0237**	**0.4682**	**0.6442**	**9.9000e-004**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**92.5894**	**92.5894**	**0.0255**	**0.0000**	**93.1250**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2800e-003	4.6100e-003	0.0447	9.0000e-005	7.3900e-003	6.0000e-005	7.4500e-003	1.9800e-003	6.0000e-005	2.0400e-003	0.0000	7.0597	7.0597	3.8000e-004	0.0000	7.0676
Total	**3.2800e-003**	**4.6100e-003**	**0.0447**	**9.0000e-005**	**7.3900e-003**	**6.0000e-005**	**7.4500e-003**	**1.9800e-003**	**6.0000e-005**	**2.0400e-003**	**0.0000**	**7.0597**	**7.0597**	**3.8000e-004**	**0.0000**	**7.0676**

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0221	0.2336	0.1866	2.3000e-004		0.0116	0.0116		0.0108	0.0108	0.0000	20.7642	20.7642	5.7700e-003	0.0000	20.8855
Total	**0.0221**	**0.2336**	**0.1866**	**2.3000e-004**		**0.0116**	**0.0116**		**0.0108**	**0.0108**	**0.0000**	**20.7642**	**20.7642**	**5.7700e-003**	**0.0000**	**20.8855**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	9.4000e-004	9.0900e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.5431	1.5431	8.0000e-005	0.0000	1.5448
Total	**6.7000e-004**	**9.4000e-004**	**9.0900e-003**	**2.0000e-005**	**1.8200e-003**	**1.0000e-005**	**1.8300e-003**	**4.8000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.5431**	**1.5431**	**8.0000e-005**	**0.0000**	**1.5448**

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	5.3900e-003	0.1064	0.1464	2.3000e-004		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	20.7642	20.7642	5.7700e-003	0.0000	20.8855
Total	**5.3900e-003**	**0.1064**	**0.1464**	**2.3000e-004**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**20.7642**	**20.7642**	**5.7700e-003**	**0.0000**	**20.8855**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	9.4000e-004	9.0900e-003	2.0000e-005	1.6800e-003	1.0000e-005	1.6900e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.5431	1.5431	8.0000e-005	0.0000	1.5448
Total	**6.7000e-004**	**9.4000e-004**	**9.0900e-003**	**2.0000e-005**	**1.6800e-003**	**1.0000e-005**	**1.6900e-003**	**4.5000e-004**	**1.0000e-005**	**4.6000e-004**	**0.0000**	**1.5431**	**1.5431**	**8.0000e-005**	**0.0000**	**1.5448**

3.3 Demolition Hauling - 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					0.0378	0.0000	0.0378	5.7200e-003	0.0000	5.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0378**	**0.0000**	**0.0378**	**5.7200e-003**	**0.0000**	**5.7200e-003**	**0.0000**	**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	3.3300e-003	0.0403	0.0382	1.0000e-004	2.2300e-003	5.2000e-004	2.7500e-003	6.1000e-004	4.7000e-004	1.0900e-003	0.0000	9.1156	9.1156	7.0000e-005	0.0000	9.1171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	**3.3300e-003**	**0.0403**	**0.0382**	**1.0000e-004**	**2.2300e-003**	**5.2000e-004**	**2.7500e-003**	**6.1000e-004**	**4.7000e-004**	**1.0900e-003**	**0.0000**	**9.1156**	**9.1156**	**7.0000e-005**	**0.0000**	**9.1171**

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					0.0162	0.0000	0.0162	2.4500e-003	0.0000	2.4500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0162**	**0.0000**	**0.0162**	**2.4500e-003**	**0.0000**	**2.4500e-003**	**0.0000**	**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	3.3300e-003	0.0403	0.0382	1.0000e-004	2.0800e-003	5.2000e-004	2.6000e-003	5.8000e-004	4.7000e-004	1.0500e-003	0.0000	9.1156	9.1156	7.0000e-005	0.0000	9.1171
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	**3.3300e-003**	**0.0403**	**0.0382**	**1.0000e-004**	**2.0800e-003**	**5.2000e-004**	**2.6000e-003**	**5.8000e-004**	**4.7000e-004**	**1.0500e-003**	**0.0000**	**9.1156**	**9.1156**	**7.0000e-005**	**0.0000**	**9.1171**

3.4 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1385	0.0000	0.1385	0.0761	0.0000	0.0761	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0420	0.4435	0.3388	3.5000e-004		0.0246	0.0246		0.0227	0.0227	0.0000	32.2689	32.2689	9.8900e-003	0.0000	32.4765
Total	**0.0420**	**0.4435**	**0.3388**	**3.5000e-004**	**0.1385**	**0.0246**	**0.1631**	**0.0761**	**0.0227**	**0.0988**	**0.0000**	**32.2689**	**32.2689**	**9.8900e-003**	**0.0000**	**32.4765**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	4.1100e-003	5.7300e-003	1.0000e-005	3.0000e-004	6.0000e-005	3.6000e-004	9.0000e-005	5.0000e-005	1.4000e-004	0.0000	0.9777	0.9777	1.0000e-005	0.0000	0.9779
Worker	1.6900e-003	2.3700e-003	0.0230	5.0000e-005	4.6100e-003	4.0000e-005	4.6400e-003	1.2300e-003	3.0000e-005	1.2600e-003	0.0000	3.9041	3.9041	2.0000e-004	0.0000	3.9083
Total	**2.1700e-003**	**6.4800e-003**	**0.0287**	**6.0000e-005**	**4.9100e-003**	**1.0000e-004**	**5.0000e-003**	**1.3200e-003**	**8.0000e-005**	**1.4000e-003**	**0.0000**	**4.8818**	**4.8818**	**2.1000e-004**	**0.0000**	**4.8862**

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					0.0592	0.0000	0.0592	0.0326	0.0000	0.0326	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.4600e-003	0.1758	0.2153	3.5000e-004		1.3800e-003	1.3800e-003		1.3800e-003	1.3800e-003	0.0000	32.2689	32.2689	9.8900e-003	0.0000	32.4765
Total	**8.4600e-003**	**0.1758**	**0.2153**	**3.5000e-004**	**0.0592**	**1.3800e-003**	**0.0606**	**0.0326**	**1.3800e-003**	**0.0339**	**0.0000**	**32.2689**	**32.2689**	**9.8900e-003**	**0.0000**	**32.4765**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8000e-004	4.1100e-003	5.7300e-003	1.0000e-005	2.8000e-004	6.0000e-005	3.4000e-004	8.0000e-005	5.0000e-005	1.4000e-004	0.0000	0.9777	0.9777	1.0000e-005	0.0000	0.9779
Worker	1.6900e-003	2.3700e-003	0.0230	5.0000e-005	4.2500e-003	4.0000e-005	4.2800e-003	1.1400e-003	3.0000e-005	1.1700e-003	0.0000	3.9041	3.9041	2.0000e-004	0.0000	3.9083
Total	**2.1700e-003**	**6.4800e-003**	**0.0287**	**6.0000e-005**	**4.5300e-003**	**1.0000e-004**	**4.6200e-003**	**1.2200e-003**	**8.0000e-005**	**1.3100e-003**	**0.0000**	**4.8818**	**4.8818**	**2.1000e-004**	**0.0000**	**4.8862**

3.5 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7589	0.0000	0.7589	0.3147	0.0000	0.3147	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5614	6.3556	4.3049	5.6700e-003		0.3103	0.3103		0.2855	0.2855	0.0000	526.4103	526.4103	0.1613	0.0000	529.7974
Total	**0.5614**	**6.3556**	**4.3049**	**5.6700e-003**	**0.7589**	**0.3103**	**1.0692**	**0.3147**	**0.2855**	**0.6002**	**0.0000**	**526.4103**	**526.4103**	**0.1613**	**0.0000**	**529.7974**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6400e-003	0.0313	0.0436	8.0000e-005	2.2600e-003	4.5000e-004	2.7100e-003	6.5000e-004	4.2000e-004	1.0600e-003	0.0000	7.4391	7.4391	6.0000e-005	0.0000	7.4403
Worker	0.0146	0.0205	0.1988	4.6000e-004	0.0398	3.0000e-004	0.0401	0.0106	2.8000e-004	0.0109	0.0000	33.7560	33.7560	1.7100e-003	0.0000	33.7920
Total	**0.0182**	**0.0518**	**0.2424**	**5.4000e-004**	**0.0421**	**7.5000e-004**	**0.0429**	**0.0112**	**7.0000e-004**	**0.0119**	**0.0000**	**41.1951**	**41.1951**	**1.7700e-003**	**0.0000**	**41.2323**

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					0.3244	0.0000	0.3244	0.1345	0.0000	0.1345	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1390	2.7575	3.5250	5.6700e-003		0.0190	0.0190		0.0190	0.0190	0.0000	526.4096	526.4096	0.1613	0.0000	529.7967
Total	**0.1390**	**2.7575**	**3.5250**	**5.6700e-003**	**0.3244**	**0.0190**	**0.3434**	**0.1345**	**0.0190**	**0.1535**	**0.0000**	**526.4096**	**526.4096**	**0.1613**	**0.0000**	**529.7967**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6400e-003	0.0313	0.0436	8.0000e-005	2.1100e-003	4.5000e-004	2.5700e-003	6.1000e-004	4.2000e-004	1.0300e-003	0.0000	7.4391	7.4391	6.0000e-005	0.0000	7.4403
Worker	0.0146	0.0205	0.1988	4.6000e-004	0.0367	3.0000e-004	0.0370	9.8300e-003	2.8000e-004	0.0101	0.0000	33.7560	33.7560	1.7100e-003	0.0000	33.7920
Total	**0.0182**	**0.0518**	**0.2424**	**5.4000e-004**	**0.0388**	**7.5000e-004**	**0.0396**	**0.0104**	**7.0000e-004**	**0.0111**	**0.0000**	**41.1951**	**41.1951**	**1.7700e-003**	**0.0000**	**41.2323**

3.6 Grading Hauling - 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					5.9400e-003	0.0000	5.9400e-003	9.0000e-004	0.0000	9.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.9400e-003**	**0.0000**	**5.9400e-003**	**9.0000e-004**	**0.0000**	**9.0000e-004**	**0.0000**	**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	0.1279	1.7552	1.4290	4.9100e-003	0.1109	0.0225	0.1334	0.0305	0.0207	0.0511	0.0000	441.9766	441.9766	3.2100e-003	0.0000	442.0441
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	**0.1279**	**1.7552**	**1.4290**	**4.9100e-003**	**0.1109**	**0.0225**	**0.1334**	**0.0305**	**0.0207**	**0.0511**	**0.0000**	**441.9766**	**441.9766**	**3.2100e-003**	**0.0000**	**442.0441**

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					2.5400e-003	0.0000	2.5400e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.5400e-003**	**0.0000**	**2.5400e-003**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**0.0000**	**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	0.1279	1.7552	1.4290	4.9100e-003	0.1034	0.0225	0.1259	0.0286	0.0207	0.0493	0.0000	441.9766	441.9766	3.2100e-003	0.0000	442.0441
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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	**0.1279**	**1.7552**	**1.4290**	**4.9100e-003**	**0.1034**	**0.0225**	**0.1259**	**0.0286**	**0.0207**	**0.0493**	**0.0000**	**441.9766**	**441.9766**	**3.2100e-003**	**0.0000**	**442.0441**

3.7 Building Construction A - 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	0.1411	1.0415	0.8140	1.2400e-003		0.0756	0.0756		0.0727	0.0727	0.0000	107.3106	107.3106	0.0179	0.0000	107.6871
Total	**0.1411**	**1.0415**	**0.8140**	**1.2400e-003**		**0.0756**	**0.0756**		**0.0727**	**0.0727**	**0.0000**	**107.3106**	**107.3106**	**0.0179**	**0.0000**	**107.6871**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0400	0.3442	0.4797	9.1000e-004	0.0249	4.9800e-003	0.0298	7.1300e-003	4.5800e-003	0.0117	0.0000	81.8300	81.8300	6.3000e-004	0.0000	81.8433
Worker	0.0330	0.0464	0.4498	1.0400e-003	0.0901	6.9000e-004	0.0908	0.0240	6.3000e-004	0.0246	0.0000	76.3851	76.3851	3.8800e-003	0.0000	76.4665
Total	**0.0730**	**0.3906**	**0.9295**	**1.9500e-003**	**0.1150**	**5.6700e-003**	**0.1207**	**0.0311**	**5.2100e-003**	**0.0363**	**0.0000**	**158.2151**	**158.2151**	**4.5100e-003**	**0.0000**	**158.3098**

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	0.0513	0.6339	0.8276	1.2400e-003		0.0126	0.0126		0.0126	0.0126	0.0000	107.3104	107.3104	0.0179	0.0000	107.6870
Total	**0.0513**	**0.6339**	**0.8276**	**1.2400e-003**		**0.0126**	**0.0126**		**0.0126**	**0.0126**	**0.0000**	**107.3104**	**107.3104**	**0.0179**	**0.0000**	**107.6870**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0400	0.3442	0.4797	9.1000e-004	0.0233	4.9800e-003	0.0282	6.7400e-003	4.5800e-003	0.0113	0.0000	81.8300	81.8300	6.3000e-004	0.0000	81.8433
Worker	0.0330	0.0464	0.4498	1.0400e-003	0.0831	6.9000e-004	0.0838	0.0223	6.3000e-004	0.0229	0.0000	76.3851	76.3851	3.8800e-003	0.0000	76.4665
Total	**0.0730**	**0.3906**	**0.9295**	**1.9500e-003**	**0.1064**	**5.6700e-003**	**0.1121**	**0.0290**	**5.2100e-003**	**0.0342**	**0.0000**	**158.2151**	**158.2151**	**4.5100e-003**	**0.0000**	**158.3098**

3.8 Building Construction B - 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	0.1274	1.0097	0.7907	1.1500e-003		0.0741	0.0741		0.0703	0.0703	0.0000	101.5877	101.5877	0.0209	0.0000	102.0273
Total	**0.1274**	**1.0097**	**0.7907**	**1.1500e-003**		**0.0741**	**0.0741**		**0.0703**	**0.0703**	**0.0000**	**101.5877**	**101.5877**	**0.0209**	**0.0000**	**102.0273**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0273	0.2347	0.3270	6.2000e-004	0.0170	3.3900e-003	0.0204	4.8600e-003	3.1200e-003	7.9800e-003	0.0000	55.7932	55.7932	4.3000e-004	0.0000	55.8023
Worker	0.0225	0.0317	0.3067	7.1000e-004	0.0615	4.7000e-004	0.0619	0.0163	4.3000e-004	0.0168	0.0000	52.0807	52.0807	2.6400e-003	0.0000	52.1362
Total	**0.0498**	**0.2663**	**0.6337**	**1.3300e-003**	**0.0784**	**3.8600e-003**	**0.0823**	**0.0212**	**3.5500e-003**	**0.0248**	**0.0000**	**107.8739**	**107.8739**	**3.0700e-003**	**0.0000**	**107.9385**

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	0.0424	0.6029	0.7948	1.1500e-003		0.0104	0.0104		0.0104	0.0104	0.0000	101.5875	101.5875	0.0209	0.0000	102.0272
Total	**0.0424**	**0.6029**	**0.7948**	**1.1500e-003**		**0.0104**	**0.0104**		**0.0104**	**0.0104**	**0.0000**	**101.5875**	**101.5875**	**0.0209**	**0.0000**	**102.0272**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0273	0.2347	0.3270	6.2000e-004	0.0159	3.3900e-003	0.0193	4.5900e-003	3.1200e-003	7.7100e-003	0.0000	55.7932	55.7932	4.3000e-004	0.0000	55.8023
Worker	0.0225	0.0317	0.3067	7.1000e-004	0.0567	4.7000e-004	0.0571	0.0152	4.3000e-004	0.0156	0.0000	52.0807	52.0807	2.6400e-003	0.0000	52.1362
Total	**0.0498**	**0.2663**	**0.6337**	**1.3300e-003**	**0.0725**	**3.8600e-003**	**0.0764**	**0.0198**	**3.5500e-003**	**0.0233**	**0.0000**	**107.8739**	**107.8739**	**3.0700e-003**	**0.0000**	**107.9385**

3.8 Building Construction B - 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	0.3828	3.1247	2.6936	4.0000e-003		0.2173	0.2173		0.2066	0.2066	0.0000	350.5147	350.5147	0.0709	0.0000	352.0036
Total	**0.3828**	**3.1247**	**2.6936**	**4.0000e-003**		**0.2173**	**0.2173**		**0.2066**	**0.2066**	**0.0000**	**350.5147**	**350.5147**	**0.0709**	**0.0000**	**352.0036**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0860	0.7393	1.0719	2.1700e-003	0.0590	0.0109	0.0699	0.0169	0.0101	0.0270	0.0000	190.7671	190.7671	1.4800e-003	0.0000	190.7981
Worker	0.0703	0.0992	0.9575	2.4800e-003	0.2139	1.5800e-003	0.2155	0.0569	1.4600e-003	0.0583	0.0000	174.4926	174.4926	8.4600e-003	0.0000	174.6702
Total	**0.1563**	**0.8385**	**2.0294**	**4.6500e-003**	**0.2729**	**0.0125**	**0.2854**	**0.0738**	**0.0115**	**0.0853**	**0.0000**	**365.2597**	**365.2597**	**9.9400e-003**	**0.0000**	**365.4683**

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	0.1399	2.0904	2.7590	4.0000e-003		0.0343	0.0343		0.0343	0.0343	0.0000	350.5143	350.5143	0.0709	0.0000	352.0032
Total	**0.1399**	**2.0904**	**2.7590**	**4.0000e-003**		**0.0343**	**0.0343**		**0.0343**	**0.0343**	**0.0000**	**350.5143**	**350.5143**	**0.0709**	**0.0000**	**352.0032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0860	0.7393	1.0719	2.1700e-003	0.0552	0.0109	0.0661	0.0160	0.0101	0.0260	0.0000	190.7671	190.7671	1.4800e-003	0.0000	190.7981
Worker	0.0703	0.0992	0.9575	2.4800e-003	0.1972	1.5800e-003	0.1988	0.0528	1.4600e-003	0.0543	0.0000	174.4926	174.4926	8.4600e-003	0.0000	174.6702
Total	**0.1563**	**0.8385**	**2.0294**	**4.6500e-003**	**0.2524**	**0.0125**	**0.2649**	**0.0688**	**0.0115**	**0.0803**	**0.0000**	**365.2597**	**365.2597**	**9.9400e-003**	**0.0000**	**365.4683**

3.8 Building Construction B - 2019

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	0.2379	2.0022	1.8727	2.8200e-003		0.1320	0.1320		0.1255	0.1255	0.0000	245.0400	245.0400	0.0486	0.0000	246.0612
Total	**0.2379**	**2.0022**	**1.8727**	**2.8200e-003**		**0.1320**	**0.1320**		**0.1255**	**0.1255**	**0.0000**	**245.0400**	**245.0400**	**0.0486**	**0.0000**	**246.0612**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0550	0.4757	0.7165	1.5200e-003	0.0416	7.1600e-003	0.0487	0.0119	6.5900e-003	0.0185	0.0000	132.1483	132.1483	1.0200e-003	0.0000	132.1697
Worker	0.0453	0.0636	0.6135	1.7400e-003	0.1508	1.0900e-003	0.1519	0.0401	1.0100e-003	0.0411	0.0000	118.5831	118.5831	5.5400e-003	0.0000	118.6994
Total	**0.1003**	**0.5394**	**1.3300**	**3.2600e-003**	**0.1924**	**8.2500e-003**	**0.2006**	**0.0520**	**7.6000e-003**	**0.0596**	**0.0000**	**250.7314**	**250.7314**	**6.5600e-003**	**0.0000**	**250.8691**

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	0.0934	1.4684	1.9403	2.8200e-003		0.0229	0.0229		0.0229	0.0229	0.0000	245.0397	245.0397	0.0486	0.0000	246.0609
Total	**0.0934**	**1.4684**	**1.9403**	**2.8200e-003**		**0.0229**	**0.0229**		**0.0229**	**0.0229**	**0.0000**	**245.0397**	**245.0397**	**0.0486**	**0.0000**	**246.0609**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0550	0.4757	0.7165	1.5200e-003	0.0389	7.1600e-003	0.0461	0.0113	6.5900e-003	0.0179	0.0000	132.1483	132.1483	1.0200e-003	0.0000	132.1697
Worker	0.0453	0.0636	0.6135	1.7400e-003	0.1390	1.0900e-003	0.1401	0.0372	1.0100e-003	0.0382	0.0000	118.5831	118.5831	5.5400e-003	0.0000	118.6994
Total	**0.1003**	**0.5394**	**1.3300**	**3.2600e-003**	**0.1779**	**8.2500e-003**	**0.1862**	**0.0485**	**7.6000e-003**	**0.0561**	**0.0000**	**250.7314**	**250.7314**	**6.5600e-003**	**0.0000**	**250.8691**

3.9 Building Construction C - 2019

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	0.0240	0.1944	0.1796	2.8000e-004		0.0128	0.0128		0.0122	0.0122	0.0000	23.9276	23.9276	4.1100e-003	0.0000	24.0140
Total	**0.0240**	**0.1944**	**0.1796**	**2.8000e-004**		**0.0128**	**0.0128**		**0.0122**	**0.0122**	**0.0000**	**23.9276**	**23.9276**	**4.1100e-003**	**0.0000**	**24.0140**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5800e-003	0.0569	0.0857	1.8000e-004	4.9700e-003	8.6000e-004	5.8300e-003	1.4300e-003	7.9000e-004	2.2100e-003	0.0000	15.8003	15.8003	1.2000e-004	0.0000	15.8029
Worker	5.4200e-003	7.6100e-003	0.0734	2.1000e-004	0.0180	1.3000e-004	0.0182	4.7900e-003	1.2000e-004	4.9100e-003	0.0000	14.1784	14.1784	6.6000e-004	0.0000	14.1923
Total	**0.0120**	**0.0645**	**0.1590**	**3.9000e-004**	**0.0230**	**9.9000e-004**	**0.0240**	**6.2200e-003**	**9.1000e-004**	**7.1200e-003**	**0.0000**	**29.9788**	**29.9788**	**7.8000e-004**	**0.0000**	**29.9952**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.7100e-003	0.1422	0.1869	2.8000e-004		2.3900e-003	2.3900e-003		2.3900e-003	2.3900e-003	0.0000	23.9275	23.9275	4.1100e-003	0.0000	24.0139
Total	**9.7100e-003**	**0.1422**	**0.1869**	**2.8000e-004**		**2.3900e-003**	**2.3900e-003**		**2.3900e-003**	**2.3900e-003**	**0.0000**	**23.9275**	**23.9275**	**4.1100e-003**	**0.0000**	**24.0139**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5800e-003	0.0569	0.0857	1.8000e-004	4.6500e-003	8.6000e-004	5.5100e-003	1.3500e-003	7.9000e-004	2.1300e-003	0.0000	15.8003	15.8003	1.2000e-004	0.0000	15.8029
Worker	5.4200e-003	7.6100e-003	0.0734	2.1000e-004	0.0166	1.3000e-004	0.0168	4.4500e-003	1.2000e-004	4.5700e-003	0.0000	14.1784	14.1784	6.6000e-004	0.0000	14.1923
Total	**0.0120**	**0.0645**	**0.1590**	**3.9000e-004**	**0.0213**	**9.9000e-004**	**0.0223**	**5.8000e-003**	**9.1000e-004**	**6.7000e-003**	**0.0000**	**29.9788**	**29.9788**	**7.8000e-004**	**0.0000**	**29.9952**

3.10 Paving - 2019

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	0.0541	0.5538	0.5273	7.7000e-004		0.0333	0.0333		0.0306	0.0306	0.0000	69.1286	69.1286	0.0219	0.0000	69.5879
Paving	1.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0553**	**0.5538**	**0.5273**	**7.7000e-004**		**0.0333**	**0.0333**		**0.0306**	**0.0306**	**0.0000**	**69.1286**	**69.1286**	**0.0219**	**0.0000**	**69.5879**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2100e-003	5.9200e-003	0.0571	1.6000e-004	0.0140	1.0000e-004	0.0141	3.7300e-003	9.0000e-005	3.8200e-003	0.0000	11.0277	11.0277	5.2000e-004	0.0000	11.0385
Total	**4.2100e-003**	**5.9200e-003**	**0.0571**	**1.6000e-004**	**0.0140**	**1.0000e-004**	**0.0141**	**3.7300e-003**	**9.0000e-005**	**3.8200e-003**	**0.0000**	**11.0277**	**11.0277**	**5.2000e-004**	**0.0000**	**11.0385**

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	0.0189	0.4031	0.5826	7.7000e-004		3.7300e-003	3.7300e-003		3.7300e-003	3.7300e-003	0.0000	69.1286	69.1286	0.0219	0.0000	69.5879
Paving	1.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0201**	**0.4031**	**0.5826**	**7.7000e-004**		**3.7300e-003**	**3.7300e-003**		**3.7300e-003**	**3.7300e-003**	**0.0000**	**69.1286**	**69.1286**	**0.0219**	**0.0000**	**69.5879**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2100e-003	5.9200e-003	0.0571	1.6000e-004	0.0129	1.0000e-004	0.0130	3.4600e-003	9.0000e-005	3.5500e-003	0.0000	11.0277	11.0277	5.2000e-004	0.0000	11.0385
Total	**4.2100e-003**	**5.9200e-003**	**0.0571**	**1.6000e-004**	**0.0129**	**1.0000e-004**	**0.0130**	**3.4600e-003**	**9.0000e-005**	**3.5500e-003**	**0.0000**	**11.0277**	**11.0277**	**5.2000e-004**	**0.0000**	**11.0385**

3.11 Architectural Coating - 2019

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	4.0372					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0274	0.1884	0.1890	3.1000e-004		0.0132	0.0132		0.0132	0.0132	0.0000	26.2134	26.2134	2.2100e-003	0.0000	26.2599
Total	**4.0645**	**0.1884**	**0.1890**	**3.1000e-004**		**0.0132**	**0.0132**		**0.0132**	**0.0132**	**0.0000**	**26.2134**	**26.2134**	**2.2100e-003**	**0.0000**	**26.2599**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6300e-003	6.5100e-003	0.0628	1.8000e-004	0.0154	1.1000e-004	0.0155	4.1000e-003	1.0000e-004	4.2000e-003	0.0000	12.1304	12.1304	5.7000e-004	0.0000	12.1423
Total	**4.6300e-003**	**6.5100e-003**	**0.0628**	**1.8000e-004**	**0.0154**	**1.1000e-004**	**0.0155**	**4.1000e-003**	**1.0000e-004**	**4.2000e-003**	**0.0000**	**12.1304**	**12.1304**	**5.7000e-004**	**0.0000**	**12.1423**

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	4.0372					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.1393	0.1881	3.1000e-004		1.4600e-003	1.4600e-003		1.4600e-003	1.4600e-003	0.0000	26.2134	26.2134	2.2100e-003	0.0000	26.2599
Total	**4.0433**	**0.1393**	**0.1881**	**3.1000e-004**		**1.4600e-003**	**1.4600e-003**		**1.4600e-003**	**1.4600e-003**	**0.0000**	**26.2134**	**26.2134**	**2.2100e-003**	**0.0000**	**26.2599**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6300e-003	6.5100e-003	0.0628	1.8000e-004	0.0142	1.1000e-004	0.0143	3.8100e-003	1.0000e-004	3.9100e-003	0.0000	12.1304	12.1304	5.7000e-004	0.0000	12.1423
Total	**4.6300e-003**	**6.5100e-003**	**0.0628**	**1.8000e-004**	**0.0142**	**1.1000e-004**	**0.0143**	**3.8100e-003**	**1.0000e-004**	**3.9100e-003**	**0.0000**	**12.1304**	**12.1304**	**5.7000e-004**	**0.0000**	**12.1423**

Marina Plaza Project Santa Clara County,

Annual, Existing 2016

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	1.95	1000sqft	0.04	1,950.00	0
Other Non-Asphalt Surfaces	0.31	acre	0.31	13,693.00	0
Parking Lot	3.69	acre	3.69	160,644.00	0
Quality Restaurant	11.50	1000sqft	0.26	11,500.00	0
Strip Mall	1.24	1000sqft	0.03	1,240.00	0
Supermarket	34.00	1000sqft	0.78	34,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - from F&P

Construction Phase - Calculated values

Off-road Equipment - More air compressors

Off-road Equipment - Cranes only onsite 4 months out of 18 month total, this is reflected.

Trips and VMT - Taken from Const_Equip

Site for demo debris is 15 mi away

Demolition -

Grading -

Architectural Coating - VOC Content for non-residential not specified on CalEEMod Inputs, left baselines

Vechicle Emission Factors - See CalEEMod Input sheet

Vechicle Emission Factors - See CalEEMod Input Sheet

Vechicle Emission Factors - See CalEEMod Imputs Excel Spreadsheet

Area Coating - per CalEEMod arch coating methodology

Energy Use - historical data

Water And Wastewater - CalEEMod Input File Calcs

Solid Waste - Based on GP

Construction Off-road Equipment Mitigation - BAAQMD BMPs for fugitive dust

Water Mitigation - CalGreen

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	33,601.00	38,731.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	100,803.00	116,193.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblLandUse	LandUseSquareFeet	13,503.60	13,693.00
tblLandUse	LandUseSquareFeet	160,736.40	160,644.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblSolidWaste	SolidWasteGenerationRate	21.06	5.00
tblSolidWaste	SolidWasteGenerationRate	10.49	20.00
tblSolidWaste	SolidWasteGenerationRate	1.30	2.00
tblSolidWaste	SolidWasteGenerationRate	191.76	59.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblVehicleEF	HHD	0.02	3.2340e-003

tblVehicleEF	HHD	0.02	3.2340e-003
tblVehicleEF	HHD	0.02	3.2340e-003
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LHD1	0.03	4.2920e-003
tblVehicleEF	LHD1	0.03	4.2920e-003
tblVehicleEF	LHD1	0.03	4.2920e-003
tblVehicleEF	LHD2	4.4590e-003	6.4600e-004
tblVehicleEF	LHD2	4.4590e-003	6.4600e-004
tblVehicleEF	LHD2	4.4590e-003	6.4600e-004
tblVehicleEF	MCY	6.0120e-003	7.9120e-003
tblVehicleEF	MCY	6.0120e-003	7.9120e-003
tblVehicleEF	MCY	6.0120e-003	7.9120e-003
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MH	1.7630e-003	0.00
tblVehicleEF	MH	1.7630e-003	0.00
tblVehicleEF	MH	1.7630e-003	0.00
tblVehicleEF	MHD	0.01	1.8280e-003
tblVehicleEF	MHD	0.01	1.8280e-003
tblVehicleEF	MHD	0.01	1.8280e-003
tblVehicleEF	OBUS	1.7740e-003	0.00

tblVehicleEF	OBUS	1.7740e-003	0.00
tblVehicleEF	OBUS	1.7740e-003	0.00
tblVehicleEF	SBUS	5.2500e-004	0.00
tblVehicleEF	SBUS	5.2500e-004	0.00
tblVehicleEF	SBUS	5.2500e-004	0.00
tblVehicleEF	UBUS	1.2720e-003	0.00
tblVehicleEF	UBUS	1.2720e-003	0.00
tblVehicleEF	UBUS	1.2720e-003	0.00
tblVehicleTrips	ST_TR	8.96	8.10
tblVehicleTrips	ST_TR	94.36	144.56
tblVehicleTrips	ST_TR	42.04	67.18
tblVehicleTrips	ST_TR	177.59	161.57
tblVehicleTrips	SU_TR	1.55	1.40
tblVehicleTrips	SU_TR	72.16	120.35
tblVehicleTrips	SU_TR	20.43	34.26
tblVehicleTrips	SU_TR	166.44	151.43
tblVehicleTrips	WD_TR	36.13	32.66
tblVehicleTrips	WD_TR	89.95	116.07
tblVehicleTrips	WD_TR	44.32	57.97
tblVehicleTrips	WD_TR	102.24	93.02
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00

tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	244,687.05	89,680.50
tblWater	IndoorWaterUseRate	3,490,637.69	4,340,215.00
tblWater	IndoorWaterUseRate	91,849.93	30,867.32
tblWater	IndoorWaterUseRate	4,191,119.31	1,324,147.00
tblWater	OutdoorWaterUseRate	46,607.06	17,082.00
tblWater	OutdoorWaterUseRate	222,806.66	277,035.00
tblWater	OutdoorWaterUseRate	56,295.12	18,918.68
tblWater	OutdoorWaterUseRate	129,622.25	40,953.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9061	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	1.0000e-003
Energy	0.0180	0.1640	0.1378	9.8000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	784.0540	784.0540	0.0308	8.9400e-003	787.4717
Mobile	2.3919	1.7477	16.7139	0.0271	2.2568	0.0233	2.2802	0.6002	0.0214	0.6216	0.0000	2,057.1417	2,057.1417	0.1067	0.0000	2,059.3825
Waste						0.0000	0.0000		0.0000	0.0000	17.4572	0.0000	17.4572	1.0317	0.0000	39.1228
Water						0.0000	0.0000		0.0000	0.0000	2.0467	9.4666	11.5133	7.4700e-003	4.5400e-003	13.0775
Total	**3.3160**	**1.9117**	**16.8522**	**0.0281**	**2.2568**	**0.0358**	**2.2926**	**0.6002**	**0.0339**	**0.6341**	**19.5039**	**2,850.6632**	**2,870.1672**	**1.1767**	**0.0135**	**2,899.0554**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9061	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	1.0000e-003
Energy	0.0180	0.1640	0.1378	9.8000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	784.0540	784.0540	0.0308	8.9400e-003	787.4717
Mobile	2.3919	1.7477	16.7139	0.0271	2.2568	0.0233	2.2802	0.6002	0.0214	0.6216	0.0000	2,057.1417	2,057.1417	0.1067	0.0000	2,059.3825
Waste						0.0000	0.0000		0.0000	0.0000	17.4572	0.0000	17.4572	1.0317	0.0000	39.1228
Water						0.0000	0.0000		0.0000	0.0000	2.0467	9.4666	11.5133	7.4300e-003	4.5300e-003	13.0742
Total	**3.3160**	**1.9117**	**16.8522**	**0.0281**	**2.2568**	**0.0358**	**2.2926**	**0.6002**	**0.0339**	**0.6341**	**19.5039**	**2,850.6632**	**2,870.1672**	**1.1766**	**0.0135**	**2,899.0521**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.3919	1.7477	16.7139	0.0271	2.2568	0.0233	2.2802	0.6002	0.0214	0.6216	0.0000	2,057.1417	2,057.1417	0.1067	0.0000	2,059.3825
Unmitigated	2.3919	1.7477	16.7139	0.0271	2.2568	0.0233	2.2802	0.6002	0.0214	0.6216	0.0000	2,057.1417	2,057.1417	0.1067	0.0000	2,059.3825

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	63.69	15.80	2.73	94,216	94,216
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	1,334.81	1,662.44	1384.03	1,647,160	1,647,160
Strip Mall	71.88	83.30	42.48	106,746	106,746
Supermarket	3,162.68	5,493.38	5148.62	4,298,789	4,298,789
Total	4,633.05	7,254.92	6,577.86	6,146,912	6,146,912

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.674714	0.070965	0.226409	0.010000	0.004292	0.000646	0.001828	0.003234	0.000000	0.000000	0.007912	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	605.4924	605.4924	0.0274	5.6600e-003	607.8234
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	605.4924	605.4924	0.0274	5.6600e-003	607.8234
NaturalGas Mitigated	0.0180	0.1640	0.1378	9.8000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	178.5616	178.5616	3.4200e-003	3.2700e-003	179.6483
NaturalGas Unmitigated	0.0180	0.1640	0.1378	9.8000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	178.5616	178.5616	3.4200e-003	3.2700e-003	179.6483

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	38922	2.1000e-004	1.9100e-003	1.6000e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	2.0770	2.0770	4.0000e-005	4.0000e-005	2.0897
Other Non-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	0.0000
Parking Lot	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	0.0000
Quality Restaurant	2.44134e+006	0.0132	0.1197	0.1005	7.2000e-004		9.1000e-003	9.1000e-003		9.1000e-003	9.1000e-003	0.0000	130.2789	130.2789	2.5000e-003	2.3900e-003	131.0718
Strip Mall	3620.8	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1932	0.1932	0.0000	0.0000	0.1944
Supermarket	862240	4.6500e-003	0.0423	0.0355	2.5000e-004		3.2100e-003	3.2100e-003		3.2100e-003	3.2100e-003	0.0000	46.0124	46.0124	8.8000e-004	8.4000e-004	46.2924
Total		**0.0180**	**0.1640**	**0.1378**	**9.8000e-004**		**0.0125**	**0.0125**		**0.0125**	**0.0125**	**0.0000**	**178.5616**	**178.5616**	**3.4200e-003**	**3.2700e-003**	**179.6483**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-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	0.0000
Parking Lot	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	0.0000
Quality Restaurant	2.44134e+006	0.0132	0.1197	0.1005	7.2000e-004		9.1000e-003	9.1000e-003		9.1000e-003	9.1000e-003	0.0000	130.2789	130.2789	2.5000e-003	2.3900e-003	131.0718
Strip Mall	3620.8	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1932	0.1932	0.0000	0.0000	0.1944
Supermarket	862240	4.6500e-003	0.0423	0.0355	2.5000e-004		3.2100e-003	3.2100e-003		3.2100e-003	3.2100e-003	0.0000	46.0124	46.0124	8.8000e-004	8.4000e-004	46.2924

Medical Office Building	38922	2.1000e-004	1.9100e-003	1.6000e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	2.0770	2.0770	4.0000e-005	4.0000e-005	2.0897
Total		**0.0180**	**0.1640**	**0.1378**	**9.8000e-004**		**0.0125**	**0.0125**		**0.0125**	**0.0125**	**0.0000**	**178.5616**	**178.5616**	**3.4200e-003**	**3.2700e-003**	**179.6483**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	40111.5	11.6689	5.3000e-004	1.1000e-004	11.7138
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	141367	41.1252	1.8600e-003	3.8000e-004	41.2835
Quality Restaurant	403995	117.5268	5.3100e-003	1.1000e-003	117.9792
Strip Mall	15190	4.4190	2.0000e-004	4.0000e-005	4.4360
Supermarket	1.4807e+006	430.7526	0.0195	4.0300e-003	432.4109
Total		**605.4924**	**0.0274**	**5.6600e-003**	**607.8234**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	40111.5	11.6689	5.3000e-004	1.1000e-004	11.7138
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Parking Lot	141367	41.1252	1.8600e-003	3.8000e-004	41.2835
Quality Restaurant	403995	117.5268	5.3100e-003	1.1000e-003	117.9792
Strip Mall	15190	4.4190	2.0000e-004	4.0000e-005	4.4360
Supermarket	1.4807e+006	430.7526	0.0195	4.0300e-003	432.4109
Total		**605.4924**	**0.0274**	**5.6600e-003**	**607.8234**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9061	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	1.0000e-003
Unmitigated	0.9061	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	1.0000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	5.0000e-005	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	1.0000e-003
Total	**0.9061**	**0.0000**	**5.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.4000e-004**	**9.4000e-004**	**0.0000**	**0.0000**	**1.0000e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	1.0000e-003
Total	**0.9061**	**0.0000**	**5.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.4000e-004**	**9.4000e-004**	**0.0000**	**0.0000**	**1.0000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.5133	7.4300e-003	4.5300e-003	13.0742
Unmitigated	11.5133	7.4700e-003	4.5400e-003	13.0775

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	0.0896805 / 0.017082	0.1903	1.2000e-004	7.0000e-005	0.2146
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	4.34021 / 0.277035	8.6497	5.6100e-003	3.4100e-003	9.8233
Strip Mall	0.0308673 / 0.0189187	0.0788	4.0000e-005	2.0000e-005	0.0872
Supermarket	1.32415 / 0.040953	2.5946	1.7100e-003	1.0400e-003	2.9524
Total		**11.5133**	**7.4800e-003**	**4.5400e-003**	**13.0775**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	0.0896805 / 0.017082	0.1903	1.2000e-004	7.0000e-005	0.2145
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	4.34021 / 0.277035	8.6497	5.5800e-003	3.4000e-003	9.8208
Strip Mall	0.0308673 / 0.0189187	0.0788	4.0000e-005	2.0000e-005	0.0872

Supermarket	1.32415 / 0.040953	2.5946	1.7000e-003	1.0400e-003	2.9517
Total		**11.5133**	**7.4400e-003**	**4.5300e-003**	**13.0742**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	17.4572	1.0317	0.0000	39.1228
Mitigated	17.4572	1.0317	0.0000	39.1228

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	5	1.0150	0.0600	0.0000	2.2746
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	20	4.0598	0.2399	0.0000	9.0983

Strip Mall	2	0.4060	0.0240	0.0000	0.9098
Supermarket	59	11.9765	0.7078	0.0000	26.8400
Total		**17.4572**	**1.0317**	**0.0000**	**39.1228**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	5	1.0150	0.0600	0.0000	2.2746
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	20	4.0598	0.2399	0.0000	9.0983
Strip Mall	2	0.4060	0.0240	0.0000	0.9098
Supermarket	59	11.9765	0.7078	0.0000	26.8400
Total		**17.4572**	**1.0317**	**0.0000**	**39.1228**

9.0 Operational Offroad

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

10.0 Vegetation

Marina Plaza Project Santa Clara County,

Annual, Existing 2020

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	1.95	1000sqft	0.04	1,950.00	0
Other Non-Asphalt Surfaces	0.31	acre	0.31	13,693.00	0
Parking Lot	3.69	acre	3.69	160,644.00	0
Quality Restaurant	11.50	1000sqft	0.26	11,500.00	0
Strip Mall	1.24	1000sqft	0.03	1,240.00	0
Supermarket	34.00	1000sqft	0.78	34,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - from F&P

Construction Phase - Calculated values

Off-road Equipment - More air compressors

Off-road Equipment - Cranes only onsite 4 months out of 18 month total, this is reflected.

Trips and VMT - Taken from Const_Equip

Site for demo debris is 15 mi away

Demolition -

Grading -

Architectural Coating - VOC Content for non-residential not specified on CalEEMod Inputs, left baselines

Vechicle Emission Factors - See CalEEMod Input sheet

Vechicle Emission Factors - See CalEEMod Input Sheet

Vechicle Emission Factors - See CalEEMod Imputs Excel Spreadsheet

Area Coating - per CalEEMod arch coating methodology

Energy Use - Historical Data

Water And Wastewater - CalEEMod Input File Calcs

Solid Waste - Based on GP

Construction Off-road Equipment Mitigation - BAAQMD BMPs for fugitive dust

Water Mitigation - CalGreen

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	33,601.00	38,731.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	100,803.00	116,193.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblLandUse	LandUseSquareFeet	13,503.60	13,693.00
tblLandUse	LandUseSquareFeet	160,736.40	160,644.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	21.06	5.00
tblSolidWaste	SolidWasteGenerationRate	10.49	20.00
tblSolidWaste	SolidWasteGenerationRate	1.30	2.00
tblSolidWaste	SolidWasteGenerationRate	191.76	59.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblVehicleEF	HHD	0.02	3.3760e-003

tblVehicleEF	HHD	0.02	3.3760e-003
tblVehicleEF	HHD	0.02	3.3760e-003
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LHD1	0.03	4.1930e-003
tblVehicleEF	LHD1	0.03	4.1930e-003
tblVehicleEF	LHD1	0.03	4.1930e-003
tblVehicleEF	LHD2	4.4320e-003	6.3200e-004
tblVehicleEF	LHD2	4.4320e-003	6.3200e-004
tblVehicleEF	LHD2	4.4320e-003	6.3200e-004
tblVehicleEF	MCY	6.1590e-003	8.0930e-003
tblVehicleEF	MCY	6.1590e-003	8.0930e-003
tblVehicleEF	MCY	6.1590e-003	8.0930e-003
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MH	1.7670e-003	0.00
tblVehicleEF	MH	1.7670e-003	0.00
tblVehicleEF	MH	1.7670e-003	0.00
tblVehicleEF	MHD	0.01	1.7980e-003
tblVehicleEF	MHD	0.01	1.7980e-003
tblVehicleEF	MHD	0.01	1.7980e-003
tblVehicleEF	OBUS	1.7760e-003	0.00

tblVehicleEF	OBUS	1.7760e-003	0.00
tblVehicleEF	OBUS	1.7760e-003	0.00
tblVehicleEF	SBUS	5.0200e-004	0.00
tblVehicleEF	SBUS	5.0200e-004	0.00
tblVehicleEF	SBUS	5.0200e-004	0.00
tblVehicleEF	UBUS	1.2680e-003	0.00
tblVehicleEF	UBUS	1.2680e-003	0.00
tblVehicleEF	UBUS	1.2680e-003	0.00
tblVehicleTrips	ST_TR	8.96	8.10
tblVehicleTrips	ST_TR	94.36	144.56
tblVehicleTrips	ST_TR	42.04	67.18
tblVehicleTrips	ST_TR	177.59	161.57
tblVehicleTrips	SU_TR	1.55	1.40
tblVehicleTrips	SU_TR	72.16	120.35
tblVehicleTrips	SU_TR	20.43	34.26
tblVehicleTrips	SU_TR	166.44	151.43
tblVehicleTrips	WD_TR	36.13	32.66
tblVehicleTrips	WD_TR	89.95	116.07
tblVehicleTrips	WD_TR	44.32	57.97
tblVehicleTrips	WD_TR	102.24	93.02
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00

tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	244,687.05	89,680.50
tblWater	IndoorWaterUseRate	3,490,637.69	4,340,215.00
tblWater	IndoorWaterUseRate	91,849.93	30,867.32
tblWater	IndoorWaterUseRate	4,191,119.31	1,324,147.00
tblWater	OutdoorWaterUseRate	46,607.06	17,082.00
tblWater	OutdoorWaterUseRate	222,806.66	277,035.00
tblWater	OutdoorWaterUseRate	56,295.12	18,918.68
tblWater	OutdoorWaterUseRate	129,622.25	40,953.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9061	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	9.9000e-004
Energy	0.0180	0.1640	0.1378	9.8000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	784.0540	784.0540	0.0308	8.9400e-003	787.4717
Mobile	1.7517	1.1965	11.7112	0.0271	2.2569	0.0222	2.2790	0.6002	0.0205	0.6207	0.0000	1,763.6991	1,763.6991	0.0763	0.0000	1,765.3022

Waste						0.0000	0.0000		0.0000	0.0000	17.4572	0.0000	17.4572	1.0317	0.0000	39.1228
Water						0.0000	0.0000		0.0000	0.0000	2.0467	9.4666	11.5133	7.4700e-003	4.5400e-003	13.0775
Total	**2.6758**	**1.3605**	**11.8495**	**0.0280**	**2.2569**	**0.0346**	**2.2915**	**0.6002**	**0.0330**	**0.6332**	**19.5039**	**2,557.2206**	**2,576.7245**	**1.1463**	**0.0135**	**2,604.9751**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9061	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	9.9000e-004
Energy	0.0180	0.1640	0.1378	9.8000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	784.0540	784.0540	0.0308	8.9400e-003	787.4717
Mobile	1.7517	1.1965	11.7112	0.0271	2.2569	0.0222	2.2790	0.6002	0.0205	0.6207	0.0000	1,763.6991	1,763.6991	0.0763	0.0000	1,765.3022
Waste						0.0000	0.0000		0.0000	0.0000	17.4572	0.0000	17.4572	1.0317	0.0000	39.1228
Water						0.0000	0.0000		0.0000	0.0000	2.0467	9.4666	11.5133	7.4300e-003	4.5300e-003	13.0742
Total	**2.6758**	**1.3605**	**11.8495**	**0.0280**	**2.2569**	**0.0346**	**2.2915**	**0.6002**	**0.0330**	**0.6332**	**19.5039**	**2,557.2206**	**2,576.7245**	**1.1463**	**0.0135**	**2,604.9718**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**	**0.00**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7517	1.1965	11.7112	0.0271	2.2569	0.0222	2.2790	0.6002	0.0205	0.6207	0.0000	1,763.6991	1,763.6991	0.0763	0.0000	1,765.3022
Unmitigated	1.7517	1.1965	11.7112	0.0271	2.2569	0.0222	2.2790	0.6002	0.0205	0.6207	0.0000	1,763.6991	1,763.6991	0.0763	0.0000	1,765.3022

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	63.69	15.80	2.73	94,216	94,216
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	1,334.81	1,662.44	1384.03	1,647,160	1,647,160
Strip Mall	71.88	83.30	42.48	106,746	106,746
Supermarket	3,162.68	5,493.38	5148.62	4,298,789	4,298,789
Total	4,633.05	7,254.92	6,577.86	6,146,912	6,146,912

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	60	30	10
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.673970	0.071747	0.226189	0.010000	0.004193	0.000632	0.001798	0.003376	0.000000	0.000000	0.008093	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	605.4924	605.4924	0.0274	5.6600e-003	607.8234
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	605.4924	605.4924	0.0274	5.6600e-003	607.8234
NaturalGas Mitigated	0.0180	0.1640	0.1378	9.8000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	178.5616	178.5616	3.4200e-003	3.2700e-003	179.6483
NaturalGas Unmitigated	0.0180	0.1640	0.1378	9.8000e-004		0.0125	0.0125		0.0125	0.0125	0.0000	178.5616	178.5616	3.4200e-003	3.2700e-003	179.6483

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Medical Office Building	38922	2.1000e-004	1.9100e-003	1.6000e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	2.0770	2.0770	4.0000e-005	4.0000e-005	2.0897
Other Non-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	0.0000
Parking Lot	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	0.0000

Quality Restaurant	2.44134e+006	0.0132	0.1197	0.1005	7.2000e-004		9.1000e-003	9.1000e-003		9.1000e-003	9.1000e-003	0.0000	130.2789	130.2789	2.5000e-003	2.3900e-003	131.0718
Strip Mall	3620.8	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1932	0.1932	0.0000	0.0000	0.1944
Supermarket	862240	4.6500e-003	0.0423	0.0355	2.5000e-004		3.2100e-003	3.2100e-003		3.2100e-003	3.2100e-003	0.0000	46.0124	46.0124	8.8000e-004	8.4000e-004	46.2924
Total		**0.0180**	**0.1640**	**0.1378**	**9.8000e-004**		**0.0125**	**0.0125**		**0.0125**	**0.0125**	**0.0000**	**178.5616**	**178.5616**	**3.4200e-003**	**3.2700e-003**	**179.6483**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-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	0.0000
Parking Lot	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	0.0000
Quality Restaurant	2.44134e+006	0.0132	0.1197	0.1005	7.2000e-004		9.1000e-003	9.1000e-003		9.1000e-003	9.1000e-003	0.0000	130.2789	130.2789	2.5000e-003	2.3900e-003	131.0718
Strip Mall	3620.8	2.0000e-005	1.8000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1932	0.1932	0.0000	0.0000	0.1944
Supermarket	862240	4.6500e-003	0.0423	0.0355	2.5000e-004		3.2100e-003	3.2100e-003		3.2100e-003	3.2100e-003	0.0000	46.0124	46.0124	8.8000e-004	8.4000e-004	46.2924
Medical Office Building	38922	2.1000e-004	1.9100e-003	1.6000e-003	1.0000e-005		1.5000e-004	1.5000e-004		1.5000e-004	1.5000e-004	0.0000	2.0770	2.0770	4.0000e-005	4.0000e-005	2.0897
Total		**0.0180**	**0.1640**	**0.1378**	**9.8000e-004**		**0.0125**	**0.0125**		**0.0125**	**0.0125**	**0.0000**	**178.5616**	**178.5616**	**3.4200e-003**	**3.2700e-003**	**179.6483**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

Medical Office Building	40111.5	11.6689	5.3000e-004	1.1000e-004	11.7138
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	141367	41.1252	1.8600e-003	3.8000e-004	41.2835
Quality Restaurant	403995	117.5268	5.3100e-003	1.1000e-003	117.9792
Strip Mall	15190	4.4190	2.0000e-004	4.0000e-005	4.4360
Supermarket	1.4807e+006	430.7526	0.0195	4.0300e-003	432.4109
Total		**605.4924**	**0.0274**	**5.6600e-003**	**607.8234**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	40111.5	11.6689	5.3000e-004	1.1000e-004	11.7138
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	141367	41.1252	1.8600e-003	3.8000e-004	41.2835
Quality Restaurant	403995	117.5268	5.3100e-003	1.1000e-003	117.9792
Strip Mall	15190	4.4190	2.0000e-004	4.0000e-005	4.4360
Supermarket	1.4807e+006	430.7526	0.0195	4.0300e-003	432.4109
Total		**605.4924**	**0.0274**	**5.6600e-003**	**607.8234**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9061	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	9.9000e-004
Unmitigated	0.9061	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	9.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	9.9000e-004
Total	**0.9061**	**0.0000**	**4.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.4000e-004**	**9.4000e-004**	**0.0000**	**0.0000**	**9.9000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Architectural Coating	0.0350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.4000e-004	9.4000e-004	0.0000	0.0000	9.9000e-004
Total	**0.9061**	**0.0000**	**4.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.4000e-004**	**9.4000e-004**	**0.0000**	**0.0000**	**9.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.5133	7.4300e-003	4.5300e-003	13.0742
Unmitigated	11.5133	7.4700e-003	4.5400e-003	13.0775

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	0.0896805 / 0.017082	0.1903	1.2000e-004	7.0000e-005	0.2146
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000

Quality Restaurant	4.34021 / 0.277035	8.6497	5.6100e-003	3.4100e-003	9.8233
Strip Mall	0.0308673 / 0.019812	0.0788	4.0000e-005	2.0000e-005	0.0872
Supermarket	1.32415 / 0.040953	2.5946	1.7100e-003	1.0400e-003	2.9524
Total		**11.5133**	**7.4800e-003**	**4.5400e-003**	**13.0775**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	0.0896805 / 0.017082	0.1903	1.2000e-004	7.0000e-005	0.2145
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	4.34021 / 0.277035	8.6497	5.5800e-003	3.4000e-003	9.8208
Strip Mall	0.0308673 / 0.019812	0.0788	4.0000e-005	2.0000e-005	0.0872
Supermarket	1.32415 / 0.040953	2.5946	1.7000e-003	1.0400e-003	2.9517
Total		**11.5133**	**7.4400e-003**	**4.5300e-003**	**13.0742**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	17.4572	1.0317	0.0000	39.1228
Mitigated	17.4572	1.0317	0.0000	39.1228

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	5	1.0150	0.0600	0.0000	2.2746
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	20	4.0598	0.2399	0.0000	9.0983
Strip Mall	2	0.4060	0.0240	0.0000	0.9098
Supermarket	59	11.9765	0.7078	0.0000	26.8400
Total		**17.4572**	**1.0317**	**0.0000**	**39.1228**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Medical Office Building	5	1.0150	0.0600	0.0000	2.2746
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	20	4.0598	0.2399	0.0000	9.0983
Strip Mall	2	0.4060	0.0240	0.0000	0.9098
Supermarket	59	11.9765	0.7078	0.0000	26.8400
Total		**17.4572**	**1.0317**	**0.0000**	**39.1228**

9.0 Operational Offroad

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

10.0 Vegetation

Marina Plaza Operation 2020 Santa Clara County, Annual Project

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	644.00	Space	0.01	251,353.00	0
Other Asphalt Surfaces	28.21	1000sqft	0.65	28,209.00	0
Other Non-Asphalt Surfaces	49.38	1000sqft	1.13	49,379.00	0
Parking Lot	36.00	Space	0.26	11,479.00	0
Fast Food Restaurant w/o Drive Thru	2.80	1000sqft	0.06	2,800.00	0
Hotel	122.00	Room	0.59	87,432.00	0
Quality Restaurant	9.00	1000sqft	0.21	9,000.00	0
Apartments Low Rise	188.00	Dwelling Unit	1.97	278,213.00	542
Strip Mall	10.80	1000sqft	0.25	10,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - From CalEEMod input file, PD

Off-road Equipment - Operational run

Vehicle Trips - Calculated adjusted trip rates from CalEEMod Inputs File

Vechicle Emission Factors - See Cupertino Marina Inputs Sheet

Vechicle Emission Factors - See CalEEMod Input Sheet

Vechicle Emission Factors - See CalEEMod Input File

Woodstoves - 100% gas fireplaces

No wood stoves

Area Coating - From Construction Request

Water And Wastewater - Calculate outdoor/indoor percentage --> accurate water use

Solid Waste - Calculated in CalEEMod input sheet

Area Mitigation -

Energy Mitigation - 2016 Building & Energy Efficiency Standards

Water Mitigation - CALGreen + WELO

Energy Use -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	219,659.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	658,976.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	187,794.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	563,381.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblAreaCoating	Area_Nonresidential_Interior	658976	165048
tblAreaCoating	Area_Residential_Exterior	187794	188440
tblAreaCoating	Area_Residential_Interior	563381	565321
tblFireplaces	NumberGas	103.40	188.00
tblFireplaces	NumberNoFireplace	58.28	0.00
tblFireplaces	NumberWood	26.32	0.00
tblLandUse	LandUseSquareFeet	257,600.00	251,353.00
tblLandUse	LandUseSquareFeet	28,210.00	28,209.00

tblLandUse	LandUseSquareFeet	49,380.00	49,379.00
tblLandUse	LandUseSquareFeet	14,400.00	11,479.00
tblLandUse	LandUseSquareFeet	177,144.00	87,432.00
tblLandUse	LandUseSquareFeet	188,000.00	278,213.00
tblLandUse	LotAcreage	5.80	0.01
tblLandUse	LotAcreage	0.32	0.26
tblLandUse	LotAcreage	4.07	0.59
tblLandUse	LotAcreage	11.75	1.97
tblLandUse	Population	538.00	542.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSolidWaste	SolidWasteGenerationRate	86.48	285.00
tblSolidWaste	SolidWasteGenerationRate	32.25	4.00
tblSolidWaste	SolidWasteGenerationRate	66.80	9.00
tblSolidWaste	SolidWasteGenerationRate	8.21	16.00
tblSolidWaste	SolidWasteGenerationRate	11.34	13.00
tblTripsAndVMT	WorkerTripNumber	65.00	0.00
tblVehicleEF	HHD	0.02	3.3762e-003
tblVehicleEF	HHD	0.02	3.3762e-003
tblVehicleEF	HHD	0.02	3.3762e-003
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDA	0.55	0.67
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LDT2	0.19	0.23
tblVehicleEF	LHD1	0.03	4.1932e-003

tblVehicleEF	LHD1	0.03	4.1932e-003
tblVehicleEF	LHD1	0.03	4.1932e-003
tblVehicleEF	LHD2	4.4320e-003	6.3237e-004
tblVehicleEF	LHD2	4.4320e-003	6.3237e-004
tblVehicleEF	LHD2	4.4320e-003	6.3237e-004
tblVehicleEF	MCY	6.1590e-003	8.0931e-003
tblVehicleEF	MCY	6.1590e-003	8.0931e-003
tblVehicleEF	MCY	6.1590e-003	8.0931e-003
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MDV	0.12	0.01
tblVehicleEF	MH	1.7670e-003	0.00
tblVehicleEF	MH	1.7670e-003	0.00
tblVehicleEF	MH	1.7670e-003	0.00
tblVehicleEF	MHD	0.01	1.7982e-003
tblVehicleEF	MHD	0.01	1.7982e-003
tblVehicleEF	MHD	0.01	1.7982e-003
tblVehicleEF	OBUS	1.7760e-003	0.00
tblVehicleEF	OBUS	1.7760e-003	0.00
tblVehicleEF	OBUS	1.7760e-003	0.00
tblVehicleEF	SBUS	5.0200e-004	0.00
tblVehicleEF	SBUS	5.0200e-004	0.00
tblVehicleEF	SBUS	5.0200e-004	0.00
tblVehicleEF	UBUS	1.2680e-003	0.00
tblVehicleEF	UBUS	1.2680e-003	0.00
tblVehicleEF	UBUS	1.2680e-003	0.00
tblVehicleTrips	ST_TR	7.16	5.74
tblVehicleTrips	ST_TR	696.00	612.60
tblVehicleTrips	ST_TR	8.19	7.29
tblVehicleTrips	ST_TR	94.36	140.89

tblVehicleTrips	ST_TR	42.04	44.55
tblVehicleTrips	SU_TR	6.07	5.27
tblVehicleTrips	SU_TR	500.00	440.11
tblVehicleTrips	SU_TR	5.95	5.30
tblVehicleTrips	SU_TR	72.16	117.29
tblVehicleTrips	SU_TR	20.43	22.50
tblVehicleTrips	WD_TR	6.59	5.98
tblVehicleTrips	WD_TR	716.00	630.24
tblVehicleTrips	WD_TR	8.17	7.27
tblVehicleTrips	WD_TR	89.95	113.12
tblVehicleTrips	WD_TR	44.32	38.07
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	12,248,956.82	5,774,327.25

tblWater	IndoorWaterUseRate	849,894.39	1,056,748.00
tblWater	IndoorWaterUseRate	3,094,745.94	14,360,706.00
tblWater	IndoorWaterUseRate	2,731,803.41	3,396,690.00
tblWater	IndoorWaterUseRate	799,983.23	268,844.40
tblWater	OutdoorWaterUseRate	7,722,168.43	3,640,336.75
tblWater	OutdoorWaterUseRate	54,248.58	67,452.00
tblWater	OutdoorWaterUseRate	343,860.66	1,595,634.00
tblWater	OutdoorWaterUseRate	174,370.43	216,810.00
tblWater	OutdoorWaterUseRate	490,312.30	164,775.60
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	0.94	0.00
tblWoodstoves	NumberNoncatalytic	0.94	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.2013	0.0163	1.4090	7.0000e-005		8.3600e-003	8.3600e-003		8.3600e-003	8.3600e-003	0.0000	11.3345	11.3345	2.4400e-003	1.7000e-004	11.4371
Energy	0.0464	0.4156	0.3104	2.5300e-003		0.0320	0.0320		0.0320	0.0320	0.0000	1,525.1284	1,525.1284	0.0570	0.0184	1,532.0258
Mobile	1.8011	1.5260	14.4030	0.0373	3.1769	0.0279	3.2048	0.8448	0.0258	0.8706	0.0000	2,429.8683	2,429.8683	0.1010	0.0000	2,431.9898
Waste						0.0000	0.0000		0.0000	0.0000	66.3780	0.0000	66.3780	3.9228	0.0000	148.7575
Water						0.0000	0.0000		0.0000	0.0000	8.7946	44.9169	53.7114	0.0323	0.0196	60.4489
Total	**5.0488**	**1.9578**	**16.1224**	**0.0399**	**3.1769**	**0.0683**	**3.2452**	**0.8448**	**0.0662**	**0.9110**	**75.1726**	**4,011.2480**	**4,086.4206**	**4.1156**	**0.0381**	**4,184.6590**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.2013	0.0163	1.4090	7.0000e-005		8.3600e-003	8.3600e-003		8.3600e-003	8.3600e-003	0.0000	11.3345	11.3345	2.4400e-003	1.7000e-004	11.4371
Energy	0.0356	0.3190	0.2392	1.9400e-003		0.0246	0.0246		0.0246	0.0246	0.0000	1,285.9993	1,285.9993	0.0490	0.0152	1,291.7373
Mobile	1.8011	1.5260	14.4030	0.0373	3.1769	0.0279	3.2048	0.8448	0.0258	0.8706	0.0000	2,429.8683	2,429.8683	0.1010	0.0000	2,431.9898
Waste						0.0000	0.0000		0.0000	0.0000	66.3780	0.0000	66.3780	3.9228	0.0000	148.7575
Water						0.0000	0.0000		0.0000	0.0000	7.0357	36.7381	43.7737	0.0258	0.0156	49.1555

Total	**5.0380**	**1.8613**	**16.0512**	**0.0393**	**3.1769**	**0.0608**	**3.2377**	**0.8448**	**0.0588**	**0.9036**	**73.4137**	**3,763.9401**	**3,837.3538**	**4.1010**	**0.0310**	**3,933.0772**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.21**	**4.93**	**0.44**	**1.48**	**0.00**	**10.93**	**0.23**	**0.00**	**11.27**	**0.82**	**2.34**	**6.17**	**6.09**	**0.35**	**18.71**	**6.01**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8011	1.5260	14.4030	0.0373	3.1769	0.0279	3.2048	0.8448	0.0258	0.8706	0.0000	2,429.8683	2,429.8683	0.1010	0.0000	2,431.9898
Unmitigated	1.8011	1.5260	14.4030	0.0373	3.1769	0.0279	3.2048	0.8448	0.0258	0.8706	0.0000	2,429.8683	2,429.8683	0.1010	0.0000	2,431.9898

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,124.24	1,079.12	990.76	2,452,758	2,452,758
Enclosed Parking with Elevator	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	1,764.67	1,715.28	1232.31	2,711,637	2,711,637
Hotel	886.94	889.38	646.60	1,620,554	1,620,554
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	1,018.08	1,268.01	1055.61	1,256,323	1,256,323
Strip Mall	411.16	481.14	243.00	611,596	611,596
Total	5,205.09	5,432.93	4,168.28	8,652,868	8,652,868

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.673970	0.071747	0.226189	0.010000	0.004193	0.000632	0.001798	0.003376	0.000000	0.000000	0.008093	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	933.9128	933.9128	0.0422	8.7400e-003	937.5080
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,066.2436	1,066.2436	0.0482	9.9700e-003	1,070.3483

NaturalGas Mitigated	0.0356	0.3190	0.2392	1.9400e-003		0.0246	0.0246		0.0246	0.0246	0.0000	352.0865	352.0865	6.7500e-003	6.4500e-003	354.2292
NaturalGas Unmitigated	0.0464	0.4156	0.3104	2.5300e-003		0.0320	0.0320		0.0320	0.0320	0.0000	458.8848	458.8848	8.8000e-003	8.4100e-003	461.6775

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	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	0.0000
Fast Food Restaurant w/o [illegible]	590912	3.1900e-003	0.0290	0.0243	1.7000e-004		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	31.5333	31.5333	6.0000e-004	5.8000e-004	31.7252
Hotel	4.0551e+006	0.0219	0.1988	0.1670	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	216.3954	216.3954	4.1500e-003	3.9700e-003	217.7123
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	0.0000
Other Non-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	0.0000
Parking Lot	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	0.0000
Quality Restaurant	1.89936e+006	0.0102	0.0931	0.0782	5.6000e-004		7.0800e-003	7.0800e-003		7.0800e-003	7.0800e-003	0.0000	101.3571	101.3571	1.9400e-003	1.8600e-003	101.9739
Strip Mall	26892	1.5000e-004	1.3200e-003	1.1100e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4351	1.4351	3.0000e-005	3.0000e-005	1.4438
Apartments Low Rise	2.02692e+006	0.0109	0.0934	0.0397	6.0000e-004		7.5500e-003	7.5500e-003		7.5500e-003	7.5500e-003	0.0000	108.1640	108.1640	2.0700e-003	1.9800e-003	108.8222
Total		**0.0464**	**0.4156**	**0.3104**	**2.5300e-003**		**0.0320**	**0.0320**		**0.0320**	**0.0320**	**0.0000**	**458.8848**	**458.8848**	**8.7900e-003**	**8.4200e-003**	**461.6775**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	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	0.0000
Fast Food Restaurant w/o Drive Thru	531283	2.8600e-003	0.0260	0.0219	1.6000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	28.3513	28.3513	5.4000e-004	5.2000e-004	28.5238
Hotel	2.83577e+006	0.0153	0.1390	0.1168	8.3000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	151.3272	151.3272	2.9000e-003	2.7700e-003	152.2482
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	0.0000
Other Non-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	0.0000
Parking Lot	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	0.0000
Quality Restaurant	1.7077e+006	9.2100e-003	0.0837	0.0703	5.0000e-004		6.3600e-003	6.3600e-003		6.3600e-003	6.3600e-003	0.0000	91.1292	91.1292	1.7500e-003	1.6700e-003	91.6838
Strip Mall	17883.2	1.0000e-004	8.8000e-004	7.4000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9543	0.9543	2.0000e-005	2.0000e-005	0.9601
Apartments Low Rise	1.50522e+006	8.1200e-003	0.0694	0.0295	4.4000e-004		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	80.3245	80.3245	1.5400e-003	1.4700e-003	80.8133
Total		**0.0356**	**0.3190**	**0.2392**	**1.9400e-003**		**0.0246**	**0.0246**		**0.0246**	**0.0246**	**0.0000**	**352.0865**	**352.0865**	**6.7500e-003**	**6.4500e-003**	**354.2292**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	692161	201.3577	9.1000e-003	1.8800e-003	202.1329
Enclosed Parking with Elevator	1.69412e+006	492.8387	0.0223	4.6100e-003	494.7360

Fast Food Restaurant w/o Drive Thru	96012	27.9310	1.2600e-003	2.6000e-004	28.0385
Hotel	737926	214.6712	9.7100e-003	2.0100e-003	215.4976
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	10101.5	2.9387	1.3000e-004	3.0000e-005	2.9500
Quality Restaurant	308610	89.7782	4.0600e-003	8.4000e-004	90.1238
Strip Mall	126252	36.7282	1.6600e-003	3.4000e-004	36.8696
Total		**1,066.2436**	**0.0482**	**9.9700e-003**	**1,070.3483**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	677241	197.0171	8.9100e-003	1.8400e-003	197.7756
Enclosed Parking with Elevator	1.36404e+006	396.8156	0.0179	3.7100e-003	398.3432
Fast Food Restaurant w/o Drive Thru	90205.8	26.2419	1.1900e-003	2.5000e-004	26.3429
Hotel	664702	193.3694	8.7400e-003	1.8100e-003	194.1138
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	10101.5	2.9387	1.3000e-004	3.0000e-005	2.9500
Quality Restaurant	289947	84.3490	3.8100e-003	7.9000e-004	84.6737
Strip Mall	114059	33.1812	1.5000e-003	3.1000e-004	33.3089

Total		**933.9128**	**0.0422**	**8.7400e-003**	**937.5081**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.2013	0.0163	1.4090	7.0000e-005		8.3600e-003	8.3600e-003		8.3600e-003	8.3600e-003	0.0000	11.3345	11.3345	2.4400e-003	1.7000e-004	11.4371
Unmitigated	3.2013	0.0163	1.4090	7.0000e-005		8.3600e-003	8.3600e-003		8.3600e-003	8.3600e-003	0.0000	11.3345	11.3345	2.4400e-003	1.7000e-004	11.4371

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.1000e-004	0.0000	5.0000e-005	0.0000		6.3000e-004	6.3000e-004		6.2000e-004	6.2000e-004	0.0000	9.0382	9.0382	1.7000e-004	1.7000e-004	9.0932
Landscaping	0.0434	0.0163	1.4089	7.0000e-005		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003	0.0000	2.2963	2.2963	2.2700e-003	0.0000	2.3439
Total	**3.2013**	**0.0163**	**1.4090**	**7.0000e-005**		**8.3600e-003**	**8.3600e-003**		**8.3500e-003**	**8.3500e-003**	**0.0000**	**11.3345**	**11.3345**	**2.4400e-003**	**1.7000e-004**	**11.4371**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.1000e-004	0.0000	5.0000e-005	0.0000		6.3000e-004	6.3000e-004		6.2000e-004	6.2000e-004	0.0000	9.0382	9.0382	1.7000e-004	1.7000e-004	9.0932
Landscaping	0.0434	0.0163	1.4089	7.0000e-005		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003	0.0000	2.2963	2.2963	2.2700e-003	0.0000	2.3439
Total	**3.2013**	**0.0163**	**1.4090**	**7.0000e-005**		**8.3600e-003**	**8.3600e-003**		**8.3500e-003**	**8.3500e-003**	**0.0000**	**11.3345**	**11.3345**	**2.4400e-003**	**1.7000e-004**	**11.4371**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	43.7737	0.0258	0.0156	49.1555

Unmitigated	53.7114	0.0323	0.0196	60.4489

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	5.77433 / 3.64034	14.8390	7.6100e-003	4.5600e-003	16.4132
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	1.05675 / 0.067452	2.1060	1.3700e-003	8.3000e-004	2.3918
Hotel	14.3607 / 1.59563	29.3110	0.0186	0.0113	33.1968
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	3.39669 / 0.21681	6.7693	4.3900e-003	2.6700e-003	7.6878
Strip Mall	0.268844 / 0.164776	0.6861	3.5000e-004	2.1000e-004	0.7594
Total		**53.7114**	**0.0323**	**0.0196**	**60.4489**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
Apartments Low Rise	4.61946 / 3.41828	12.3864	6.0800e-003	3.6500e-003	13.6452
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0.845398 / 0.0633374	1.6944	1.0900e-003	6.6000e-004	1.9225
Hotel	11.4886 / 1.4983	23.6746	0.0148	9.0100e-003	26.7776
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	2.71735 / 0.203585	5.4461	3.4900e-003	2.1300e-003	6.1795
Strip Mall	0.215076 / 0.154724	0.5722	2.8000e-004	1.7000e-004	0.6308
Total		**43.7737**	**0.0257**	**0.0156**	**49.1555**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	66.3780	3.9228	0.0000	148.7575
Mitigated	66.3780	3.9228	0.0000	148.7575

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	285	57.8524	3.4190	0.0000	129.6510
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	4	0.8120	0.0480	0.0000	1.8197
Hotel	9	1.8269	0.1080	0.0000	4.0942
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	16	3.2479	0.1919	0.0000	7.2787
Strip Mall	13	2.6389	0.1560	0.0000	5.9139
Total		**66.3780**	**3.9228**	**0.0000**	**148.7575**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	285	57.8524	3.4190	0.0000	129.6510
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000

Fast Food Restaurant w/o Drive Thru	4	0.8120	0.0480	0.0000	1.8197
Hotel	9	1.8269	0.1080	0.0000	4.0942
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	16	3.2479	0.1919	0.0000	7.2787
Strip Mall	13	2.6389	0.1560	0.0000	5.9139
Total		**66.3780**	**3.9228**	**0.0000**	**148.7575**

9.0 Operational Offroad

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

10.0 Vegetation

Criteria Air Pollutant Emissions Summary - Construction

Annual emissions divided by total construction duration to obtain average daily emissions. Average construction emissions accounts for the duration of each construction phase and the time each piece of construction equipment is onsite.

Unmigated Run - with Best Control Measures for Fugitive Dust

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total	15.30	48.96	47.79	0.09	2.95	2.46	5.41	0.95	2.31	3.26
BAAQMD Threshold	54	54	NA	NA	BMP	82	54	BMP	54	NA
Exceeds Threshold	No	No	NA	NA	NA	No	No	NA	No	NA

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
TOTAL 2016	4.98	52.13	42.23	0.05	1.17	2.54	3.70	0.23	2.36	2.59
TOTAL 2017	8.97	88.89	74.67	0.13	5.49	4.07	9.56	1.98	3.79	5.76
TOTAL 2018	4.13	30.37	36.19	0.07	1.93	1.76	3.70	0.53	1.67	2.20
TOTAL 2019	34.51	27.24	33.54	0.06	1.73	1.54	3.27	0.47	1.46	1.93

FOR CONSTRUCTION RISK ASSESSMENT

Onsite Details with Best Control Measures for Fugitive Dust

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 Onsite	4.68	50.09	38.46	0.05	0.74	2.51	3.25	0.11	2.34	2.45
2017 Onsite	6.88	69.88	49.50	0.07	2.97	3.82	6.79	1.29	3.55	4.84
2018 Onsite	2.93	23.94	20.64	0.03	0.00	1.67	1.67	0.00	1.58	1.58
2019 Onsite	33.58	22.52	21.22	0.03	0.00	1.47	1.47	0.00	1.39	1.39

Offsite Details with Best Control Measures for Fugitive Dust

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 Offsite	0.30	2.04	3.77	0.01	0.43	0.03	0.46	0.12	0.02	0.14
2017 Offsite	2.09	19.01	25.17	0.07	2.52	0.25	2.77	0.69	0.23	0.92
2018 Offsite	1.20	6.43	15.55	0.04	1.93	0.10	2.03	0.53	0.09	0.62
2019 Offsite	0.93	4.72	12.33	0.03	1.73	0.07	1.81	0.47	0.07	0.54

Criteria Air Pollutant Emissions Summary - Construction

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	tons/yr	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Total		6.32	20.22	19.74	0.04	1.22	1.02	2.23	0.39	0.95	1.34

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	tons/yr	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Total Onsite		5.76	16.25	12.74	0.02	0.40	0.96	1.36	0.17	0.90	1.07
Total Offsite		0.56	3.97	6.99	0.02	0.82	0.06	0.87	0.22	0.05	0.27

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	tons/yr	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Total 2016		0.11	1.15	0.93	0.00	0.03	0.06	0.08	0.01	0.05	0.06
Total 2017		1.17	11.56	9.71	0.02	0.71	0.53	1.24	0.26	0.49	0.75
Total 2018		0.54	3.96	4.72	0.01	0.25	0.23	0.48	0.07	0.22	0.29
Total 2019		4.50	3.56	4.38	0.01	0.23	0.20	0.43	0.06	0.19	0.25

FOR CONSTRUCTION RISK ASSESSMENT - Unmitigated Run

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	tons/yr	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
2016 Onsite		0.10	1.10	0.85	0.00	0.02	0.06	0.07	0.00	0.05	0.05
2016 Offsite		0.01	0.04	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00
2017 Onsite		0.89	9.08	6.44	0.01	0.39	0.50	0.88	0.17	0.46	0.63
2017 Offsite		0.27	2.47	3.27	0.01	0.33	0.03	0.36	0.09	0.03	0.12
2018 Onsite		0.38	3.12	2.69	0.00	0.00	0.22	0.22	0.00	0.21	0.21
2018 Offsite		0.16	0.84	2.03	0.00	0.25	0.01	0.26	0.07	0.01	0.08
2019 Onsite		4.38	2.94	2.77	0.00	0.00	0.19	0.19	0.00	0.18	0.18
2019 Offsite		0.12	0.62	1.61	0.00	0.23	0.01	0.24	0.06	0.01	0.07

Demolition - 2016

Unmitigated Construction

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
Category	**tons/yr**	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Off-Road		0.1029	1.1019	0.8461	9.90E-04		0.0552	0.0552		0.0514	0.0514
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		3.28E-03	4.61E-03	0.0447	9.00E-05	7.39E-03	6.00E-05	7.45E-03	1.98E-03	6.00E-05	2.04E-03
Total		0.11	1.11	0.89	0.00	0.01	0.06	0.06	0.00	0.05	0.05
TOTAL ONSITE		0.10	1.10	0.85	0.00	0.00	0.06	0.06	0.00	0.05	0.05
TOTAL OFFSITE		0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Demolition - 2017

Unmitigated Construction

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
Category	**tons/yr**	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Off-Road		0.0221	0.2336	0.1866	2.30E-04		0.0116	0.0116		0.0108	0.0108
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		6.70E-04	9.40E-04	9.09E-03	2.00E-05	1.68E-03	1.00E-05	1.69E-03	4.50E-04	1.00E-05	4.60E-04
Total		0.02	0.23	0.20	0.00	0.00	0.01	0.01	0.00	0.01	0.01
TOTAL ONSITE		0.02	0.23	0.19	0.00	0.00	0.01	0.01	0.00	0.01	0.01
TOTAL OFFSITE		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Demo Haul - 2016

Unmitigated Construction

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
Category	**tons/yr**	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Fugitive Dust						0.0162	0	0.0162	2.45E-03	0	2.45E-03
Off-Road		0	0	0	0		0	0		0	0
Hauling		3.33E-03	0.0403	0.0382	1.00E-04	2.08E-03	5.20E-04	2.60E-03	5.80E-04	4.70E-04	1.05E-03
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		0	0	0	0	0	0	0	0	0	0
Total		0.00	0.04	0.04	0.00	0.02	0.00	0.02	0.00	0.00	0.00
TOTAL ONSITE		0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00
TOTAL OFFSITE		0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Site Preparation - 2017

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.0592	0	0.0592	0.0326	0	0.0326
Off-Road		0.042	0.4435	0.3388	3.50E-04		0.0246	0.0246		0.0227	0.0227
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		4.80E-04	4.11E-03	5.73E-03	1.00E-05	2.80E-04	6.00E-05	3.40E-04	8.00E-05	5.00E-05	1.40E-04
Worker		1.69E-03	2.37E-03	0.023	5.00E-05	4.25E-03	4.00E-05	4.28E-03	1.14E-03	3.00E-05	1.17E-03
Total		4.42E-02	4.50E-01	3.68E-01	4.10E-04	6.37E-02	2.47E-02	8.84E-02	3.38E-02	2.28E-02	5.66E-02
TOTAL ONSITE		0.04	0.44	0.34	0.00	0.06	0.02	0.08	0.03	0.02	0.06
TOTAL OFFSITE		0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Mass Grading - 2017

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.3244	0	0.3244	0.1345	0	0.1345
Off-Road		0.5614	6.3556	4.3049	5.67E-03		0.3103	0.3103		0.2855	0.2855
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		3.64E-03	0.0313	0.0436	8.00E-05	2.11E-03	4.50E-04	2.57E-03	6.10E-04	4.20E-04	1.03E-03
Worker		0.0146	0.0205	0.1988	4.60E-04	0.0367	3.00E-04	0.037	9.83E-03	2.80E-04	0.0101
Total		0.58	6.41	4.55	0.01	0.36	0.31	0.67	0.14	0.29	0.43
TOTAL ONSITE		0.56	6.36	4.30	0.01	0.32	0.31	0.63	0.13	0.29	0.42
TOTAL OFFSITE		0.02	0.05	0.24	0.00	0.04	0.00	0.04	0.01	0.00	0.01

Mass Grading Soil Haul - 2017

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.00254	0	0.00254	0.00038	0	0.00038
Off-Road		0	0	0	0		0	0		0	0
Hauling		0.1279	1.7552	1.429	4.91E-03	0.1034	0.0225	0.1259	0.0286	0.0207	0.0493
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		0	0	0	0	0	0	0	0	0	0
Total		0.1279	1.7552	1.429	0.00491	0.10594	0.0225	0.12844	0.02898	0.0207	0.04968
TOTAL ONSITE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL OFFSITE		0.13	1.76	1.43	0.00	0.10	0.02	0.13	0.03	0.02	0.05

Building Construction A - 2017

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.1411	1.0415	0.814	1.24E-03		0.0756	0.0756		0.0727	0.0727
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0.04	0.3442	0.4797	9.10E-04	0.0233	4.98E-03	0.0282	6.74E-03	4.58E-03	0.0113
Worker		0.033	0.0464	0.4498	1.04E-03	0.0831	6.90E-04	0.0838	0.0223	6.30E-04	0.0229
Total		0.21	1.43	1.74	0.00	0.11	0.08	0.19	0.03	0.08	0.11
TOTAL ONSITE		0.14	1.04	0.81	0.00	0.00	0.08	0.08	0.00	0.07	0.07
TOTAL OFFSITE		0.07	0.39	0.93	0.00	0.11	0.01	0.11	0.03	0.01	0.03

Building Construction B - 2017

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.1274	1.0097	0.7907	1.15E-03		0.0741	0.0741		0.0703	0.0703
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0.0273	0.2347	0.327	6.20E-04	0.0159	3.39E-03	0.0193	4.59E-03	3.12E-03	7.71E-03
Worker		0.0225	0.0317	0.3067	7.10E-04	0.0567	4.70E-04	0.0571	0.0152	4.30E-04	0.0156
Total		0.18	1.28	1.42	0.00	0.07	0.08	0.15	0.02	0.07	0.09
TOTAL ONSITE		0.13	1.01	0.79	0.00	0.00	0.07	0.07	0.00	0.07	0.07
TOTAL OFFSITE		0.05	0.27	0.63	0.00	0.07	0.00	0.08	0.02	0.00	0.02

Building Construction B - 2018

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.3828	3.1247	2.6936	4.00E-03		0.2173	0.2173		0.2066	0.2066
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0.086	0.7393	1.0719	2.17E-03	0.0552	0.0109	0.0661	0.016	0.0101	0.026
Worker		0.0703	0.0992	0.9575	2.48E-03	0.1972	1.58E-03	0.1988	0.0528	1.46E-03	0.0543
Total		0.54	3.96	4.72	0.01	0.25	0.23	0.48	0.07	0.22	0.29
TOTAL ONSITE		0.38	3.12	2.69	0.00	0.00	0.22	0.22	0.00	0.21	0.21
TOTAL OFFSITE		0.16	0.84	2.03	0.00	0.25	0.01	0.26	0.07	0.01	0.08

Building Construction B - 2019

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.2379	2.0022	1.8727	2.82E-03		0.132	0.132		0.1255	0.1255
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0.055	0.4757	0.7165	1.52E-03	0.0389	7.16E-03	0.0461	0.0113	6.59E-03	0.0179
Worker		0.0453	0.0636	0.6135	1.74E-03	0.139	1.09E-03	0.1401	0.0372	1.01E-03	0.0382
Total		0.34	2.54	3.20	0.01	0.18	0.14	0.32	0.05	0.13	0.18
TOTAL ONSITE		0.24	2.00	1.87	0.00	0.00	0.13	0.13	0.00	0.13	0.13
TOTAL OFFSITE		0.10	0.54	1.33	0.00	0.18	0.01	0.19	0.05	0.01	0.06

Building Construction C - 2019

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.024	0.1944	0.1796	2.80E-04		0.0128	0.0128		0.0122	0.0122
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		6.58E-03	0.0569	0.0857	1.80E-04	4.65E-03	8.60E-04	5.51E-03	1.35E-03	7.90E-04	2.13E-03
Worker		5.42E-03	7.61E-03	0.0734	2.10E-04	0.0166	1.30E-04	0.0168	4.45E-03	1.20E-04	4.57E-03
Total		0.04	0.26	0.34	0.00	0.02	0.01	0.04	0.01	0.01	0.02
TOTAL ONSITE		0.02	0.19	0.18	0.00	0.00	0.01	0.01	0.00	0.01	0.01
TOTAL OFFSITE		0.01	0.06	0.16	0.00	0.02	0.00	0.02	0.01	0.00	0.01

Paving - 2019

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.0541	0.5538	0.5273	7.70E-04		0.0333	0.0333		0.0306	0.0306
Paving		1.19E-03					0	0		0	0
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		4.21E-03	5.92E-03	0.0571	1.60E-04	0.0129	1.00E-04	0.013	3.46E-03	9.00E-05	3.55E-03
Total		0.06	0.56	0.58	0.00	0.01	0.03	0.05	0.00	0.03	0.03
TOTAL ONSITE		0.06	0.55	0.53	0.00	0.00	0.03	0.03	0.00	0.03	0.03
TOTAL OFFSITE		0.00	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Painting - 2019

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Archit. Coating		4.0372					0	0		0	0
Off-Road		0.0274	0.1884	0.189	3.10E-04		0.0132	0.0132		0.0132	0.0132
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		4.63E-03	6.51E-03	0.0628	1.80E-04	0.0142	1.10E-04	0.0143	3.81E-03	1.00E-04	3.91E-03
Total		4.07	0.19	0.25	0.00	0.01	0.01	0.03	0.00	0.01	0.02
TOTAL ONSITE		4.06	0.19	0.19	0.00	0.00	0.01	0.01	0.00	0.01	0.01
TOTAL OFFSITE		0.00	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Criteria Air Pollutant Emissions Summary - Construction (Mitigated - Tier 3 Engines/Level 3 DPF for Eq. >50 HP)

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	tons/yr	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Total		5.13	12.96	18.80	0.04	1.22	0.17	1.39	0.39	0.16	0.56

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	tons/yr	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Total Onsite		4.58	8.99	11.81	0.02	0.40	0.11	0.51	0.17	0.11	0.28
Total Offsite		0.56	3.97	6.99	0.02	0.82	0.06	0.87	0.22	0.05	0.27

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	tons/yr	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Total 2016		0.03	0.51	0.73	0.00	0.03	0.00	0.03	0.01	0.00	0.01
Total 2017		0.52	6.75	8.78	0.02	0.71	0.08	0.79	0.26	0.07	0.33
Total 2018		0.30	2.93	4.79	0.01	0.25	0.05	0.30	0.07	0.05	0.11
Total 2019		4.29	2.77	4.51	0.01	0.23	0.04	0.27	0.06	0.04	0.10

FOR CONSTRUCTION RISK ASSESSMENT - Mitigated Run

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
	tons/yr	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
2016 Onsite		0.02	0.47	0.64	0.00	0.02	0.00	0.02	0.00	0.00	0.01
2016 Offsite		0.01	0.04	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00
2017 Onsite		0.25	4.28	5.51	0.01	0.39	0.04	0.43	0.17	0.04	0.21
2017 Offsite		0.27	2.47	3.27	0.01	0.33	0.03	0.36	0.09	0.03	0.12
2018 Onsite		0.14	2.09	2.76	0.00	0.00	0.03	0.03	0.00	0.03	0.03
2018 Offsite		0.16	0.84	2.03	0.00	0.25	0.01	0.26	0.07	0.01	0.08
2019 Onsite		4.17	2.15	2.90	0.00	0.00	0.03	0.03	0.00	0.03	0.03
2019 Offsite		0.12	0.62	1.61	0.00	0.23	0.01	0.24	0.06	0.01	0.07

Demolition - 2016

Mitigated Construction

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
Category	**tons/yr**	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Off-Road		0.0237	0.4682	0.6442	9.90E-04		3.31E-03	3.31E-03		3.31E-03	3.31E-03
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		3.28E-03	4.61E-03	0.0447	9.00E-05	7.39E-03	6.00E-05	7.45E-03	1.98E-03	6.00E-05	2.04E-03
Total		0.03	0.47	0.69	0.00	0.01	0.00	0.01	0.00	0.00	0.01
TOTAL ONSITE		0.02	0.47	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL OFFSITE		0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Demolition - 2017

Mitigated Construction

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
Category	**tons/yr**	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Off-Road		5.39E-03	0.1064	0.1464	2.30E-04		7.50E-04	7.50E-04		7.50E-04	7.50E-04
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		6.70E-04	9.40E-04	9.09E-03	2.00E-05	1.68E-03	1.00E-05	1.69E-03	4.50E-04	1.00E-05	4.60E-04
Total		0.01	0.11	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL ONSITE		0.01	0.11	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL OFFSITE		0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Demo Haul - 2016

Mitigated Construction

						Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5
Category	**tons/yr**	ROG	NOx	CO	SO2	PM10	PM10	Total	PM2.5	PM2.5	Total
Fugitive Dust						0.0162	0	0.0162	2.45E-03	0	2.45E-03
Off-Road		0	0	0	0		0	0		0	0
Hauling		3.33E-03	0.0403	0.0382	1.00E-04	2.08E-03	5.20E-04	2.60E-03	5.80E-04	4.70E-04	1.05E-03
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		0	0	0	0	0	0	0	0	0	0
Total		0.00	0.04	0.04	0.00	0.02	0.00	0.02	0.00	0.00	0.00
TOTAL ONSITE		0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00
TOTAL OFFSITE		0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Site Preparation - 2017

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.0592	0	0.0592	0.0326	0	0.0326
Off-Road		8.46E-03	0.1758	0.2153	3.50E-04		1.38E-03	1.38E-03		1.38E-03	1.38E-03
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		4.80E-04	4.11E-03	5.73E-03	1.00E-05	2.80E-04	6.00E-05	3.40E-04	8.00E-05	5.00E-05	1.40E-04
Worker		1.69E-03	2.37E-03	0.023	5.00E-05	4.25E-03	4.00E-05	4.28E-03	1.14E-03	3.00E-05	1.17E-03
Total		1.06E-02	1.82E-01	2.44E-01	4.10E-04	6.37E-02	1.48E-03	6.52E-02	3.38E-02	1.46E-03	3.53E-02
TOTAL ONSITE		0.01	0.18	0.22	0.00	0.06	0.00	0.06	0.03	0.00	0.03
TOTAL OFFSITE		0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Mass Grading - 2017

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.3244	0	0.3244	0.1345	0	0.1345
Off-Road		0.139	2.7575	3.525	5.67E-03		0.019	0.019		0.019	0.019
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		3.64E-03	0.0313	0.0436	8.00E-05	2.11E-03	4.50E-04	2.57E-03	6.10E-04	4.20E-04	1.03E-03
Worker		0.0146	0.0205	0.1988	4.60E-04	0.0367	3.00E-04	0.037	9.83E-03	2.80E-04	0.0101
Total		0.16	2.81	3.77	0.01	0.36	0.02	0.38	0.14	0.02	0.16
TOTAL ONSITE		0.14	2.76	3.53	0.01	0.32	0.02	0.34	0.13	0.02	0.15
TOTAL OFFSITE		0.02	0.05	0.24	0.00	0.04	0.00	0.04	0.01	0.00	0.01

Mass Grading Soil Haul - 2017

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.00254	0	0.00254	0.00038	0	0.00038
Off-Road		0	0	0	0		0	0		0	0
Hauling		0.1279	1.7552	1.429	4.91E-03	0.1034	0.0225	0.1259	0.0286	0.0207	0.0493
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		0	0	0	0	0	0	0	0	0	0
Total		0.1279	1.7552	1.429	0.00491	0.10594	0.0225	0.12844	0.02898	0.0207	0.04968
TOTAL ONSITE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL OFFSITE		0.13	1.76	1.43	0.00	0.10	0.02	0.13	0.03	0.02	0.05

Building Construction A - 2017

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.0513	0.6339	0.8276	1.24E-03		0.0126	0.0126		0.0126	0.0126
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0.04	0.3442	0.4797	9.10E-04	0.0233	4.98E-03	0.0282	6.74E-03	4.58E-03	0.0113
Worker		0.033	0.0464	0.4498	1.04E-03	0.0831	6.90E-04	0.0838	0.0223	6.30E-04	0.0229
Total		0.12	1.02	1.76	0.00	0.11	0.02	0.12	0.03	0.02	0.05
TOTAL ONSITE		0.05	0.63	0.83	0.00	0.00	0.01	0.01	0.00	0.01	0.01
TOTAL OFFSITE		0.07	0.39	0.93	0.00	0.11	0.01	0.11	0.03	0.01	0.03

Building Construction B - 2017

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.0424	0.6029	0.7948	1.15E-03		0.0104	0.0104		0.0104	0.0104
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0.0273	0.2347	0.327	6.20E-04	0.0159	3.39E-03	0.0193	4.59E-03	3.12E-03	7.71E-03
Worker		0.0225	0.0317	0.3067	7.10E-04	0.0567	4.70E-04	0.0571	0.0152	4.30E-04	0.0156
Total		0.09	0.87	1.43	0.00	0.07	0.01	0.09	0.02	0.01	0.03
TOTAL ONSITE		0.04	0.60	0.79	0.00	0.00	0.01	0.01	0.00	0.01	0.01
TOTAL OFFSITE		0.05	0.27	0.63	0.00	0.07	0.00	0.08	0.02	0.00	0.02

Building Construction B - 2018

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.1399	2.0904	2.759	4.00E-03		0.0343	0.0343		0.0343	0.0343
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0.086	0.7393	1.0719	2.17E-03	0.0552	0.0109	0.0661	0.016	0.0101	0.026
Worker		0.0703	0.0992	0.9575	2.48E-03	0.1972	1.58E-03	0.1988	0.0528	1.46E-03	0.0543
Total		0.30	2.93	4.79	0.01	0.25	0.05	0.30	0.07	0.05	0.11
TOTAL ONSITE		0.14	2.09	2.76	0.00	0.00	0.03	0.03	0.00	0.03	0.03
TOTAL OFFSITE		0.16	0.84	2.03	0.00	0.25	0.01	0.26	0.07	0.01	0.08

Building Construction B - 2019

Unmitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.0934	1.4684	1.9403	2.82E-03		0.0229	0.0229		0.0229	0.0229
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0.055	0.4757	0.7165	1.52E-03	0.0389	7.16E-03	0.0461	0.0113	6.59E-03	0.0179
Worker		0.0453	0.0636	0.6135	1.74E-03	0.139	1.09E-03	0.1401	0.0372	1.01E-03	0.0382
Total		0.19	2.01	3.27	0.01	0.18	0.03	0.21	0.05	0.03	0.08
TOTAL ONSITE		0.09	1.47	1.94	0.00	0.00	0.02	0.02	0.00	0.02	0.02
TOTAL OFFSITE		0.10	0.54	1.33	0.00	0.18	0.01	0.19	0.05	0.01	0.06

Building Construction C - 2019

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		9.71E-03	0.1422	0.1869	2.80E-04		2.39E-03	2.39E-03		2.39E-03	2.39E-03
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		6.58E-03	0.0569	0.0857	1.80E-04	4.65E-03	8.60E-04	5.51E-03	1.35E-03	7.90E-04	2.13E-03
Worker		5.42E-03	7.61E-03	0.0734	2.10E-04	0.0166	1.30E-04	0.0168	4.45E-03	1.20E-04	4.57E-03
Total		0.02	0.21	0.35	0.00	0.02	0.00	0.02	0.01	0.00	0.01
TOTAL ONSITE		0.01	0.14	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL OFFSITE		0.01	0.06	0.16	0.00	0.02	0.00	0.02	0.01	0.00	0.01

Paving - 2019

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.0189	0.4031	0.5826	7.70E-04		3.73E-03	3.73E-03		3.73E-03	3.73E-03
Paving		1.19E-03					0	0		0	0
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		4.21E-03	5.92E-03	0.0571	1.60E-04	0.0129	1.00E-04	0.013	3.46E-03	9.00E-05	3.55E-03
Total		0.02	0.41	0.64	0.00	0.01	0.00	0.02	0.00	0.00	0.01
TOTAL ONSITE		0.02	0.40	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL OFFSITE		0.00	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Painting - 2019

Mitigated Construction

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Archit. Coating		4.0372					0	0		0	0
Off-Road		6.10E-03	0.1393	0.1881	3.10E-04		1.46E-03	1.46E-03		1.46E-03	1.46E-03
Hauling		0	0	0	0	0	0	0	0	0	0
Vendor		0	0	0	0	0	0	0	0	0	0
Worker		4.63E-03	6.51E-03	0.0628	1.80E-04	0.0142	1.10E-04	0.0143	3.81E-03	1.00E-04	3.91E-03
Total		4.05	0.15	0.25	0.00	0.01	0.00	0.02	0.00	0.00	0.01
TOTAL ONSITE		4.04	0.14	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL OFFSITE		0.00	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00

Criteria Air Pollutant Emissions Summary - Construction (Mitigated - Tier 3 Engines/Level 3 DPF for Eq. >50 HP)

Annual emissions divided by total construction duration to obtain average daily emissions. Average construction emissions accounts for the duration of each construction phase and the time each piece of construction equipment is onsite.

Migated Run

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total	12.43	31.38	45.53	0.09	2.95	0.41	3.35	0.95	0.40	1.35
BAAQMD Threshold	54	54	NA	NA	BMP	82	54	BMP	54	NA
Exceeds Threshold	No	No	NA	NA	NA	No	No	NA	No	NA

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
TOTAL 2016	1.38	23.32	33.05	0.05	1.17	0.18	1.34	0.23	0.17	0.40
TOTAL 2017	3.99	51.91	67.55	0.13	5.49	0.59	6.08	1.98	0.57	2.55
TOTAL 2018	2.27	22.44	36.69	0.07	1.93	0.36	2.29	0.53	0.35	0.88
TOTAL 2019	32.86	21.22	34.54	0.06	1.73	0.31	2.04	0.47	0.30	0.77

FOR CONSTRUCTION RISK ASSESSMENT

Onsite Details with Tier 3 Engines & Level 3 DPF for Eq. >50 HP and Best Control Measures for Fugitive Dust

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 Onsite	1.08	21.28	29.28	0.05	0.74	0.15	0.89	0.11	0.15	0.26
2017 Onsite	1.90	32.90	42.38	0.07	2.97	0.34	3.31	1.29	0.34	1.63
2018 Onsite	1.07	16.02	21.14	0.03	0.00	0.26	0.26	0.00	0.26	0.26
2019 Onsite	31.93	16.50	22.21	0.03	0.00	0.23	0.23	0.00	0.23	0.23

Offsite Details with Tier 3 Engines & Level 3 DPF for Eq. >50 HP and Best Control Measures for Fugitive Dust

avg lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 Offsite	0.30	2.04	3.77	0.01	0.43	0.03	0.46	0.12	0.02	0.14
2017 Offsite	2.09	19.01	25.17	0.07	2.52	0.25	2.77	0.69	0.23	0.92
2018 Offsite	1.20	6.43	15.55	0.04	1.93	0.10	2.03	0.53	0.09	0.62
2019 Offsite	0.93	4.72	12.33	0.03	1.73	0.07	1.81	0.47	0.07	0.54

Criteria Air Pollutant Emissions Summary - Operations

Existing Land Uses - 2016 Emission Rates

Tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	0.9061	0	5.00E-04	0		0	0		0	0
Energy Use	0.018	0.164	0.1378	9.80E-04		0.0125	0.0125		0.0125	0.0125
Mobile Sources	2.3919	1.7477	16.7139	0.0271	2.2568	0.0233	2.2802	0.6002	0.0214	0.6216
Waste Generation						0	0		0	0
Water/Wastewater						0	0		0	0
Total	3.32	1.91	16.85	0.03	2.26	0.04	2.29	0.60	0.03	0.63

Existing Land Uses - 2020 Emission Rates

Tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	0.9061	0	4.90E-04	0		0	0		0	0
Energy Use	0.018	0.164	0.1378	9.80E-04		0.0125	0.0125		0.0125	0.0125
Mobile Sources	1.7517	1.1965	11.7112	0.0271	2.2569	0.0222	2.279	0.6002	0.0205	0.6207
Waste Generation						0	0		0	0
Water/Wastewater						0	0		0	0
Total	2.68	1.36	11.85	0.03	2.26	0.03	2.29	0.60	0.03	0.63

Proposed Project - 2020 Emission Rates

Tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	3.1678	0.0163	1.409	7.00E-05		8.36E-03	8.36E-03		8.36E-03	8.36E-03
Energy Use	0.0365	0.327	0.2459	1.99E-03		0.0252	0.0252		0.0252	0.0252
Mobile Sources	1.8011	1.526	14.4029	0.0373	3.1769	0.0279	3.2048	0.8448	0.0258	0.8706
Waste Generation						0	0		0	0
Water/Wastewater						0	0		0	0
Total	5.01	1.87	16.06	0.04	3.18	0.06	3.24	0.84	0.06	0.90

Net Emissions (Project - 2020 Existing)

Tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	2.26	0.02	1.41	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Energy Use	0.02	0.16	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Mobile Sources	0.05	0.33	2.69	0.01	0.92	0.01	0.93	0.24	0.01	0.25
Waste Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Wastewater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	2.33	0.51	4.21	0.01	0.92	0.03	0.95	0.24	0.03	0.27
BAAQMD Threshold (Annual)	10.00	10.00	NA	NA	NA	NA	15.00	NA	NA	10.00
Exceeds Threshold	No	No	NA	NA	NA	NA	No	NA	NA	No

Criteria Air Pollutant Emissions Summary - Operations

Annual emissions divided by 365 days/year to obtain average daily emissions.

Existing Land Uses - 2016 Emission Rates

lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	4.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Use	0.10	0.90	0.76	0.01	0.00	0.07	0.07	0.00	0.07	0.07
Mobile Sources	13.11	9.58	91.58	0.15	12.37	0.13	12.49	3.29	0.12	3.41
Waste Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Wastewater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	18.17	10.48	92.34	0.15	12.37	0.20	12.56	3.29	0.19	3.47

Existing Land Uses - 2020 Emission Rates

lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	4.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy Use	0.10	0.90	0.76	0.01	0.00	0.07	0.07	0.00	0.07	0.07
Mobile Sources	9.60	6.56	64.17	0.15	12.37	0.12	12.49	3.29	0.11	3.40
Waste Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Wastewater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	14.66	7.45	64.93	0.15	12.37	0.19	12.56	3.29	0.18	3.47

Proposed Project - 2020 Emission Rates

lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	17.36	0.09	7.72	0.00	0.00	0.05	0.05	0.00	0.05	0.05
Energy Use	0.20	1.79	1.35	0.01	0.00	0.14	0.14	0.00	0.14	0.14
Mobile Sources	9.87	8.36	78.92	0.20	17.41	0.15	17.56	4.63	0.14	4.77
Waste Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Wastewater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	27.43	10.24	87.99	0.22	17.41	0.34	17.74	4.63	0.33	4.95

Net Emissions (Project - 2020 Existing)

lbs/day	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Area Sources	12.39	0.09	7.72	0.00	0.00	0.05	0.05	0.00	0.05	0.05
Energy Use	0.10	0.89	0.59	0.01	0.00	0.07	0.07	0.00	0.07	0.07
Mobile Sources	0.27	1.81	14.75	0.06	5.04	0.03	5.07	1.34	0.03	1.37
Waste Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water/Wastewater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	12.76	2.79	23.06	0.06	5.04	0.15	5.19	1.34	0.14	1.48
BAAQMD Threshold (Daily)	54	54	NA	NA	NA	NA	82	NA	NA	54
Exceeds Threshold	No	No	NA	NA	NA	NA	No	NA	NA	No

Greenhouse Gas Emissions Summary

Operation

Existing Land Uses - 2016 Emission Rates

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	**CO2e**	
Area Sources	0	9.40E-04	9.40E-04	0	0	1.00E-03	0%
Energy Use	0	784.054	784.054	0.0308	8.94E-03	787.4717	27%
Mobile Sources	0	2,057.14	2,057.14	0.1067	0	2,059.38	71%
Waste Generation	17.4572	0	17.4572	1.0317	0	39.1228	1%
Water/Wastewater	2.0467	9.4666	11.5133	7.43E-03	4.53E-03	13.0742	0%
Total	20	2851	2870	1	0	**2899**	100%
Total without Waste Generation	2	2851	2853	0	0	**2860**	

Proposed Project - 2020 Emission Rates

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	**CO2e**	
Area Sources	0	11.3345	11.3345	2.44E-03	1.70E-04	11.4371	0%
Energy Use	0	1,305.71	1,305.71	0.0496	0.0155	1,311.54	33%
Mobile Sources	0	2,429.86	2,429.86	0.101	0	2,431.98	62%
Waste Generation	66.378	0	66.378	3.9228	0	148.7575	4%
Water/Wastewater	7.0357	36.7381	43.7737	0.0258	0.0156	49.1555	1%
Total	73	3784	3857	4	0	**3953**	100%
Total without Waste Generation	7	3784	3791	0	0	**3804**	

Service Population (residents + employees)	542
Per Service Population Emissions (MTCO2e/SP)	**7.02**
Efficiency Threshold ($MTCO_2e/SP$)	**4.6**
Exceeds Threshold	**Yes**
Service Population with Temporary Residents (residents + temporary hotel residents + employees)	693
Per Service Population Emissions (MTCO2e/SP)	**5.49**
Efficiency Threshold ($MTCO_2e/SP$)	**4.6**
Exceeds Threshold	**Yes**

Net GHG Emissions

MT/yr	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Area Sources	0	11	11	0	0	11	1%
Energy Use	0	522	522	0	0	524	50%
Mobile Sources	0	373	373	0	0	373	35%
Waste Generation	49	0	49	3	0	110	10%
Water/Wastewater	5	27	32	0	0	36	3%
Total	54	933	987	3	0	**1054**	100%
Total without Waste Generation						**944**	90%
BAAQMD Threshold						**1100**	
Exceeds Threshold						**No**	

Construction

Construction

	MTons Total	
2016	109.3096	109.31
2017	1,548.83	1,548.83
2018	717.4716	717.47
2019	669.9677	669.97
Total Construction	**3,046**	3,045.58
30-Year Amortization	**102**	102
BAAQMD Threshold	**1100**	1101
Exceeds Threshold	**No**	No

April 2016 | Health Risk Assessment

MARINA PLAZA PROJECT

City of Cupertino

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PLACEWORKS

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1. Introduction

De Anza Venture, LLC is proposing the Marina Plaza Project, which would involve demolishing an existing 44,000-square-foot commercial building and redeveloping the project site with a 122-room hotel, two mixed-use buildings, with 22,593-square-foot of commercial uses and 188 residential units. The 5.12-acre project site is located at 10145 De Anza Boulevard and 10118 to 10122 Bandley Drive in Cupertino, Santa Clara County, California. This report presents the results of a construction and operational health risk assessment for the proposed project.

The latest version of the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines requires projects to evaluate the impacts of construction activities on sensitive receptors (BAAQMD, 2012). Project construction is anticipated to take place starting in November 2016 and be completed by the end of December 2019, approximately 1,156 calendar days (826 workdays).

The nearest off-site sensitive receptors are the apartments approximately 130 feet northwest of the site, across Alves Drive and Bandley Drive, and the single family residences approximately 210 feet east of the site, across De Anza Boulevard. The BAAQMD has developed *Screening Tables for Air Toxics Evaluation During Construction* (2010) that evaluate construction-related health risks associated with residential, commercial, and industrial projects. According to the screening tables, the residences are closer than the distance of 100 meters (328 feet) that would screen out potential health risks and could be potentially impacted from the proposed construction activities. Therefore, a site-specific construction health risk assessment (HRA) was prepared for the proposed project. An evaluation of construction risks for school-based sensitive receptors within 1,000 feet of the project was also included in the HRA. The nearest school-based receptors are St. Joseph of Cupertino School approximately 390 feet east of the site, and Happy Days Child Development Center approximately 850 feet west of the site.

In addition to project construction, operation of the proposed project would place sensitive receptors in proximity to nearby sources of toxic air contaminants (TACs) and fine particulate matter ($PM_{2.5}$) emissions. Guidance from the California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment (OEHHA), California Air Pollution Control Officers Association (CAPCOA), and the Bay Area Air Quality Management District (BAAQMD) recommend the completion of health risk assessments to determine the impacts of hazardous air emissions upon land use projects that place receptors in the vicinity of existing sources. Evaluated emission sources include vehicles and trucks traveling on high volume roadways with annual average daily traffic volumes exceeding 10,000 vehicles per day. Identified high volume roadways within 1,000 feet of the project include De Anza Boulevard and Stevens Creek Boulevard. Lastly, existing stationary sources located within 1,000 feet were included in the evaluation.

This HRA considers the health impact to off-site sensitive receptors (adults and children in the nearby residences) of construction emissions at the project site from diesel equipment exhaust (diesel particulate matter or DPM) and $PM_{2.5}$. Additionally, the HRA also evaluates the health impacts to on-site receptors (i.e.

1. Introduction

residents) from the vehicular emissions along high volume roadways and stationary sources proximate to the project site.

It should be noted that these health impacts were based on conservative (i.e., health protective) assumptions. The USEPA (2005) and OEHHA (2015) note that conservative assumptions used in a risk assessment are intended to ensure that the estimated risks do not underestimate the actual risks. Therefore, the estimated risks do not necessarily represent actual risks experienced by populations at or near a site. The use of conservative assumptions tends to produce upper-bound estimates of risk and usually overestimate exposure and thus risk. For this residential-based risk assessment, the following conservative assumptions were used:

- It was assumed that maximum exposed children and adults stood outside at the site for 24 hours per day, 350 days per year. In reality, California residents typically will spend a maximum of just over one hour per day outdoors at their residences (CARB, 1991). This would result in lower estimated risk values.

- The calculated risk for infants from third trimester to age 2 is multiplied by a factor of 10 and for children from 2-16 years is multiplied by a factor of 3 to account for early life exposure and uncertainty in child versus adult exposure impacts.

For this school-based risk assessment, the following conservative assumptions were used:

- It was assumed that maximum exposed children and adults stood outside at the site for 8 hours per day, 180 days per year (students) or 250 days per year (staff). In reality, students and staff are exposed to outdoor pollutant concentration levels only during nutrition, lunch, and PE class and are exposed to reduced indoor pollutant concentrations for the remaining school hours. This would result in lower estimated risk values.

- The calculated risk for children from 2-16 years is multiplied by a factor of 3 to account for early life exposure and uncertainty in child versus adult exposure impacts.

Thus, the estimated risks provided in this HRA are conservative.

2. Project Description

The 5.12-acre project site is located at 10145 De Anza Boulevard and 10118 to 10122 Bandley Drive, and is bounded by North De Anza Boulevard to the east, Stevens Creek Boulevard to the south, Alves Drive to the north, and Bandley Drive to the west. Surrounding sensitive land uses include commercial and office uses such as Target, T.J. Maxx, Staples, and Whole Foods Market. Within the same block of the project there are several buildings proposed to remain, including a one-story office building that fronts onto Bandley Drive, three one-story banks that front onto Stevens Creek Boulevard, and two three-story office buildings that front onto North De Anza Boulevard.

The proposed project would demolish and remove an existing 44,000-square-foot commercial building and redeveloping the project site with a 122-room hotel, two mixed-use buildings, with 22,593-square-foot of commercial uses and 188 residential units. The proposed residential buildings are within 175 feet of De Anza Boulevard and 200 feet of Stevens Creek Boulevard.

The project site and vicinity are depicted in Figure 1.

2. Project Description

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Figure 1

Base Map Source: Google Earth Pro, 2016

Project and Off-Site Receptor Locations

2. Project Description

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3. Methodology and Significance Thresholds

The purpose of the HRA is to evaluate the potential health impacts from DPM and $PM_{2.5}$ emitted during construction activities, as well as TACs and $PM_{2.5}$ emitted from nearby mobile and stationary sources during occupancy of the units (operational phase). Construction sources evaluated in this HRA include off-road construction equipment, such as excavators, tractors/loaders/backhoes, cranes, forklifts, generators, welders, and air compressors. Operational sources include vehicular emissions from cars and trucks traveling along De Anza Boulevard and Stevens Creek Boulevard and stationary sources operating within 1,000 feet of the project.

In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts. Due to litigation, BAAQMD is no longer recommending that these thresholds be used as a generally applicable measure of a project's significant air quality impacts, but leaves it up to the discretion of the local enforcement agency (LEA) to determine whether these thresholds are appropriate for their use. For this HRA, the BAAQMD significance thresholds were deemed to be appropriate and the thresholds that were used for this project are shown below:

- Non-compliance with a qualified risk reduction plan
- Excess cancer risk of more than 10 in a million
- Non-cancer hazard index (chronic or acute) greater than 1.0
- Incremental increase in average annual $PM_{2.5}$ concentration of greater than 0.3 $\mu g/m^3$

In addition, there are thresholds of significance for cumulative impacts defined as the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius of a source or receptor, plus the contribution from the project, exceeds the following:

- Non-compliance with a qualified risk reduction plan
- Excess cancer risk of more than 100 in a million
- Non-cancer hazard index (chronic or acute) greater than 10
- Average annual $PM_{2.5}$ concentration of greater than 0.8 $\mu g/m^3$

Since both the City of Cupertino and Santa Clara County do not currently have qualified risk reduction plans, a site-specific analysis of TACs and $PM_{2.5}$ impacts on sensitive receptors was conducted.

The methodology used in this HRA is consistent with the following BAAQMD and the Office of Environmental Health Hazard Assessment (OEHHA) guidance documents:

3. Methodology and Significance Thresholds

- BAAQMD, 2012. *California Environmental Quality Act Air Quality Guidelines*. May 2012.
- BAAQMD, 2010. *Screening Tables for Air Toxics Evaluation During Construction.* May 2010.
- BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. Version 3.0. May 2012.
- OEHHA. 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.* February, 2015.

Potential exposures to DPM and $PM_{2.5}$ from proposed project construction were evaluated for off-site sensitive receptors in close proximity to the site, which includes the multi-family residences northwest of the project site. Potential exposures to TACs and $PM_{2.5}$ from operational activities were evaluated for on-site sensitive receptors of the project. Using air dispersion models and BAAQMD's screening tools, receptor concentrations were estimated and excess lifetime cancer risks and chronic and acute non-cancer hazard indexes were calculated. These risks were then compared to the significance thresholds adopted for this HRA.

4. Emissions Inventories

4.1 CONSTRUCTION EMISSIONS

Construction emissions were calculated as average daily emissions in pounds per day, using the proposed construction schedule and the latest version of California Emissions Estimation Model, known as CalEEMod Version 2013.2.2 (CAPCOA, 2013). DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in lbs per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for $PM_{2.5}$ total, which includes exhaust $PM_{2.5}$ as well as fugitive dust $PM_{2.5}$.

The project was assumed to take place over 38 months (1,156 calendar days or 826 work days) from the November 2016 through the end of December 2019. The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction (i.e., 2016, 2017, 2018, and 2019). The modeled average daily emission rates for the construction scenario are summarized in Table 1. The CalEEMod construction emissions output and emission rate calculations are provided in Appendix A.

Table 1 Construction Activity – Average Daily Emission Rates

Parameter – Year	Onsite Emissions (lbs/day)	Total Offsite Emissions (lbs/day)
DPM – 2016	2.51	0.03
$PM_{2.5}$ - 2016	2.45	0.14
DPM – 2017	3.82	0.25
$PM_{2.5}$ - 2017	4.84	0.92
DPM – 2018	1.67	0.10
$PM_{2.5}$ - 2018	1.58	0.62
DPM – 2019	1.47	0.07
$PM_{2.5}$ - 2019	1.39	0.54

Presented emission rates are average daily emissions.
Source: CalEEMod 2013.2.2.

4.2 OFF-SITE EMISSION SOURCES

Mobile sources within a 1,000-foot radius of the project site were identified using BAAQMD's Highway Screening Analysis Tools (BAAQMD, 2011) and the Draft Transportation Impact Analysis (TIA) prepared for the project (Fehr and Peers, 2016). Two high volume roadways, which are defined as having annual

4. Emissions Inventories

average daily trips (AADT) exceeding 10,000 vehicles per day, were identified (De Anza Boulevard and Stevens Creek Boulevard). No highways were identified. The screening health risk values for each mobile source considered in the assessment are summarized in Table 2.

Table 2 Mobile Source Screening Health Risk Values

Source	Annual Average Daily Trips (AADT)	Cancer Risk (per million)	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
De Anza Boulevard	42,740	8.21	0.030	0.030	0.16
Stevens Creek Boulevard	32,020	7.32	0.030	0.030	0.14
BAAQMD Significance Threshold		10	1.0	1.0	0.3
Exceeds Threshold?		No	No	No	No

Sources: Surface street traffic from Draft TIA for the Marina Plaza Project (Fehr and Peers, 2016), and roadway risk values determined using the BAAQMD Roadway Screening Analysis Calculator (2015).

The screening health risk values for De Anza Boulevard and Stevens Creek Boulevard are below the BAAQMD significance thresholds for individual health risks (10 in a million excess cancer risk or $PM_{2.5}$ concentration greater than 0.3 $\mu g/m^3$), and therefore a more detailed analysis was not required.

In addition to mobile sources, stationary sources within a 1,000-foot radius of the project site were identified and screening level health risks were determined using BAAQMD's Stationary Source Inquiry Forms (BAAQMD, 2012). Additionally for identified gas stations and diesel engines, BAAQMD's distance multiplier methodology was used to refine the screening health risk values from these sources. The health risk values associated with existing stationary sources are summarized in Table 3, and are below the significance thresholds. Therefore, a more detailed analysis was not required.

The emission source proximate to the project site are depicted in Figure 2.

4. Emissions Inventories

Table 3 Stationary Source Health Risk Values

Source	Cancer Risk (per million)	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
De Anza Carwash	3.65	0.06	0.006	n/a
Apple Inc.	3.53	0.001	0.014	0.17
Target Store T-0323	0.00	0.00	0.00	0.24
Chevron 5954	8.26	0.014	0.053	n/a
Verona Owners Association	1.58	0.001	0.006	0.004
Cypress Hotel	4.42	0.001	0.001	0.014
Beacon Gas Station	1.52	0.003	0.038	n/a
Sierra Cleaners	0.00	0.00	0.00	0.00
Dryclean Pro	0.00	0.00	0.00	0.00
Cupertino City Center Buildings	3.13	0.001	0.028	0.018
BAAQMD Significance Threshold	10	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	No

Sources: BAAQMD Stationary Source Inquiry Form (2012) and Distance Adjustment Multiplier for Diesel IC Engines and Gas Stations.

4. Emissions Inventories

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1. De Anza Boulevard
2. Stevens Creek Boulevard
3. De Anza Carwash
4. Apple, Inc.
5. Target Store T-0323
6. Chevron 5954
7. Verona Owners Association
8. Cypress Hotel
9. Beacon Gas Station
10. Sierra Cleaners
11. Dryclean Pro
12. Cupertino City Center Buildings

Project Boundary
1,000-Ft Radius

0 600
Scale (Feet)

Figure 2
Off-Site Emission Sources

Base Map Source: Google Earth Pro, 2016

4. Emissions Inventories

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5. Dispersion Modeling

To assess the impact of emitted compounds on sensitive receptors near the project, air quality modeling using the ISCST3 atmospheric dispersion model was performed. The model is a steady state Gaussian plume model and is an approved model by BAAQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. The on-site construction emissions for the project were modeled as poly-area sources. The off-site mobile sources were modeled as adjacent line volume sources.

The model requires additional input parameters, including chemical emission data and local meteorology. Inputs for the construction and operational phase emission rates are those described in Section 4. Meteorological data obtained from the BAAQMD for the nearest representative met station with the three latest available years of record (Alviso, 1998-2000) were used to represent local weather conditions and prevailing winds. The general prevailing winds at the project are to the southeast. The wind rose for the Alviso meteorological station is provided in Appendix B.

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to the sensitive receptors. To accommodate the model's Cartesian grid format, direction-dependent calculations were obtained by identifying the Universal Transverse Mercator (UTM) coordinates for each source location. In addition, digital elevation model (DEM) data for the area were obtained and included in the model runs to account for complex terrain. An emission release height of 4.15 meters was used as representative of the stack exhaust height for off-road construction equipment and diesel truck traffic, and an initial vertical dispersion parameter of 1.93 m was used, per CARB guidance (2000).

To determine contaminant impacts during construction hours, the model's Season-Hour-Day (SHRDOW) scalar option was invoked to predict flagpole-level concentrations (1.5 m for ground-floor receptors) for emissions generated between the hours of 7:00 AM and 4:00 PM, with a 1-hour lunch break. In addition, a scalar factor was applied to the risk calculations to account for the number of days residents are exposed to construction emissions per year.

For all modeling runs, a unit emission rate of 1 gram per second was used. The unit emission rates were proportioned over the poly-area sources for on-site construction emissions, and divided between the volume sources for off-site hauling emissions. The maximum ISCST3 concentrations from the output files were then multiplied by the emission rates calculated in Appendix A to obtain the maximum flagpole-level concentrations at the maximum exposed receptor (MER). The model output DPM and $PM_{2.5}$ concentrations for the on-site construction sources are provided in Table C1 of Appendix C for residential receptors and Table C5 for school-based receptors. The ISCST3 model output for the emission sources is presented in Appendix B. For the construction analysis, the configuration of the sources and the receptor locations are presented in Figure 1.

5. Dispersion Modeling

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6. Risk Characterizations

6.1 CARCINOGENIC CHEMICAL RISK

A threshold of ten in a million (10E–06) has been established as a level posing no significant risk for exposures to carcinogens.

Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. The cancer risk probability is determined by multiplying the chemical's annual concentration by its cancer potency factor (CPF), a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It is an upper-limit estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu g/m^3$) over a lifetime of 70 years.

Recent guidance from OEHHA recommends a refinement to the standard point estimate approach with the use of age-specific breathing rates and age sensitivity factors (ASFs) to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor in units of inverse dose expressed in milligrams per kilogram per day $(mg/kg/day)^{-1}$ to derive the cancer risk estimate. Therefore, to accommodate the unique exposures associated with the residential and school-based receptors, the following dose algorithm was used.

$$\text{Dose}_{\text{AIR,per age group}} = (C_{air} \times EF \times [\frac{BR}{BW}] \times A \times CF)$$

Where:

$Dose_{AIR}$	=	dose by inhalation (mg/kg-day), per age group
C_{air}	=	concentration of contaminant in air ($\mu g/m^3$)
EF	=	exposure frequency (number of days/365 days)
BR/BW	=	daily breathing rate normalized to body weight (L/kg-day)
A	=	inhalation absorption factor (default = 1)
CF	=	conversion factor ($1x10^{-6}$, µg to mg, L to m^3)

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor included a correction for absorption across the lung. For this assessment, the default value of 1 was used. For residential receptors, the exposure frequency (EF) of 0.96 is used to represent 350 days per year to allow for a two week period away from home each year (OEHHA, 2015). The 95th percentile daily breathing rates (BR/BW), exposure duration (ED), age sensitivity factors (ASFs), and fraction of time at home (FAH) for the various age groups are provided herein:

6. Risk Characterizations

Age Groups	BR/BW (L/kg-day)	ED	ASF	FAH
Third trimester	361	0.25	10	0.85
0-2 age group	1,090	2	10	0.85
2-9 age group	861	7	3	0.72
2-16 age group	745	14	3	0.72
16-30 age group	335	14	1	0.73
16-70 age group	290	54	1	0.73

For construction analysis, the exposure duration spans the length of construction (e.g. 1,156 days or 3.2 years).

To represent the unique characteristics of the school population, the assessment employed the USEPA's guidance to develop viable dose estimates based on reasonable maximum exposure, defined as the "highest exposure that is reasonably expected to occur" for a given receptor population. Lifetime risk values for the student population were adjusted to account for an exposure of 180 days per year for the length of construction. In addition, the calculated risk for students is multiplied by an ASF weighting factor of 3 (for children ages 5 to 14 years) to account for early life sensitivity to pollutant exposures (OEHHA, 2015). To assess staff-related risk, exposures were adjusted to account for an employment period of 250 days per year for the length of construction. This timeline is considered appropriate for potential workplace exposures established by OEHHA (2015).

To calculate the overall cancer risk, the risk for each appropriate age group is calculated per the following equation:

$$\text{Cancer Risk}_{\text{AIR}} = \text{Dose}_{\text{AIR}} \times \text{CPF} \times \text{ASF} \times \text{FAH} \times \frac{\text{ED}}{AT}$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
CPF	=	cancer potency factor, chemical-specific $(\text{mg/kg-day})^{-1}$
ASF	=	age sensitivity factor, per age group
FAH	=	fraction of time at home, per age group (for residential receptors only)
ED	=	exposure duration (years)
AT	=	averaging time period over which exposure duration is averaged (always 70 years)

The CPFs used in the assessment were obtained from OEHHA guidance. The excess lifetime cancer risks during the construction period and during the operational phase to the maximally exposed resident were calculated based on the factors provided above. The cancer risks for each age group are summed to estimate the total cancer risk for each toxic chemical species. For purposes of this assessment, the calculated residential cancer risks associated with construction activities are based on the 3rd trimester, 0 to 2 year old, and 2 to 16 year old age groups. The final step converts the cancer risk in scientific notation to a whole number that expresses the cancer risk in "chances per million" by multiplying the cancer risk by a factor of $1x10^6$ (i.e. 1 million).

For construction, the calculated results are provided in Appendix C. For the operational phase, the results of the screening level analysis are provided in Appendix D.

6.2 NON-CARCINOGENIC HAZARDS

An evaluation of the potential non-cancer effects of chronic and acute chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor level (flagpole) concentration of each chemical compound with the appropriate reference exposure limit (REL). Available RELs promulgated by OEHHA were considered in the assessment.

To quantify non-carcinogenic impacts, the hazard index approach was used. The hazard index assumes that chronic and acute sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were used. To calculate the hazard index, each chemical concentration or dose is divided by the appropriate toxicity value. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds one, a health hazard is presumed to exist.

For construction, the chronic hazard analysis for DPM is provided in Appendix C. For the operational phase, the chronic and acute hazard analysis is provided in Appendix D. The calculations contain the relevant exposure concentrations and corresponding reference dose values used in the evaluation of non-carcinogenic exposures.

6.3 CRITERIA POLLUTANTS

The BAAQMD has recently incorporated $PM_{2.5}$ into the District's CEQA significance thresholds due to recent studies that show adverse health impacts from exposure to this pollutant. An incremental increase of greater than 0.3 $\mu g/m^3$ for the annual average $PM_{2.5}$ concentration is considered to be a significant impact. The modeling results for $PM_{2.5}$ are summarized in Tables 4 and 6.

6. Risk Characterizations

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7. Conclusions

The following section summarizes the findings and conclusion for this HRA report.

7.1 CONSTRUCTION HEALTH RISKS

The residential health risk values are based on the maximum modeled receptor concentration over the construction exposure period, conservatively assuming a 24-hour per day outdoor exposure and averaged over a 70-year lifetime. According to the modeling results and as shown in Figure 1, the residential MER is the southeastern-most residential building of the apartment complex to the northwest of the project site. The school-based MER is the southwestern most receptor at St. Joseph of Cupertino School to the east. Results of the health risk assessment shown in Table 4 indicate that the maximum incremental cancer risk during the unmitigated construction phase of the project at the MER is 73.1 per million, which is above the significance threshold of 10 per million.

For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than one for the MER. Therefore, chronic non-carcinogenic hazards are within acceptable limits. However, the highest $PM_{2.5}$ annual concentration at the residential MER is 0.46 μg/m^3 and would exceed the BAAQMD significance threshold of 0.3 μg/m^3. The chronic hazard index and $PM_{2.5}$ annual concentrations for school-based receptors were below BAAQMD's significance thresholds.

Table 4 Construction HRA Results - Unmitigated

Receptor	Cancer Risk (per million)	Chronic Hazard Index	$PM_{2.5}$ (μg/m^3) [1]
Maximum Exposed Receptor – Resident	73.1	0.18	0.46
Maximum Exposed Receptor – School Student	15.7	0.086	0.22
Maximum Exposed Receptor – School Staff	3.22	0.086	0.22
BAAQMD Threshold	10	1.0	0.3
Exceeds Threshold?	Yes	No	Yes

Sources: Lakes AERMOD View, 9.1, 2015.
[1] From year 2017 which represents the highest maximum annual $PM_{2.5}$ concentration.

As the calculated cancer risk at the residential and student MER exceeds the 10 per million significance threshold, and the $PM_{2.5}$ annual concentration at the residential MER exceeds the BAAQMD significance threshold of 0.3 μg/m^3, the following mitigation measure is recommended to minimize risk impacts:

MIT During construction, the construction contractor(s) shall use construction equipment fitted with Level 3 Diesel Particulate Filters (DPF) and engines that meet the United States Environmental Protection Agency (EPA) Certified Tier 3 emissions standards for equipment

7. Conclusions

of 50 horsepower or more. The construction contractor shall maintain a list of all operating equipment in use on the project site for verification by the City of Cupertino Building Division official or their designee. The construction equipment list shall state the makes, models, and number of construction equipment on-site. Equipment shall properly service and maintain construction equipment in accordance with the manufacturer's recommendations. The construction contractor shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with CARB Rule 2449. Prior to issuance of any construction permit, the construction contractor shall ensure that all construction plans submitted to the City of Cupertino Planning Department and/or Building Division clearly show the requirement for Level 3 DPF and EPA Tier 3 or higher emissions standards for construction equipment over 50 horsepower.

Tables 5 and 6 show the average daily emission rates and calculated cancer risk at the MER, respectively, with incorporation of the mitigation measure.

Table 5 Construction Activity – Average Daily Emission Rates With Mitigation

Parameter – Year	Onsite Emissions (lbs/day)[1]	Total Offsite Emissions (lbs/day)[1]
DPM – 2016	0.15	0.03
$PM_{2.5}$ - 2016	0.26	0.14
DPM – 2017	0.34	0.25
$PM_{2.5}$ - 2017	1.63	0.92
DPM – 2018	0.26	0.10
$PM_{2.5}$ - 2018	0.26	0.62
DPM – 2019	0.23	0.07
$PM_{2.5}$ - 2019	0.23	0.54

Presented emission rates are average daily emissions.
Source: CalEEMod 2013.2.2.
[1] Accounts for emissions reductions from implementation of mitigation which requires use of Level 3 Diesel Particulate Filters and Tier 3 rated engines for construction equipment with a horsepower rating of 50 horsepower or higher.

Table 6 Construction HRA Results – With Mitigation

Receptor	Cancer Risk (per million)	Chronic Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)[1]
Maximum Exposed Receptor – Resident	8.27	0.019	0.16
Maximum Exposed Receptor – School Student	1.65	0.009	0.074
Maximum Exposed Receptor – School Staff	0.34	0.009	0.074
BAAQMD Threshold	10	1.0	0.3
Exceeds Threshold?	No	No	No

Sources: Lakes AERMOD View, 9.1, 2015.
[1] From year 2017 which represents the highest maximum annual $PM_{2.5}$ concentration.

As shown in Table 6, incorporation of mitigation would reduce cancer risk at the residential MER to 8.27 per million and the student MER to 1.65 per million, which are below the 10 per million significance threshold. Additionally, the mitigated $PM_{2.5}$ annual concentration at the residential MER is 0.16 $\mu g/m^3$ and would not exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$. The results of this construction health risk assessment indicate that the project would have a less than significant impact with respect to chronic non-carcinogenic hazard for the surrounding sensitive receptors during the 38-month construction period. Additionally, with incorporation of mitigation, excess cancer risk and $PM_{2.5}$ impacts would also be less than significant to the nearby sensitive receptors. It should also be noted that conservative assumptions were used in preparing the health risk assessment. For example, residential receptors are assumed to spend 24 hours per day outdoors and exposed to construction emissions whereas California residents typically will spend a maximum of just over one hour per day outdoors at their residences (CARB, 1991), which would result in much lower estimated risk values.

7.2 OPERATIONAL HEALTH RISKS

For the operational HRA, the screening level health risk values from individual and cumulative emission sources, provided in Table 7, indicate that the excess cancer risk from each individual mobile and stationary source within 1,000 feet of the site is less than the threshold of 10 in a million for a lifetime cancer risk and less than the non-carcinogenic chronic and acute hazard indexes of 1.0. The $PM_{2.5}$ concentrations for all individual emission sources are below the significance threshold of 0.3 $\mu g/m^3$. In addition, the cumulative health risks from all evaluated emission sources are below the cumulative significance thresholds.

Based on a comparison to the carcinogenic and non-carcinogenic thresholds established by OEHHA and BAAQMD, hazardous air emissions generated from the stationary and mobile sources within a 1,000-foot radius are not anticipated to pose an actual or potential endangerment to residents of the project site and no mitigation measures are required.

7. Conclusions

Table 7 Operational HRA Results

Receptor	Cancer Risk (per million)	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
De Anza Boulevard[1]	8.21	0.030	0.030	0.16
Stevens Creek Boulevard[1]	7.32	0.030	0.030	0.14
De Anza Carwash[2]	3.65	0.06	0.006	n/a
Apple Inc.[2]	3.53	0.001	0.014	0.17
Target Store T-0323[2]	0.00	0.00	0.00	0.24
Chevron 5954[2]	8.26	0.014	0.053	n/a
Verona Owners Association[2]	1.58	0.001	0.006	0.004
Cypress Hotel[2]	4.42	0.001	0.001	0.014
Beacon Gas Station[2]	1.52	0.003	0.038	n/a
Sierra Cleaners[2]	0.00	0.00	0.00	0.00
Dryclean Pro[2]	0.00	0.00	0.00	0.00
Cupertino City Center Buildings[2]	3.13	0.001	0.028	0.018
BAAQMD Threshold	10	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	No
Total Cumulative Risk from All Sources	41.6	0.086	0.21	0.59
BAAQMD Threshold	100	10.0	10.0	0.8
Exceeds Threshold?	No	No	No	No

Sources: Lakes AERMOD View, 9.1, 2015.
1 BAAQMD Roadway Screening Analysis Calculator (2015).
2 BAAQMD Stationary Source Inquiry Form (2012) and Distance Adjustment Multiplier for Diesel IC Engines and Gas Stations.

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8. References

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Appendix A. Emission Rate Calculations

Appendix

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Construction Emissions - DPM and PM2.5
Input to ISCST3 Model

Onsite Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2016 Onsite Emissions	Average Daily Emissions (lbs/day)	2.51	2.45
	Average Daily Emissions (lbs/hr)	3.14E-01	3.06E-01
	Emission Rate (g/s)	3.95E-02	3.86E-02
2017 Onsite Emissions	Average Daily Emissions (lbs/day)	3.82	4.84
	Average Daily Emissions (lbs/hr)	4.77E-01	6.05E-01
	Emission Rate (g/s)	6.01E-02	7.63E-02
2018 Onsite Emissions	Average Daily Emissions (lbs/day)	1.67	1.58
	Average Daily Emissions (lbs/hr)	2.08E-01	1.98E-01
	Emission Rate (g/s)	2.62E-02	2.49E-02
2019 Onsite Emissions	Average Daily Emissions (lbs/day)	1.47	1.39
	Average Daily Emissions (lbs/hr)	1.83E-01	1.74E-01
	Emission Rate (g/s)	2.31E-02	2.19E-02

Note: Emissions assumed to be evenly distributed over entire construction phase area.

Offsite Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2016 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.026	0.14
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	3.05E-04	1.63E-03
	Emission Rate (lbs/hr)	3.81E-05	2.03E-04
	Emission Rate (g/s)	4.81E-06	2.56E-05
2017 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.25	0.92
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	2.93E-03	1.07E-02
	Emission Rate (lbs/hr)	3.66E-04	1.33E-03
	Emission Rate (g/s)	4.61E-05	1.68E-04
2018 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.10	0.62
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.11E-03	7.12E-03
	Emission Rate (lbs/hr)	1.38E-04	8.90E-04
	Emission Rate (g/s)	1.74E-05	1.12E-04
2019 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.072	0.54
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	8.38E-04	6.23E-03
	Emission Rate (lbs/hr)	1.05E-04	7.79E-04
	Emission Rate (g/s)	1.32E-05	9.82E-05

Note: Emissions evenly distributed over 19 modeled volume sources.

			Residential Risk Scalar [5]
Hours per work day (7:00 AM to 4:00 PM, 1-hour of breaks) [4]	2016-2019	8	
Total construction days per year	2016	44	0.17
	2017	260	1.00
	2018	261	1.00
	2019	261	1.00

	Demolition	Grading
Haul Length (miles)	15	20
Number of Haul Trips	352	13,126
Proportioned Hauling Length (miles)	**19.9**	
Haul Length within 1,000 ft of Site (mile) [3]	**0.23**	

[1] DPM emissions taken as PM_{10} exhaust emissions from CalEEMod average daily emissions.

[2] $PM_{2.5}$ emissions taken as total $PM_{2.5}$ (exhaust and fugitive dust) emissions from CalEEMod average daily emissions.

[3] Emissions from CalEEMod offsite average daily emissions, which is based on haul truck trip distance of 19.9 miles, are proportioned to evaluate emissions from the **0.23**-mile route within 1,000 of the project site.

[4] Work hours applied in Season-Hour-Day of the Week (SHRDOW) variable emissions module in ISCST3 model (see App B - ISCST3 Output Files).

[5] Residential risk scalars determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

Construction Emissions - DPM and PM2.5
Input to ISCST3 Model
Tier 3 Engines and Level 3 Diesel Particulate Filers (for equipment > 50 HP)

Onsite Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2016 Onsite Emissions	Average Daily Emissions (lbs/day)	0.15	0.26
	Average Daily Emissions (lbs/hr)	1.88E-02	3.27E-02
	Emission Rate (g/s)	2.37E-03	4.12E-03
2017 Onsite Emissions	Average Daily Emissions (lbs/day)	0.34	1.63
	Average Daily Emissions (lbs/hr)	4.24E-02	2.03E-01
	Emission Rate (g/s)	5.35E-03	2.56E-02
2018 Onsite Emissions	Average Daily Emissions (lbs/day)	0.26	0.26
	Average Daily Emissions (lbs/hr)	3.29E-02	3.29E-02
	Emission Rate (g/s)	4.14E-03	4.14E-03
2019 Onsite Emissions	Average Daily Emissions (lbs/day)	0.23	0.23
	Average Daily Emissions (lbs/hr)	2.92E-02	2.92E-02
	Emission Rate (g/s)	3.68E-03	3.68E-03

Note: Emissions assumed to be evenly distributed over entire construction phase area.

Offsite Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2016 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.026	0.14
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	3.05E-04	1.63E-03
	Emission Rate (lbs/hr)	3.81E-05	2.03E-04
	Emission Rate (g/s)	4.81E-06	2.56E-05
2017 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.25	0.92
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	2.93E-03	1.07E-02
	Emission Rate (lbs/hr)	3.66E-04	1.33E-03
	Emission Rate (g/s)	4.61E-05	1.68E-04
2018 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.10	0.62
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.11E-03	7.12E-03
	Emission Rate (lbs/hr)	1.38E-04	8.90E-04
	Emission Rate (g/s)	1.74E-05	1.12E-04
2019 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.072	0.54
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	8.38E-04	6.23E-03
	Emission Rate (lbs/hr)	1.05E-04	7.79E-04
	Emission Rate (g/s)	1.32E-05	9.82E-05

Note: Emissions evenly distributed over 19 modeled volume sources.

			Residential Risk Scalar [5]
Hours per work day (7:00 AM to 4:00 PM, 1-hour of breaks) [4]	2016-2019	8	
Total construction days per year	2016	44	0.17
	2017	260	1.00
	2018	261	1.00
	2019	261	1.00

	Demolition	Grading
Haul Length (miles)	15	20
Number of Haul Trips	352	13,126
Proportioned Hauling Length (miles)	**19.9**	
Haul Length within 1,000 ft of Site (mile) [3]	**0.23**	

[1] DPM emissions taken as PM_{10} exhaust emissions from CalEEMod average daily emissions.

[2] $PM_{2.5}$ emissions taken as total $PM_{2.5}$ (exhaust and fugitive dust) emissions from CalEEMod average daily emissions.

[3] Emissions from CalEEMod offsite average daily emissions, which is based on haul truck trip distance of 19.9 miles, are proportioned to evaluate emissions from the **0.23**-mile route within 1,000 of the project site.

[4] Work hours applied in Season-Hour-Day of the Week (SHRDOW) variable emissions module in ISCST3 model (see App B - ISCST3 Output Files).

[5] Residential risk scalars determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

Bay Area Air Quality Management District

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

• County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.

• Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.

• Side of the Roadway: Identify on which side of the roadway the project is located.

• Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.

• Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.

Notes and References listed below the Search Boxes

Search Parameters

County	Santa Clara
Roadway Direction	North-South
Side of the Roadway	West
Distance from Roadway	175 feet
Annual Average Daily Traffic (ADT)	42,740

Results

Santa Clara County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.163 ($\mu g/m^3$)

Cancer Risk

8.21 (per million)

Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

Bay Area Air Quality Management District

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

• County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.

• Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.

• Side of the Roadway: Identify on which side of the roadway the project is located.

• Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.

• Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.

Notes and References listed below the Search Boxes

Search Parameters

County	Santa Clara
Roadway Direction	East-West
Side of the Roadway	North
Distance from Roadway	200 feet
Annual Average Daily Traffic (ADT)	32,020

Results

Santa Clara County

EAST-WEST DIRECTIONAL ROADWAY

PM2.5 annual average

0.141 ($\mu g/m^3$)

Cancer Risk

7.32 (per million)

Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

Bay Area Air Quality Management District

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD. This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

For guidance on conducting a risk & hazard screening, including for roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart. Also see the District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requestor Contact Information	
Contact Name:	Steve Bush
Affiliation:	PlaceWorks
Phone:	510-848-3815, ext. 316
Email:	sbush@placeworks.com
Date of Request	3/22/2016
Project Name:	Marina Plaza
Address:	10122 Bandley Dr
City:	Cupertino
County:	Santa Clara
Type (residential, commercial, mixed use, industrial, etc.):	mixed use
Project size (# of units, or building square feet):	5.1 acres, 188 dwelling units, 122 unit hotel
Comments:	
Please provide emission rate and generator testing information, or risk values for any additionally identified sources. See attached map.	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, http://www.google.com/earth/download/ge/, and then download the county specific Google Earth stationary source application files from the District's website, http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Identify stationary sources near the project. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.
5. List the stationary source information in Table B Section 1 below.
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Alison Kirk at 415-749-5169, or akirk@baaqmd.gov .

Map B: Snapshot of Google Earth with Plant G8736 Information Table Selected Showing HRSA Values

Note the asterisk next to the plant name. This means that the values that appear below are from the HRSA. These values cannot be further adjusted using our screening tools, such as the diesel multiplier sheet. These values are based on modeling. If the Information Table says "Contact District Staff" include in Table B

Table B: Stationary Sources

Table B Section 1: Requestor fills out these columns based on Google Earth data | **Table B Section 2: BAAQMD returns form with additional information in these columns as needed**

Distance from Receptor (feet)	Plant # or Gas Dispensary #	Facility Name	Street Address	Screening Level Cancer Risk (1)	Screening Level Hazard Index (1)	Screening Level PM2.5 (1)	Permit #s (2)	Source #s (2)	Fuel Code (3)	Type of Source(s) (4)	HRSA Ap # (5)	HRSA Date (6)	HRSA Engineer (7)	HRSA Cancer Risk in a million	Age Sensitivity Factor (8)	HRSA Adjusted Cancer Risk	HRSA Chronic Health (9)	HRSA PM2.5 Risk	Status/Comments
60	G11920	De Anza Carwash	10165 N De Anza Blvd	3.65	0.006	na				gas station								0	consider using screening level values with distance multiplier.
60	19045	Groundwater Cleaners	10165 N De Anza Blvd	0.410	0.000	0.000				plant closed								0	consider using screening level values.
250	20033	Apple Inc (generator)	10201 N De Anza Blvd	no data	no data	no data				plant closed								0	plant closed.
625	16709	Apple Inc	20605 Lazaneo Dr	39.17	0.014	0.009				diesel gen	23182	5/9/2011	DYC	6.400	1	6.4		0.020062696	New plant number 9721. HRSA only covers S-4. See attached sheet for info. Emissions data also attached.
?	G11122	Conoco Phillips #2705721	20755 Stevens Creek Blvd	10.83	0.018	na				gas station	n/a							0	consider using screening level values with distance
300	17616	Target Store T-0323	20745 Stevens Creek Blvd	0.00	0.000	0.243				diesel engine								0	consider using screening level values.
170	G3420	Chevron 5954	10023 S. De Anza Blvd	31.759	0.053	na				gas station	n/a							0	consider using screening level values with distance multiplier.

650	16623	Verona Owners Association	20488 Stevens Creek Blvd	17.52	0.006	0.004				diesel engine	n/a							0	consider using screening level values with distance multiplier. Emissions data also attached
750	14562	Cypress Hotel	10050 S. De Anza Blvd	1.75	0.001	0.000					5604	2/27/2003	DYC	2.600	1.7	4.42		0.013855799	consider using HRSA values; new plant number 23162.
400	G486	Beacon Gas Station	10002 N De Anza Blvd	23.10	0.038	na				gas station	n/a							0	consider using screening level values with distance multiplier.
1,000	18228	Sierra Cleaners	10150 S De Anza Blvd	0	0	0.00				petro closed loop machine								0	no risk/concentration.
900	3049	Dryclean Pro	20379 Stevens Creek Blvd	20.2	0.054	0				petro closed loop machine								0	no risk/concentration.
1,000	18553	Cupertino City Center Buildings	20400 Stevens Creek Blvd	78.34	0.028	0.018		1,2		diesel fire pump, diesel gen	n/a							0	consider using screening level values with distance multiplier. Emissions data also attached
	9721	Apple	2 Infinite Loop,							see attached list	11786	3/18/2005	csf	2.230	1.7	3.791	2.26 E-03	0.011884013	HRSA only covers S-9; see attached for emissions data also attached
																		0	

Footnotes:

1. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.

2. Each plant may have multiple permits and sources.

3. Fuel codes: 98 = diesel, 189 = Natural Gas.

4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.

5. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.

6. The date that the HRSA was completed.

7. Engineer who completed the HRSA. For District purposes only.

8. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.

9. The HRSA "Chronic Health" number represents the Hazard Index.

10. Further information about common sources:

a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.

b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or less. To be conservative, requestor should assume the cancer risk is 1 in a million and the hazard index is

c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010.

Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.

d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect the number of years perc use will continue after the project's residents or other sensitive receptors (such as students, patients, etc) take occupancy.

e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.

Appendix B. ISCST3 Model Output Files

Appendix

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Model Output
Unit Emission Rates (1 g/s)

Results Summary

Marina Plaza - Construction HRA
Residential Receptors

Concentration - Source Group: 1 On-site Emissions

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		6.03114	ug/m^3	585525.50	4131397.00	74.42	0.00	0.00	

Concentration - Source Group: 2 Off-site Emissions

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		6.54340	ug/m^3	585773.50	4131398.25	71.79	0.00	0.00	

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
*** ISCST3 - VERSION 02035 ***    *** Marina Plaza - Construction HRA                                    ***        03/22/16
                                   *** Residential Receptors                                             ***        11:14:50
**MODELOPTs:                                                                                                      PAGE   1
CONC                    URBAN ELEV  FLGPOL DFAULT

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

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE =  F
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for URBAN/Non-SO2

**Model Accepts Receptors on ELEV Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes:    20 Source(s);      2 Source Group(s); and    1467 Receptor(s)

**The Model Assumes A Pollutant Type of:  OTHER

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

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

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

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
**Misc. Inputs:  Anem. Hgt. (m) =     1.00 ;    Decay Coef. =    0.000     ;    Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =     1.3 MB of RAM.

**Input Runstream File:          MarinaPlaza.INP
**Output Print File:             MarinaPlaza.OUT
**Detailed Error/Message File:   MARINA~1.ERR
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
L0000001	0	0.52632E-01	585634.5	4131133.5	73.6	4.15	16.28	1.93	SHRDOW
L0000002	0	0.52632E-01	585669.5	4131133.0	73.0	4.15	16.28	1.93	SHRDOW
L0000003	0	0.52632E-01	585704.5	4131132.8	72.6	4.15	16.28	1.93	SHRDOW
L0000004	0	0.52632E-01	585736.6	4131135.2	72.7	4.15	16.28	1.93	SHRDOW
L0000005	0	0.52632E-01	585736.6	4131170.3	72.2	4.15	16.28	1.93	SHRDOW
L0000006	0	0.52632E-01	585736.7	4131205.2	72.1	4.15	16.28	1.93	SHRDOW
L0000007	0	0.52632E-01	585736.8	4131240.3	72.1	4.15	16.28	1.93	SHRDOW
L0000008	0	0.52632E-01	585736.9	4131275.2	72.1	4.15	16.28	1.93	SHRDOW
L0000009	0	0.52632E-01	585736.9	4131310.2	72.1	4.15	16.28	1.93	SHRDOW
L0000010	0	0.52632E-01	585737.0	4131345.2	72.0	4.15	16.28	1.93	SHRDOW
L0000011	0	0.52632E-01	585737.1	4131380.3	72.1	4.15	16.28	1.93	SHRDOW
L0000012	0	0.52632E-01	585737.2	4131415.2	72.3	4.15	16.28	1.93	SHRDOW
L0000013	0	0.52632E-01	585737.3	4131450.3	72.5	4.15	16.28	1.93	SHRDOW
L0000014	0	0.52632E-01	585737.3	4131485.2	72.6	4.15	16.28	1.93	SHRDOW
L0000015	0	0.52632E-01	585737.4	4131520.3	72.3	4.15	16.28	1.93	SHRDOW
L0000016	0	0.52632E-01	585737.5	4131555.2	72.1	4.15	16.28	1.93	SHRDOW
L0000017	0	0.52632E-01	585737.6	4131590.3	72.3	4.15	16.28	1.93	SHRDOW
L0000018	0	0.52632E-01	585737.6	4131625.2	72.4	4.15	16.28	1.93	SHRDOW
L0000019	0	0.52632E-01	585737.7	4131660.3	72.3	4.15	16.28	1.93	SHRDOW

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
1	0	0.51290E-04	585621.2	4131151.5	73.9	4.15	20	1.93	SHRDOW

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
1	1 ,
2	L0000001, L0000002, L0000003, L0000004, L0000005, L0000006, L0000007, L0000008, L0000009, L0000010, L0000011, L0000012, L0000013, L0000014, L0000015, L0000016, L0000017, L0000018, L0000019,

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

CONC URBAN ELEV FLGPOL DFAULT

* SOURCE EMISSION RATE SCALARS WHICH VARY SEASONALLY, DIURNALLY AND BY DAY OF WEEK (SHRDOW) *

SOURCE ID = 1 ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
							SEASON = WINTER;	DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;	DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;	DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = FALL ;	DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = WINTER;	DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;	DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;	DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = FALL ;	DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = WINTER;	DAY OF WEEK = SUNDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;	DAY OF WEEK = SUNDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;	DAY OF WEEK = SUNDAY							

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

SEASON = FALL ; DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

CONC URBAN ELEV FLGPOL DFAULT

* SOURCE EMISSION RATE SCALARS WHICH VARY SEASONALLY, DIURNALLY AND BY DAY OF WEEK (SHRDOW) *

SOURCE ID = L0000001 to L0000019 ; SOURCE TYPE = VOLUME :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
							SEASON = WINTER;	DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;	DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;	DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = FALL ;	DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = WINTER;	DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;	DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;	DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = FALL ;	DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = WINTER;	DAY OF WEEK = SUNDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;	DAY OF WEEK = SUNDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;	DAY OF WEEK = SUNDAY							

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

SEASON = FALL ; DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585295.5,	4131397.0,	77.0,	1.5);	(585305.5,	4131397.0,	77.1,	1.5);
(585315.5,	4131397.0,	77.2,	1.5);	(585325.5,	4131397.0,	76.9,	1.5);
(585335.5,	4131397.0,	76.8,	1.5);	(585345.5,	4131397.0,	76.6,	1.5);
(585355.5,	4131397.0,	76.6,	1.5);	(585365.5,	4131397.0,	76.7,	1.5);
(585375.5,	4131397.0,	76.6,	1.5);	(585385.5,	4131397.0,	76.1,	1.5);
(585395.5,	4131397.0,	76.1,	1.5);	(585405.5,	4131397.0,	76.1,	1.5);
(585415.5,	4131397.0,	75.7,	1.5);	(585425.5,	4131397.0,	75.7,	1.5);
(585435.5,	4131397.0,	75.7,	1.5);	(585445.5,	4131397.0,	75.6,	1.5);
(585455.5,	4131397.0,	75.6,	1.5);	(585465.5,	4131397.0,	75.3,	1.5);
(585475.5,	4131397.0,	75.2,	1.5);	(585485.5,	4131397.0,	75.4,	1.5);
(585495.5,	4131397.0,	75.4,	1.5);	(585505.5,	4131397.0,	74.4,	1.5);
(585515.5,	4131397.0,	74.4,	1.5);	(585525.5,	4131397.0,	74.4,	1.5);
(585295.5,	4131407.0,	77.1,	1.5);	(585305.5,	4131407.0,	77.3,	1.5);
(585315.5,	4131407.0,	77.3,	1.5);	(585325.5,	4131407.0,	76.9,	1.5);
(585335.5,	4131407.0,	76.7,	1.5);	(585345.5,	4131407.0,	76.7,	1.5);
(585355.5,	4131407.0,	76.7,	1.5);	(585365.5,	4131407.0,	77.0,	1.5);
(585375.5,	4131407.0,	76.8,	1.5);	(585385.5,	4131407.0,	76.3,	1.5);
(585395.5,	4131407.0,	76.2,	1.5);	(585405.5,	4131407.0,	76.2,	1.5);
(585415.5,	4131407.0,	75.8,	1.5);	(585425.5,	4131407.0,	75.7,	1.5);
(585435.5,	4131407.0,	75.9,	1.5);	(585445.5,	4131407.0,	75.8,	1.5);
(585455.5,	4131407.0,	75.7,	1.5);	(585465.5,	4131407.0,	75.4,	1.5);
(585475.5,	4131407.0,	75.4,	1.5);	(585485.5,	4131407.0,	75.8,	1.5);
(585495.5,	4131407.0,	75.6,	1.5);	(585505.5,	4131407.0,	74.5,	1.5);
(585515.5,	4131407.0,	74.5,	1.5);	(585525.5,	4131407.0,	74.5,	1.5);
(585295.5,	4131417.0,	77.2,	1.5);	(585305.5,	4131417.0,	77.3,	1.5);
(585315.5,	4131417.0,	76.7,	1.5);	(585325.5,	4131417.0,	76.7,	1.5);
(585335.5,	4131417.0,	76.7,	1.5);	(585345.5,	4131417.0,	76.8,	1.5);
(585355.5,	4131417.0,	76.9,	1.5);	(585365.5,	4131417.0,	76.9,	1.5);
(585375.5,	4131417.0,	76.6,	1.5);	(585385.5,	4131417.0,	76.3,	1.5);
(585395.5,	4131417.0,	76.2,	1.5);	(585405.5,	4131417.0,	75.9,	1.5);
(585415.5,	4131417.0,	75.8,	1.5);	(585425.5,	4131417.0,	75.9,	1.5);
(585435.5,	4131417.0,	75.8,	1.5);	(585445.5,	4131417.0,	75.7,	1.5);
(585455.5,	4131417.0,	75.6,	1.5);	(585465.5,	4131417.0,	75.6,	1.5);
(585475.5,	4131417.0,	75.7,	1.5);	(585485.5,	4131417.0,	75.7,	1.5);
(585495.5,	4131417.0,	75.3,	1.5);	(585505.5,	4131417.0,	74.7,	1.5);
(585515.5,	4131417.0,	74.7,	1.5);	(585525.5,	4131417.0,	74.6,	1.5);
(585295.5,	4131427.0,	77.2,	1.5);	(585305.5,	4131427.0,	77.2,	1.5);
(585315.5,	4131427.0,	76.7,	1.5);	(585325.5,	4131427.0,	76.7,	1.5);
(585335.5,	4131427.0,	76.7,	1.5);	(585345.5,	4131427.0,	76.8,	1.5);
(585355.5,	4131427.0,	76.8,	1.5);	(585365.5,	4131427.0,	76.9,	1.5);
(585375.5,	4131427.0,	76.7,	1.5);	(585385.5,	4131427.0,	76.6,	1.5);

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
( 585395.5, 4131427.0,      76.5,       1.5);        ( 585405.5, 4131427.0,      76.2,       1.5);
( 585415.5, 4131427.0,      75.9,       1.5);        ( 585425.5, 4131427.0,      75.9,       1.5);
( 585435.5, 4131427.0,      75.9,       1.5);        ( 585445.5, 4131427.0,      75.8,       1.5);
( 585455.5, 4131427.0,      75.7,       1.5);        ( 585465.5, 4131427.0,      75.6,       1.5);
( 585475.5, 4131427.0,      75.7,       1.5);        ( 585485.5, 4131427.0,      75.8,       1.5);
( 585495.5, 4131427.0,      75.5,       1.5);        ( 585505.5, 4131427.0,      74.8,       1.5);
( 585515.5, 4131427.0,      74.8,       1.5);        ( 585525.5, 4131427.0,      74.7,       1.5);
( 585295.5, 4131437.0,      77.0,       1.5);        ( 585305.5, 4131437.0,      77.2,       1.5);
( 585315.5, 4131437.0,      77.2,       1.5);        ( 585325.5, 4131437.0,      76.9,       1.5);
( 585335.5, 4131437.0,      76.7,       1.5);        ( 585345.5, 4131437.0,      76.9,       1.5);
( 585355.5, 4131437.0,      77.1,       1.5);        ( 585365.5, 4131437.0,      77.1,       1.5);
( 585375.5, 4131437.0,      76.9,       1.5);        ( 585385.5, 4131437.0,      76.8,       1.5);
( 585395.5, 4131437.0,      76.5,       1.5);        ( 585405.5, 4131437.0,      76.0,       1.5);
( 585415.5, 4131437.0,      76.0,       1.5);        ( 585425.5, 4131437.0,      76.0,       1.5);
( 585435.5, 4131437.0,      76.0,       1.5);        ( 585445.5, 4131437.0,      75.8,       1.5);
( 585455.5, 4131437.0,      75.6,       1.5);        ( 585465.5, 4131437.0,      75.7,       1.5);
( 585475.5, 4131437.0,      76.0,       1.5);        ( 585485.5, 4131437.0,      76.0,       1.5);
( 585495.5, 4131437.0,      75.4,       1.5);        ( 585505.5, 4131437.0,      74.8,       1.5);
( 585515.5, 4131437.0,      74.9,       1.5);        ( 585525.5, 4131437.0,      75.1,       1.5);
( 585295.5, 4131447.0,      77.0,       1.5);        ( 585305.5, 4131447.0,      77.2,       1.5);
( 585315.5, 4131447.0,      77.1,       1.5);        ( 585325.5, 4131447.0,      76.9,       1.5);
( 585335.5, 4131447.0,      76.8,       1.5);        ( 585345.5, 4131447.0,      76.9,       1.5);
( 585355.5, 4131447.0,      77.0,       1.5);        ( 585365.5, 4131447.0,      77.1,       1.5);
( 585375.5, 4131447.0,      76.9,       1.5);        ( 585385.5, 4131447.0,      76.8,       1.5);
( 585395.5, 4131447.0,      76.5,       1.5);        ( 585405.5, 4131447.0,      76.1,       1.5);
( 585415.5, 4131447.0,      76.0,       1.5);        ( 585425.5, 4131447.0,      76.0,       1.5);
( 585435.5, 4131447.0,      75.9,       1.5);        ( 585445.5, 4131447.0,      75.8,       1.5);
( 585455.5, 4131447.0,      75.7,       1.5);        ( 585465.5, 4131447.0,      75.7,       1.5);
( 585475.5, 4131447.0,      75.9,       1.5);        ( 585485.5, 4131447.0,      75.9,       1.5);
( 585495.5, 4131447.0,      75.4,       1.5);        ( 585505.5, 4131447.0,      74.9,       1.5);
( 585515.5, 4131447.0,      74.9,       1.5);        ( 585525.5, 4131447.0,      75.1,       1.5);
( 585295.5, 4131457.0,      77.1,       1.5);        ( 585305.5, 4131457.0,      77.1,       1.5);
( 585315.5, 4131457.0,      76.9,       1.5);        ( 585325.5, 4131457.0,      76.8,       1.5);
( 585335.5, 4131457.0,      76.7,       1.5);        ( 585345.5, 4131457.0,      76.7,       1.5);
( 585355.5, 4131457.0,      76.7,       1.5);        ( 585365.5, 4131457.0,      76.8,       1.5);
( 585375.5, 4131457.0,      76.7,       1.5);        ( 585385.5, 4131457.0,      76.5,       1.5);
( 585395.5, 4131457.0,      76.4,       1.5);        ( 585405.5, 4131457.0,      76.2,       1.5);
( 585415.5, 4131457.0,      76.0,       1.5);        ( 585425.5, 4131457.0,      76.0,       1.5);
( 585435.5, 4131457.0,      76.0,       1.5);        ( 585445.5, 4131457.0,      75.9,       1.5);
( 585455.5, 4131457.0,      75.9,       1.5);        ( 585465.5, 4131457.0,      75.8,       1.5);
( 585475.5, 4131457.0,      75.8,       1.5);        ( 585485.5, 4131457.0,      75.8,       1.5);
( 585495.5, 4131457.0,      75.6,       1.5);        ( 585505.5, 4131457.0,      75.0,       1.5);
( 585515.5, 4131457.0,      75.0,       1.5);        ( 585525.5, 4131457.0,      75.1,       1.5);
( 585295.5, 4131467.0,      77.1,       1.5);        ( 585305.5, 4131467.0,      77.1,       1.5);
( 585315.5, 4131467.0,      77.0,       1.5);        ( 585325.5, 4131467.0,      76.7,       1.5);
( 585335.5, 4131467.0,      76.6,       1.5);        ( 585345.5, 4131467.0,      76.7,       1.5);
( 585355.5, 4131467.0,      76.8,       1.5);        ( 585365.5, 4131467.0,      76.8,       1.5);
( 585375.5, 4131467.0,      76.6,       1.5);        ( 585385.5, 4131467.0,      76.5,       1.5);
( 585395.5, 4131467.0,      76.3,       1.5);        ( 585405.5, 4131467.0,      76.0,       1.5);
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585415.5,	4131467.0,	76.0,	1.5);	(585425.5,	4131467.0,	76.1,	1.5);
(585435.5,	4131467.0,	76.1,	1.5);	(585445.5,	4131467.0,	75.9,	1.5);
(585455.5,	4131467.0,	75.8,	1.5);	(585465.5,	4131467.0,	75.8,	1.5);
(585475.5,	4131467.0,	75.9,	1.5);	(585485.5,	4131467.0,	75.9,	1.5);
(585495.5,	4131467.0,	75.5,	1.5);	(585505.5,	4131467.0,	75.0,	1.5);
(585515.5,	4131467.0,	75.0,	1.5);	(585525.5,	4131467.0,	75.1,	1.5);
(585295.5,	4131477.0,	77.1,	1.5);	(585305.5,	4131477.0,	77.1,	1.5);
(585315.5,	4131477.0,	77.0,	1.5);	(585325.5,	4131477.0,	76.8,	1.5);
(585335.5,	4131477.0,	76.6,	1.5);	(585345.5,	4131477.0,	76.7,	1.5);
(585355.5,	4131477.0,	76.8,	1.5);	(585365.5,	4131477.0,	76.8,	1.5);
(585375.5,	4131477.0,	76.6,	1.5);	(585385.5,	4131477.0,	76.5,	1.5);
(585395.5,	4131477.0,	76.3,	1.5);	(585405.5,	4131477.0,	76.0,	1.5);
(585415.5,	4131477.0,	76.0,	1.5);	(585425.5,	4131477.0,	76.1,	1.5);
(585435.5,	4131477.0,	76.0,	1.5);	(585445.5,	4131477.0,	75.9,	1.5);
(585455.5,	4131477.0,	75.8,	1.5);	(585465.5,	4131477.0,	75.8,	1.5);
(585475.5,	4131477.0,	75.9,	1.5);	(585485.5,	4131477.0,	75.9,	1.5);
(585495.5,	4131477.0,	75.5,	1.5);	(585505.5,	4131477.0,	75.0,	1.5);
(585515.5,	4131477.0,	75.0,	1.5);	(585525.5,	4131477.0,	75.1,	1.5);
(585295.5,	4131487.0,	77.1,	1.5);	(585305.5,	4131487.0,	77.0,	1.5);
(585315.5,	4131487.0,	76.8,	1.5);	(585325.5,	4131487.0,	76.6,	1.5);
(585335.5,	4131487.0,	76.6,	1.5);	(585345.5,	4131487.0,	76.6,	1.5);
(585355.5,	4131487.0,	76.7,	1.5);	(585365.5,	4131487.0,	76.7,	1.5);
(585375.5,	4131487.0,	76.5,	1.5);	(585385.5,	4131487.0,	76.3,	1.5);
(585395.5,	4131487.0,	76.3,	1.5);	(585405.5,	4131487.0,	76.1,	1.5);
(585415.5,	4131487.0,	76.0,	1.5);	(585425.5,	4131487.0,	75.8,	1.5);
(585435.5,	4131487.0,	75.8,	1.5);	(585445.5,	4131487.0,	75.7,	1.5);
(585455.5,	4131487.0,	75.6,	1.5);	(585465.5,	4131487.0,	75.5,	1.5);
(585475.5,	4131487.0,	75.4,	1.5);	(585485.5,	4131487.0,	75.5,	1.5);
(585495.5,	4131487.0,	75.5,	1.5);	(585505.5,	4131487.0,	75.2,	1.5);
(585515.5,	4131487.0,	75.2,	1.5);	(585525.5,	4131487.0,	75.3,	1.5);
(585295.5,	4131497.0,	77.1,	1.5);	(585305.5,	4131497.0,	77.0,	1.5);
(585315.5,	4131497.0,	76.9,	1.5);	(585325.5,	4131497.0,	76.6,	1.5);
(585335.5,	4131497.0,	76.4,	1.5);	(585345.5,	4131497.0,	76.6,	1.5);
(585355.5,	4131497.0,	76.8,	1.5);	(585365.5,	4131497.0,	76.8,	1.5);
(585375.5,	4131497.0,	76.5,	1.5);	(585385.5,	4131497.0,	76.3,	1.5);
(585395.5,	4131497.0,	76.2,	1.5);	(585405.5,	4131497.0,	76.1,	1.5);
(585415.5,	4131497.0,	76.0,	1.5);	(585425.5,	4131497.0,	75.7,	1.5);
(585435.5,	4131497.0,	75.6,	1.5);	(585445.5,	4131497.0,	75.6,	1.5);
(585455.5,	4131497.0,	75.4,	1.5);	(585465.5,	4131497.0,	75.4,	1.5);
(585475.5,	4131497.0,	75.3,	1.5);	(585485.5,	4131497.0,	75.3,	1.5);
(585495.5,	4131497.0,	75.3,	1.5);	(585505.5,	4131497.0,	75.3,	1.5);

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
( 585515.5, 4131497.0,      75.3,       1.5);        ( 585525.5, 4131497.0,      75.5,       1.5);
( 585295.5, 4131507.0,      76.9,       1.5);        ( 585305.5, 4131507.0,      76.9,       1.5);
( 585315.5, 4131507.0,      76.3,       1.5);        ( 585325.5, 4131507.0,      76.3,       1.5);
( 585335.5, 4131507.0,      76.4,       1.5);        ( 585345.5, 4131507.0,      76.8,       1.5);
( 585355.5, 4131507.0,      76.8,       1.5);        ( 585365.5, 4131507.0,      76.7,       1.5);
( 585375.5, 4131507.0,      76.5,       1.5);        ( 585385.5, 4131507.0,      76.3,       1.5);
( 585395.5, 4131507.0,      76.3,       1.5);        ( 585405.5, 4131507.0,      76.1,       1.5);
( 585415.5, 4131507.0,      76.1,       1.5);        ( 585425.5, 4131507.0,      76.2,       1.5);
( 585435.5, 4131507.0,      75.6,       1.5);        ( 585445.5, 4131507.0,      75.7,       1.5);
( 585455.5, 4131507.0,      75.7,       1.5);        ( 585465.5, 4131507.0,      75.4,       1.5);
( 585475.5, 4131507.0,      75.5,       1.5);        ( 585485.5, 4131507.0,      75.3,       1.5);
( 585495.5, 4131507.0,      75.3,       1.5);        ( 585505.5, 4131507.0,      75.3,       1.5);
( 585515.5, 4131507.0,      75.3,       1.5);        ( 585525.5, 4131507.0,      75.3,       1.5);
( 585295.5, 4131517.0,      76.8,       1.5);        ( 585305.5, 4131517.0,      76.8,       1.5);
( 585315.5, 4131517.0,      76.3,       1.5);        ( 585325.5, 4131517.0,      76.3,       1.5);
( 585335.5, 4131517.0,      76.2,       1.5);        ( 585345.5, 4131517.0,      76.7,       1.5);
( 585355.5, 4131517.0,      76.7,       1.5);        ( 585365.5, 4131517.0,      76.6,       1.5);
( 585375.5, 4131517.0,      76.4,       1.5);        ( 585385.5, 4131517.0,      76.3,       1.5);
( 585395.5, 4131517.0,      76.3,       1.5);        ( 585405.5, 4131517.0,      76.2,       1.5);
( 585415.5, 4131517.0,      76.3,       1.5);        ( 585425.5, 4131517.0,      76.2,       1.5);
( 585435.5, 4131517.0,      75.7,       1.5);        ( 585445.5, 4131517.0,      75.7,       1.5);
( 585455.5, 4131517.0,      75.7,       1.5);        ( 585465.5, 4131517.0,      75.5,       1.5);
( 585475.5, 4131517.0,      75.5,       1.5);        ( 585485.5, 4131517.0,      75.4,       1.5);
( 585495.5, 4131517.0,      75.4,       1.5);        ( 585505.5, 4131517.0,      75.4,       1.5);
( 585515.5, 4131517.0,      75.4,       1.5);        ( 585525.5, 4131517.0,      75.4,       1.5);
( 585295.5, 4131527.0,      76.7,       1.5);        ( 585305.5, 4131527.0,      76.7,       1.5);
( 585315.5, 4131527.0,      76.2,       1.5);        ( 585325.5, 4131527.0,      76.2,       1.5);
( 585335.5, 4131527.0,      76.2,       1.5);        ( 585345.5, 4131527.0,      76.6,       1.5);
( 585355.5, 4131527.0,      76.6,       1.5);        ( 585365.5, 4131527.0,      76.4,       1.5);
( 585375.5, 4131527.0,      76.4,       1.5);        ( 585385.5, 4131527.0,      76.3,       1.5);
( 585395.5, 4131527.0,      76.3,       1.5);        ( 585405.5, 4131527.0,      76.3,       1.5);
( 585415.5, 4131527.0,      76.4,       1.5);        ( 585425.5, 4131527.0,      76.3,       1.5);
( 585435.5, 4131527.0,      75.8,       1.5);        ( 585445.5, 4131527.0,      75.7,       1.5);
( 585455.5, 4131527.0,      75.7,       1.5);        ( 585465.5, 4131527.0,      75.5,       1.5);
( 585475.5, 4131527.0,      75.5,       1.5);        ( 585485.5, 4131527.0,      75.4,       1.5);
( 585495.5, 4131527.0,      75.4,       1.5);        ( 585505.5, 4131527.0,      75.7,       1.5);
( 585515.5, 4131527.0,      75.6,       1.5);        ( 585525.5, 4131527.0,      75.5,       1.5);
( 585295.5, 4131537.0,      76.9,       1.5);        ( 585305.5, 4131537.0,      76.7,       1.5);
( 585315.5, 4131537.0,      76.6,       1.5);        ( 585325.5, 4131537.0,      76.3,       1.5);
( 585335.5, 4131537.0,      76.2,       1.5);        ( 585345.5, 4131537.0,      76.3,       1.5);
( 585355.5, 4131537.0,      76.5,       1.5);        ( 585365.5, 4131537.0,      76.5,       1.5);
( 585375.5, 4131537.0,      76.4,       1.5);        ( 585385.5, 4131537.0,      76.3,       1.5);
( 585395.5, 4131537.0,      76.4,       1.5);        ( 585405.5, 4131537.0,      76.5,       1.5);
( 585415.5, 4131537.0,      76.3,       1.5);        ( 585425.5, 4131537.0,      75.9,       1.5);
( 585435.5, 4131537.0,      75.8,       1.5);        ( 585445.5, 4131537.0,      75.7,       1.5);
( 585455.5, 4131537.0,      75.6,       1.5);        ( 585465.5, 4131537.0,      75.5,       1.5);
( 585475.5, 4131537.0,      75.4,       1.5);        ( 585485.5, 4131537.0,      75.4,       1.5);
( 585495.5, 4131537.0,      75.5,       1.5);        ( 585505.5, 4131537.0,      75.7,       1.5);
( 585515.5, 4131537.0,      75.7,       1.5);        ( 585525.5, 4131537.0,      75.8,       1.5);
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585335.5,	4131547.0,	76.2,	1.5);	(585345.5,	4131547.0,	76.2,	1.5);
(585355.5,	4131547.0,	76.3,	1.5);	(585365.5,	4131547.0,	76.4,	1.5);
(585375.5,	4131547.0,	76.4,	1.5);	(585385.5,	4131547.0,	76.3,	1.5);
(585395.5,	4131547.0,	76.4,	1.5);	(585405.5,	4131547.0,	76.4,	1.5);
(585415.5,	4131547.0,	76.1,	1.5);	(585425.5,	4131547.0,	75.9,	1.5);
(585335.5,	4131557.0,	76.0,	1.5);	(585345.5,	4131557.0,	76.1,	1.5);
(585355.5,	4131557.0,	76.1,	1.5);	(585365.5,	4131557.0,	76.1,	1.5);
(585375.5,	4131557.0,	76.2,	1.5);	(585385.5,	4131557.0,	76.2,	1.5);
(585395.5,	4131557.0,	76.0,	1.5);	(585405.5,	4131557.0,	75.8,	1.5);
(585415.5,	4131557.0,	75.8,	1.5);	(585425.5,	4131557.0,	75.7,	1.5);
(585335.5,	4131567.0,	76.0,	1.5);	(585345.5,	4131567.0,	76.1,	1.5);
(585355.5,	4131567.0,	76.1,	1.5);	(585365.5,	4131567.0,	76.1,	1.5);
(585375.5,	4131567.0,	76.1,	1.5);	(585385.5,	4131567.0,	76.2,	1.5);
(585395.5,	4131567.0,	75.9,	1.5);	(585405.5,	4131567.0,	75.8,	1.5);
(585415.5,	4131567.0,	75.8,	1.5);	(585425.5,	4131567.0,	75.6,	1.5);
(585345.5,	4131577.0,	75.8,	1.5);	(585355.5,	4131577.0,	75.8,	1.5);
(585365.5,	4131577.0,	75.7,	1.5);	(585375.5,	4131577.0,	75.8,	1.5);
(585385.5,	4131577.0,	75.4,	1.5);	(585395.5,	4131577.0,	75.4,	1.5);
(585405.5,	4131577.0,	75.4,	1.5);	(585415.5,	4131577.0,	75.5,	1.5);
(585425.5,	4131577.0,	75.5,	1.5);	(585345.5,	4131587.0,	75.8,	1.5);
(585355.5,	4131587.0,	75.7,	1.5);	(585365.5,	4131587.0,	75.6,	1.5);
(585375.5,	4131587.0,	75.5,	1.5);	(585385.5,	4131587.0,	75.4,	1.5);
(585395.5,	4131587.0,	75.4,	1.5);	(585405.5,	4131587.0,	75.3,	1.5);
(585415.5,	4131587.0,	75.3,	1.5);	(585425.5,	4131587.0,	75.5,	1.5);
(585355.5,	4131597.0,	75.7,	1.5);	(585365.5,	4131597.0,	75.6,	1.5);
(585375.5,	4131597.0,	75.5,	1.5);	(585385.5,	4131597.0,	75.4,	1.5);
(585395.5,	4131597.0,	75.4,	1.5);	(585405.5,	4131597.0,	75.3,	1.5);
(585415.5,	4131597.0,	75.3,	1.5);	(585425.5,	4131597.0,	75.5,	1.5);
(585355.5,	4131607.0,	75.8,	1.5);	(585365.5,	4131607.0,	75.7,	1.5);
(585375.5,	4131607.0,	75.6,	1.5);	(585385.5,	4131607.0,	75.5,	1.5);
(585395.5,	4131607.0,	75.4,	1.5);	(585405.5,	4131607.0,	75.4,	1.5);
(585415.5,	4131607.0,	75.5,	1.5);	(585425.5,	4131607.0,	75.5,	1.5);
(585355.5,	4131617.0,	75.9,	1.5);	(585365.5,	4131617.0,	75.8,	1.5);
(585375.5,	4131617.0,	75.7,	1.5);	(585385.5,	4131617.0,	75.5,	1.5);
(585395.5,	4131617.0,	75.5,	1.5);	(585405.5,	4131617.0,	75.5,	1.5);
(585415.5,	4131617.0,	75.4,	1.5);	(585425.5,	4131617.0,	75.4,	1.5);
(585355.5,	4131627.0,	75.9,	1.5);	(585365.5,	4131627.0,	75.6,	1.5);
(585375.5,	4131627.0,	75.6,	1.5);	(585385.5,	4131627.0,	75.6,	1.5);
(585395.5,	4131627.0,	75.5,	1.5);	(585405.5,	4131627.0,	75.5,	1.5);
(585415.5,	4131627.0,	75.4,	1.5);	(585425.5,	4131627.0,	75.4,	1.5);
(585355.5,	4131637.0,	76.0,	1.5);	(585365.5,	4131637.0,	75.6,	1.5);

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
( 585375.5, 4131637.0,      75.6,       1.5);        ( 585385.5, 4131637.0,      75.5,       1.5);
( 585395.5, 4131637.0,      75.5,       1.5);        ( 585405.5, 4131637.0,      75.4,       1.5);
( 585415.5, 4131637.0,      75.4,       1.5);        ( 585425.5, 4131637.0,      75.3,       1.5);
( 585355.5, 4131647.0,      76.2,       1.5);        ( 585365.5, 4131647.0,      75.5,       1.5);
( 585375.5, 4131647.0,      75.5,       1.5);        ( 585385.5, 4131647.0,      75.4,       1.5);
( 585395.5, 4131647.0,      75.4,       1.5);        ( 585405.5, 4131647.0,      75.3,       1.5);
( 585415.5, 4131647.0,      75.4,       1.5);        ( 585425.5, 4131647.0,      75.4,       1.5);
( 585355.5, 4131657.0,      76.3,       1.5);        ( 585365.5, 4131657.0,      76.1,       1.5);
( 585375.5, 4131657.0,      75.6,       1.5);        ( 585385.5, 4131657.0,      75.5,       1.5);
( 585395.5, 4131657.0,      75.4,       1.5);        ( 585405.5, 4131657.0,      75.3,       1.5);
( 585415.5, 4131657.0,      75.3,       1.5);        ( 585425.5, 4131657.0,      75.4,       1.5);
( 585355.5, 4131667.0,      76.1,       1.5);        ( 585365.5, 4131667.0,      76.0,       1.5);
( 585375.5, 4131667.0,      75.7,       1.5);        ( 585385.5, 4131667.0,      75.5,       1.5);
( 585395.5, 4131667.0,      75.4,       1.5);        ( 585405.5, 4131667.0,      75.3,       1.5);
( 585415.5, 4131667.0,      75.3,       1.5);        ( 585425.5, 4131667.0,      75.3,       1.5);
( 585773.5, 4131358.2,      71.2,       1.5);        ( 585783.5, 4131358.2,      71.2,       1.5);
( 585793.5, 4131358.2,      71.3,       1.5);        ( 585803.5, 4131358.2,      71.4,       1.5);
( 585813.5, 4131358.2,      71.3,       1.5);        ( 585823.5, 4131358.2,      71.3,       1.5);
( 585833.5, 4131358.2,      71.3,       1.5);        ( 585843.5, 4131358.2,      71.1,       1.5);
( 585853.5, 4131358.2,      71.1,       1.5);        ( 585863.5, 4131358.2,      70.8,       1.5);
( 585873.5, 4131358.2,      70.3,       1.5);        ( 585883.5, 4131358.2,      70.2,       1.5);
( 585893.5, 4131358.2,      70.1,       1.5);        ( 585903.5, 4131358.2,      70.0,       1.5);
( 585913.5, 4131358.2,      69.9,       1.5);        ( 585923.5, 4131358.2,      69.8,       1.5);
( 585933.5, 4131358.2,      69.8,       1.5);        ( 585943.5, 4131358.2,      69.7,       1.5);
( 585953.5, 4131358.2,      69.7,       1.5);        ( 585963.5, 4131358.2,      69.5,       1.5);
( 585973.5, 4131358.2,      69.4,       1.5);        ( 585983.5, 4131358.2,      69.4,       1.5);
( 585773.5, 4131368.3,      71.3,       1.5);        ( 585783.5, 4131368.3,      71.2,       1.5);
( 585793.5, 4131368.3,      71.1,       1.5);        ( 585803.5, 4131368.3,      71.0,       1.5);
( 585813.5, 4131368.3,      71.0,       1.5);        ( 585823.5, 4131368.3,      71.1,       1.5);
( 585833.5, 4131368.3,      71.1,       1.5);        ( 585843.5, 4131368.3,      71.1,       1.5);
( 585853.5, 4131368.3,      71.1,       1.5);        ( 585863.5, 4131368.3,      70.9,       1.5);
( 585873.5, 4131368.3,      70.2,       1.5);        ( 585883.5, 4131368.3,      70.1,       1.5);
( 585893.5, 4131368.3,      69.7,       1.5);        ( 585903.5, 4131368.3,      69.6,       1.5);
( 585913.5, 4131368.3,      69.6,       1.5);        ( 585923.5, 4131368.3,      69.7,       1.5);
( 585933.5, 4131368.3,      69.7,       1.5);        ( 585943.5, 4131368.3,      69.6,       1.5);
( 585953.5, 4131368.3,      69.5,       1.5);        ( 585963.5, 4131368.3,      69.3,       1.5);
( 585973.5, 4131368.3,      69.3,       1.5);        ( 585983.5, 4131368.3,      69.3,       1.5);
( 585773.5, 4131378.2,      71.4,       1.5);        ( 585783.5, 4131378.2,      71.4,       1.5);
( 585793.5, 4131378.2,      71.0,       1.5);        ( 585803.5, 4131378.2,      70.7,       1.5);
( 585813.5, 4131378.2,      70.9,       1.5);        ( 585823.5, 4131378.2,      71.0,       1.5);
( 585833.5, 4131378.2,      71.0,       1.5);        ( 585843.5, 4131378.2,      71.2,       1.5);
( 585853.5, 4131378.2,      71.4,       1.5);        ( 585863.5, 4131378.2,      70.9,       1.5);
( 585873.5, 4131378.2,      70.1,       1.5);        ( 585883.5, 4131378.2,      70.0,       1.5);
( 585893.5, 4131378.2,      69.5,       1.5);        ( 585903.5, 4131378.2,      69.3,       1.5);
( 585913.5, 4131378.2,      69.5,       1.5);        ( 585923.5, 4131378.2,      69.8,       1.5);
( 585933.5, 4131378.2,      69.7,       1.5);        ( 585943.5, 4131378.2,      69.5,       1.5);
( 585953.5, 4131378.2,      69.4,       1.5);        ( 585963.5, 4131378.2,      69.3,       1.5);
( 585973.5, 4131378.2,      69.3,       1.5);        ( 585983.5, 4131378.2,      69.3,       1.5);
( 585773.5, 4131388.2,      71.5,       1.5);        ( 585783.5, 4131388.2,      71.5,       1.5);
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585793.5,	4131388.2,	70.9,	1.5);	(585803.5,	4131388.2,	70.8,	1.5);
(585813.5,	4131388.2,	70.9,	1.5);	(585823.5,	4131388.2,	71.0,	1.5);
(585833.5,	4131388.2,	71.0,	1.5);	(585843.5,	4131388.2,	71.4,	1.5);
(585853.5,	4131388.2,	71.4,	1.5);	(585863.5,	4131388.2,	71.4,	1.5);
(585873.5,	4131388.2,	70.1,	1.5);	(585883.5,	4131388.2,	70.1,	1.5);
(585893.5,	4131388.2,	69.3,	1.5);	(585903.5,	4131388.2,	69.2,	1.5);
(585913.5,	4131388.2,	69.9,	1.5);	(585923.5,	4131388.2,	69.8,	1.5);
(585933.5,	4131388.2,	69.8,	1.5);	(585943.5,	4131388.2,	69.4,	1.5);
(585953.5,	4131388.2,	69.4,	1.5);	(585963.5,	4131388.2,	69.4,	1.5);
(585973.5,	4131388.2,	69.4,	1.5);	(585983.5,	4131388.2,	69.4,	1.5);
(585773.5,	4131398.2,	71.8,	1.5);	(585783.5,	4131398.2,	71.8,	1.5);
(585793.5,	4131398.2,	71.1,	1.5);	(585803.5,	4131398.2,	71.1,	1.5);
(585813.5,	4131398.2,	71.1,	1.5);	(585823.5,	4131398.2,	71.2,	1.5);
(585833.5,	4131398.2,	71.2,	1.5);	(585843.5,	4131398.2,	71.4,	1.5);
(585853.5,	4131398.2,	71.4,	1.5);	(585863.5,	4131398.2,	71.4,	1.5);
(585873.5,	4131398.2,	70.1,	1.5);	(585883.5,	4131398.2,	70.1,	1.5);
(585893.5,	4131398.2,	69.4,	1.5);	(585903.5,	4131398.2,	69.4,	1.5);
(585913.5,	4131398.2,	70.0,	1.5);	(585923.5,	4131398.2,	70.0,	1.5);
(585933.5,	4131398.2,	70.0,	1.5);	(585943.5,	4131398.2,	69.5,	1.5);
(585953.5,	4131398.2,	69.5,	1.5);	(585963.5,	4131398.2,	69.5,	1.5);
(585973.5,	4131398.2,	69.5,	1.5);	(585983.5,	4131398.2,	69.5,	1.5);
(585773.5,	4131408.2,	72.0,	1.5);	(585783.5,	4131408.2,	72.0,	1.5);
(585793.5,	4131408.2,	71.6,	1.5);	(585803.5,	4131408.2,	71.4,	1.5);
(585813.5,	4131408.2,	71.4,	1.5);	(585823.5,	4131408.2,	71.4,	1.5);
(585833.5,	4131408.2,	71.4,	1.5);	(585843.5,	4131408.2,	71.3,	1.5);
(585853.5,	4131408.2,	71.3,	1.5);	(585863.5,	4131408.2,	71.0,	1.5);
(585873.5,	4131408.2,	70.2,	1.5);	(585883.5,	4131408.2,	70.2,	1.5);
(585893.5,	4131408.2,	69.7,	1.5);	(585903.5,	4131408.2,	69.6,	1.5);
(585913.5,	4131408.2,	69.8,	1.5);	(585923.5,	4131408.2,	70.1,	1.5);
(585933.5,	4131408.2,	70.0,	1.5);	(585943.5,	4131408.2,	69.7,	1.5);
(585953.5,	4131408.2,	69.6,	1.5);	(585963.5,	4131408.2,	69.6,	1.5);
(585973.5,	4131408.2,	69.7,	1.5);	(585983.5,	4131408.2,	69.6,	1.5);
(585773.5,	4131418.3,	72.0,	1.5);	(585783.5,	4131418.3,	72.0,	1.5);
(585793.5,	4131418.3,	71.6,	1.5);	(585803.5,	4131418.3,	71.4,	1.5);
(585813.5,	4131418.3,	71.4,	1.5);	(585823.5,	4131418.3,	71.4,	1.5);
(585833.5,	4131418.3,	71.4,	1.5);	(585843.5,	4131418.3,	71.3,	1.5);
(585853.5,	4131418.3,	71.3,	1.5);	(585863.5,	4131418.3,	71.0,	1.5);
(585873.5,	4131418.3,	70.2,	1.5);	(585883.5,	4131418.3,	70.2,	1.5);
(585893.5,	4131418.3,	69.7,	1.5);	(585903.5,	4131418.3,	69.6,	1.5);
(585913.5,	4131418.3,	69.8,	1.5);	(585923.5,	4131418.3,	70.1,	1.5);
(585933.5,	4131418.3,	70.0,	1.5);	(585943.5,	4131418.3,	69.7,	1.5);

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
( 585953.5, 4131418.3,      69.6,       1.5);        ( 585963.5, 4131418.3,      69.6,       1.5);
( 585973.5, 4131418.3,      69.7,       1.5);        ( 585983.5, 4131418.3,      69.7,       1.5);
( 585773.5, 4131428.2,      72.0,       1.5);        ( 585783.5, 4131428.2,      71.9,       1.5);
( 585793.5, 4131428.2,      71.5,       1.5);        ( 585803.5, 4131428.2,      71.4,       1.5);
( 585813.5, 4131428.2,      71.4,       1.5);        ( 585823.5, 4131428.2,      71.5,       1.5);
( 585833.5, 4131428.2,      71.5,       1.5);        ( 585843.5, 4131428.2,      71.3,       1.5);
( 585853.5, 4131428.2,      71.3,       1.5);        ( 585863.5, 4131428.2,      71.1,       1.5);
( 585873.5, 4131428.2,      70.3,       1.5);        ( 585883.5, 4131428.2,      70.2,       1.5);
( 585893.5, 4131428.2,      69.8,       1.5);        ( 585903.5, 4131428.2,      69.7,       1.5);
( 585913.5, 4131428.2,      69.9,       1.5);        ( 585923.5, 4131428.2,      70.0,       1.5);
( 585933.5, 4131428.2,      70.0,       1.5);        ( 585943.5, 4131428.2,      69.7,       1.5);
( 585953.5, 4131428.2,      69.7,       1.5);        ( 585963.5, 4131428.2,      69.7,       1.5);
( 585973.5, 4131428.2,      69.7,       1.5);        ( 585983.5, 4131428.2,      69.7,       1.5);
( 585773.5, 4131438.2,      72.1,       1.5);        ( 585783.5, 4131438.2,      72.0,       1.5);
( 585793.5, 4131438.2,      71.5,       1.5);        ( 585803.5, 4131438.2,      71.3,       1.5);
( 585813.5, 4131438.2,      71.4,       1.5);        ( 585823.5, 4131438.2,      71.5,       1.5);
( 585833.5, 4131438.2,      71.6,       1.5);        ( 585843.5, 4131438.2,      71.4,       1.5);
( 585853.5, 4131438.2,      71.4,       1.5);        ( 585863.5, 4131438.2,      71.1,       1.5);
( 585873.5, 4131438.2,      70.3,       1.5);        ( 585883.5, 4131438.2,      70.2,       1.5);
( 585893.5, 4131438.2,      69.8,       1.5);        ( 585903.5, 4131438.2,      69.7,       1.5);
( 585913.5, 4131438.2,      69.9,       1.5);        ( 585923.5, 4131438.2,      70.1,       1.5);
( 585933.5, 4131438.2,      70.1,       1.5);        ( 585943.5, 4131438.2,      69.7,       1.5);
( 585953.5, 4131438.2,      69.7,       1.5);        ( 585963.5, 4131438.2,      69.7,       1.5);
( 585973.5, 4131438.2,      69.8,       1.5);        ( 585983.5, 4131438.2,      69.8,       1.5);
( 585773.5, 4131448.2,      72.1,       1.5);        ( 585783.5, 4131448.2,      72.0,       1.5);
( 585793.5, 4131448.2,      71.5,       1.5);        ( 585803.5, 4131448.2,      71.3,       1.5);
( 585813.5, 4131448.2,      71.4,       1.5);        ( 585823.5, 4131448.2,      71.6,       1.5);
( 585833.5, 4131448.2,      71.6,       1.5);        ( 585843.5, 4131448.2,      71.5,       1.5);
( 585853.5, 4131448.2,      71.5,       1.5);        ( 585863.5, 4131448.2,      71.0,       1.5);
( 585873.5, 4131448.2,      70.3,       1.5);        ( 585883.5, 4131448.2,      70.2,       1.5);
( 585893.5, 4131448.2,      69.8,       1.5);        ( 585903.5, 4131448.2,      69.7,       1.5);
( 585913.5, 4131448.2,      69.9,       1.5);        ( 585923.5, 4131448.2,      70.2,       1.5);
( 585933.5, 4131448.2,      70.1,       1.5);        ( 585943.5, 4131448.2,      69.7,       1.5);
( 585953.5, 4131448.2,      69.6,       1.5);        ( 585963.5, 4131448.2,      69.7,       1.5);
( 585973.5, 4131448.2,      69.8,       1.5);        ( 585983.5, 4131448.2,      69.8,       1.5);
( 585773.5, 4131458.2,      72.2,       1.5);        ( 585783.5, 4131458.2,      72.1,       1.5);
( 585793.5, 4131458.2,      71.6,       1.5);        ( 585803.5, 4131458.2,      71.5,       1.5);
( 585813.5, 4131458.2,      71.6,       1.5);        ( 585823.5, 4131458.2,      71.7,       1.5);
( 585833.5, 4131458.2,      71.7,       1.5);        ( 585843.5, 4131458.2,      71.6,       1.5);
( 585853.5, 4131458.2,      71.5,       1.5);        ( 585863.5, 4131458.2,      71.3,       1.5);
( 585873.5, 4131458.2,      70.5,       1.5);        ( 585883.5, 4131458.2,      70.4,       1.5);
( 585893.5, 4131458.2,      69.9,       1.5);        ( 585903.5, 4131458.2,      69.9,       1.5);
( 585913.5, 4131458.2,      70.2,       1.5);        ( 585923.5, 4131458.2,      70.3,       1.5);
( 585933.5, 4131458.2,      70.2,       1.5);        ( 585943.5, 4131458.2,      69.9,       1.5);
( 585953.5, 4131458.2,      69.8,       1.5);        ( 585963.5, 4131458.2,      69.8,       1.5);
( 585973.5, 4131458.2,      69.8,       1.5);        ( 585983.5, 4131458.2,      69.8,       1.5);
( 585773.5, 4131468.2,      72.3,       1.5);        ( 585783.5, 4131468.2,      72.2,       1.5);
( 585793.5, 4131468.2,      71.8,       1.5);        ( 585803.5, 4131468.2,      71.6,       1.5);
( 585813.5, 4131468.2,      71.6,       1.5);        ( 585823.5, 4131468.2,      71.7,       1.5);
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585833.5,	4131468.2,	71.7,	1.5);	(585843.5,	4131468.2,	71.7,	1.5);
(585853.5,	4131468.2,	71.7,	1.5);	(585863.5,	4131468.2,	71.2,	1.5);
(585873.5,	4131468.2,	70.5,	1.5);	(585883.5,	4131468.2,	70.4,	1.5);
(585893.5,	4131468.2,	70.1,	1.5);	(585903.5,	4131468.2,	70.0,	1.5);
(585913.5,	4131468.2,	70.2,	1.5);	(585923.5,	4131468.2,	70.4,	1.5);
(585933.5,	4131468.2,	70.3,	1.5);	(585943.5,	4131468.2,	70.0,	1.5);
(585953.5,	4131468.2,	69.9,	1.5);	(585963.5,	4131468.2,	69.8,	1.5);
(585973.5,	4131468.2,	69.7,	1.5);	(585983.5,	4131468.2,	69.7,	1.5);
(585773.5,	4131478.2,	72.3,	1.5);	(585783.5,	4131478.2,	72.3,	1.5);
(585793.5,	4131478.2,	71.8,	1.5);	(585803.5,	4131478.2,	71.6,	1.5);
(585813.5,	4131478.2,	71.7,	1.5);	(585823.5,	4131478.2,	71.7,	1.5);
(585833.5,	4131478.2,	71.7,	1.5);	(585843.5,	4131478.2,	71.7,	1.5);
(585853.5,	4131478.2,	71.7,	1.5);	(585863.5,	4131478.2,	71.2,	1.5);
(585873.5,	4131478.2,	70.4,	1.5);	(585883.5,	4131478.2,	70.4,	1.5);
(585893.5,	4131478.2,	70.1,	1.5);	(585903.5,	4131478.2,	70.0,	1.5);
(585913.5,	4131478.2,	70.2,	1.5);	(585923.5,	4131478.2,	70.5,	1.5);
(585933.5,	4131478.2,	70.4,	1.5);	(585943.5,	4131478.2,	69.9,	1.5);
(585953.5,	4131478.2,	69.9,	1.5);	(585963.5,	4131478.2,	69.8,	1.5);
(585973.5,	4131478.2,	69.7,	1.5);	(585983.5,	4131478.2,	69.7,	1.5);
(585773.5,	4131488.3,	72.3,	1.5);	(585783.5,	4131488.3,	72.3,	1.5);
(585793.5,	4131488.3,	71.5,	1.5);	(585803.5,	4131488.3,	71.5,	1.5);
(585813.5,	4131488.3,	71.5,	1.5);	(585823.5,	4131488.3,	71.8,	1.5);
(585833.5,	4131488.3,	71.8,	1.5);	(585843.5,	4131488.3,	71.6,	1.5);
(585853.5,	4131488.3,	71.6,	1.5);	(585863.5,	4131488.3,	71.6,	1.5);
(585873.5,	4131488.3,	70.5,	1.5);	(585883.5,	4131488.3,	70.5,	1.5);
(585893.5,	4131488.3,	70.0,	1.5);	(585903.5,	4131488.3,	70.0,	1.5);
(585913.5,	4131488.3,	70.5,	1.5);	(585923.5,	4131488.3,	70.5,	1.5);
(585933.5,	4131488.3,	70.5,	1.5);	(585943.5,	4131488.3,	69.8,	1.5);
(585953.5,	4131488.3,	69.9,	1.5);	(585963.5,	4131488.3,	69.7,	1.5);
(585973.5,	4131488.3,	69.7,	1.5);	(585983.5,	4131488.3,	69.7,	1.5);
(585773.5,	4131498.2,	72.4,	1.5);	(585783.5,	4131498.2,	72.4,	1.5);
(585793.5,	4131498.2,	71.5,	1.5);	(585803.5,	4131498.2,	71.5,	1.5);
(585813.5,	4131498.2,	71.5,	1.5);	(585823.5,	4131498.2,	72.0,	1.5);
(585833.5,	4131498.2,	71.9,	1.5);	(585843.5,	4131498.2,	71.6,	1.5);
(585853.5,	4131498.2,	71.6,	1.5);	(585863.5,	4131498.2,	71.5,	1.5);
(585873.5,	4131498.2,	70.6,	1.5);	(585883.5,	4131498.2,	70.6,	1.5);
(585893.5,	4131498.2,	70.0,	1.5);	(585903.5,	4131498.2,	70.0,	1.5);
(585913.5,	4131498.2,	70.5,	1.5);	(585923.5,	4131498.2,	70.5,	1.5);
(585933.5,	4131498.2,	70.5,	1.5);	(585943.5,	4131498.2,	69.9,	1.5);
(585953.5,	4131498.2,	69.9,	1.5);	(585963.5,	4131498.2,	69.7,	1.5);
(585973.5,	4131498.2,	69.7,	1.5);	(585983.5,	4131498.2,	69.7,	1.5);

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
( 585773.5, 4131508.2,      72.3,       1.5);        ( 585783.5, 4131508.2,      72.3,       1.5);
( 585793.5, 4131508.2,      71.7,       1.5);        ( 585803.5, 4131508.2,      71.5,       1.5);
( 585813.5, 4131508.2,      71.7,       1.5);        ( 585823.5, 4131508.2,      72.0,       1.5);
( 585833.5, 4131508.2,      71.9,       1.5);        ( 585843.5, 4131508.2,      71.6,       1.5);
( 585853.5, 4131508.2,      71.6,       1.5);        ( 585863.5, 4131508.2,      71.2,       1.5);
( 585873.5, 4131508.2,      70.7,       1.5);        ( 585883.5, 4131508.2,      70.6,       1.5);
( 585893.5, 4131508.2,      70.1,       1.5);        ( 585903.5, 4131508.2,      70.0,       1.5);
( 585913.5, 4131508.2,      70.2,       1.5);        ( 585923.5, 4131508.2,      70.5,       1.5);
( 585933.5, 4131508.2,      70.4,       1.5);        ( 585943.5, 4131508.2,      70.0,       1.5);
( 585953.5, 4131508.2,      69.9,       1.5);        ( 585963.5, 4131508.2,      69.7,       1.5);
( 585973.5, 4131508.2,      69.7,       1.5);        ( 585983.5, 4131508.2,      69.7,       1.5);
( 585773.5, 4131518.2,      72.1,       1.5);        ( 585783.5, 4131518.2,      72.0,       1.5);
( 585793.5, 4131518.2,      71.7,       1.5);        ( 585803.5, 4131518.2,      71.6,       1.5);
( 585813.5, 4131518.2,      71.7,       1.5);        ( 585823.5, 4131518.2,      71.6,       1.5);
( 585833.5, 4131518.2,      71.6,       1.5);        ( 585843.5, 4131518.2,      71.4,       1.5);
( 585853.5, 4131518.2,      71.3,       1.5);        ( 585863.5, 4131518.2,      71.1,       1.5);
( 585873.5, 4131518.2,      70.7,       1.5);        ( 585883.5, 4131518.2,      70.5,       1.5);
( 585893.5, 4131518.2,      70.2,       1.5);        ( 585903.5, 4131518.2,      70.1,       1.5);
( 585913.5, 4131518.2,      70.1,       1.5);        ( 585923.5, 4131518.2,      70.2,       1.5);
( 585933.5, 4131518.2,      70.2,       1.5);        ( 585943.5, 4131518.2,      69.9,       1.5);
( 585953.5, 4131518.2,      69.8,       1.5);        ( 585963.5, 4131518.2,      69.7,       1.5);
( 585973.5, 4131518.2,      69.6,       1.5);        ( 585983.5, 4131518.2,      69.6,       1.5);
( 585773.5, 4131528.2,      71.7,       1.5);        ( 585783.5, 4131528.2,      71.7,       1.5);
( 585793.5, 4131528.2,      71.4,       1.5);        ( 585803.5, 4131528.2,      71.3,       1.5);
( 585813.5, 4131528.2,      71.2,       1.5);        ( 585823.5, 4131528.2,      71.1,       1.5);
( 585833.5, 4131528.2,      71.1,       1.5);        ( 585843.5, 4131528.2,      70.8,       1.5);
( 585853.5, 4131528.2,      70.8,       1.5);        ( 585863.5, 4131528.2,      70.7,       1.5);
( 585873.5, 4131528.2,      70.4,       1.5);        ( 585883.5, 4131528.2,      70.4,       1.5);
( 585893.5, 4131528.2,      70.1,       1.5);        ( 585903.5, 4131528.2,      70.0,       1.5);
( 585913.5, 4131528.2,      70.0,       1.5);        ( 585923.5, 4131528.2,      69.9,       1.5);
( 585933.5, 4131528.2,      69.9,       1.5);        ( 585943.5, 4131528.2,      69.6,       1.5);
( 585953.5, 4131528.2,      69.5,       1.5);        ( 585963.5, 4131528.2,      69.4,       1.5);
( 585973.5, 4131528.2,      69.3,       1.5);        ( 585983.5, 4131528.2,      69.2,       1.5);
( 585773.5, 4131538.2,      71.6,       1.5);        ( 585783.5, 4131538.2,      71.6,       1.5);
( 585793.5, 4131538.2,      71.3,       1.5);        ( 585803.5, 4131538.2,      71.3,       1.5);
( 585813.5, 4131538.2,      71.2,       1.5);        ( 585823.5, 4131538.2,      71.0,       1.5);
( 585833.5, 4131538.2,      71.0,       1.5);        ( 585843.5, 4131538.2,      70.8,       1.5);
( 585853.5, 4131538.2,      70.7,       1.5);        ( 585863.5, 4131538.2,      70.6,       1.5);
( 585873.5, 4131538.2,      70.4,       1.5);        ( 585883.5, 4131538.2,      70.3,       1.5);
( 585893.5, 4131538.2,      70.1,       1.5);        ( 585903.5, 4131538.2,      70.0,       1.5);
( 585913.5, 4131538.2,      69.9,       1.5);        ( 585923.5, 4131538.2,      69.8,       1.5);
( 585933.5, 4131538.2,      69.8,       1.5);        ( 585943.5, 4131538.2,      69.5,       1.5);
( 585953.5, 4131538.2,      69.5,       1.5);        ( 585963.5, 4131538.2,      69.3,       1.5);
( 585973.5, 4131538.2,      69.2,       1.5);        ( 585773.5, 4131548.2,      71.7,       1.5);
( 585783.5, 4131548.2,      71.6,       1.5);        ( 585793.5, 4131548.2,      71.3,       1.5);
( 585803.5, 4131548.2,      71.3,       1.5);        ( 585813.5, 4131548.2,      71.2,       1.5);
( 585823.5, 4131548.2,      71.0,       1.5);        ( 585833.5, 4131548.2,      71.0,       1.5);
( 585843.5, 4131548.2,      70.8,       1.5);        ( 585853.5, 4131548.2,      70.7,       1.5);
( 585863.5, 4131548.2,      70.6,       1.5);        ( 585873.5, 4131548.2,      70.4,       1.5);
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(	585883.5,	4131548.2,	70.3,	1.5);	(585893.5,	4131548.2,	70.1, 1.5);
(	585903.5,	4131548.2,	70.0,	1.5);	(585913.5,	4131548.2,	69.9, 1.5);
(	585923.5,	4131548.2,	69.8,	1.5);	(585933.5,	4131548.2,	69.8, 1.5);
(	585943.5,	4131548.2,	69.6,	1.5);	(585953.5,	4131548.2,	69.5, 1.5);
(	585963.5,	4131548.2,	69.3,	1.5);	(585773.5,	4131558.3,	71.9, 1.5);
(	585783.5,	4131558.3,	71.8,	1.5);	(585793.5,	4131558.3,	71.4, 1.5);
(	585803.5,	4131558.3,	71.2,	1.5);	(585813.5,	4131558.3,	71.4, 1.5);
(	585823.5,	4131558.3,	71.4,	1.5);	(585833.5,	4131558.3,	71.4, 1.5);
(	585843.5,	4131558.3,	71.2,	1.5);	(585853.5,	4131558.3,	71.1, 1.5);
(	585863.5,	4131558.3,	71.0,	1.5);	(585873.5,	4131558.3,	70.7, 1.5);
(	585883.5,	4131558.3,	70.6,	1.5);	(585893.5,	4131558.3,	70.2, 1.5);
(	585903.5,	4131558.3,	70.1,	1.5);	(585913.5,	4131558.3,	70.2, 1.5);
(	585923.5,	4131558.3,	70.3,	1.5);	(585933.5,	4131558.3,	70.2, 1.5);
(	585943.5,	4131558.3,	70.0,	1.5);	(585953.5,	4131558.3,	69.9, 1.5);
(	585963.5,	4131558.3,	69.7,	1.5);	(585773.5,	4131568.2,	72.0, 1.5);
(	585783.5,	4131568.2,	71.9,	1.5);	(585793.5,	4131568.2,	71.3, 1.5);
(	585803.5,	4131568.2,	71.2,	1.5);	(585813.5,	4131568.2,	71.3, 1.5);
(	585823.5,	4131568.2,	71.5,	1.5);	(585833.5,	4131568.2,	71.4, 1.5);
(	585843.5,	4131568.2,	71.2,	1.5);	(585853.5,	4131568.2,	71.2, 1.5);
(	585863.5,	4131568.2,	71.0,	1.5);	(585873.5,	4131568.2,	70.7, 1.5);
(	585883.5,	4131568.2,	70.6,	1.5);	(585893.5,	4131568.2,	70.1, 1.5);
(	585903.5,	4131568.2,	70.0,	1.5);	(585913.5,	4131568.2,	70.2, 1.5);
(	585923.5,	4131568.2,	70.5,	1.5);	(585933.5,	4131568.2,	70.3, 1.5);
(	585943.5,	4131568.2,	70.0,	1.5);	(585953.5,	4131568.2,	70.0, 1.5);
(	585773.5,	4131578.2,	71.9,	1.5);	(585783.5,	4131578.2,	71.9, 1.5);
(	585793.5,	4131578.2,	71.3,	1.5);	(585803.5,	4131578.2,	71.2, 1.5);
(	585813.5,	4131578.2,	71.2,	1.5);	(585823.5,	4131578.2,	71.4, 1.5);
(	585833.5,	4131578.2,	71.4,	1.5);	(585843.5,	4131578.2,	71.2, 1.5);
(	585853.5,	4131578.2,	71.2,	1.5);	(585863.5,	4131578.2,	71.1, 1.5);
(	585873.5,	4131578.2,	70.7,	1.5);	(585883.5,	4131578.2,	70.6, 1.5);
(	585893.5,	4131578.2,	70.0,	1.5);	(585903.5,	4131578.2,	70.0, 1.5);
(	585913.5,	4131578.2,	70.2,	1.5);	(585923.5,	4131578.2,	70.3, 1.5);
(	585933.5,	4131578.2,	70.3,	1.5);	(585943.5,	4131578.2,	69.9, 1.5);
(	585773.5,	4131588.2,	71.8,	1.5);	(585783.5,	4131588.2,	71.8, 1.5);
(	585793.5,	4131588.2,	71.4,	1.5);	(585803.5,	4131588.2,	71.4, 1.5);
(	585813.5,	4131588.2,	71.3,	1.5);	(585823.5,	4131588.2,	71.2, 1.5);
(	585833.5,	4131588.2,	71.2,	1.5);	(585843.5,	4131588.2,	71.2, 1.5);
(	585853.5,	4131588.2,	71.2,	1.5);	(585863.5,	4131588.2,	71.0, 1.5);
(	585873.5,	4131588.2,	70.6,	1.5);	(585883.5,	4131588.2,	70.4, 1.5);
(	585893.5,	4131588.2,	69.9,	1.5);	(585903.5,	4131588.2,	69.8, 1.5);
(	585913.5,	4131588.2,	70.0,	1.5);	(585923.5,	4131588.2,	70.2, 1.5);

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
( 585933.5, 4131588.2,      70.1,      1.5);
( 585783.5, 4131598.2,      71.8,      1.5);
( 585803.5, 4131598.2,      71.4,      1.5);
( 585823.5, 4131598.2,      71.1,      1.5);
( 585843.5, 4131598.2,      71.2,      1.5);
( 585863.5, 4131598.2,      70.9,      1.5);
( 585883.5, 4131598.2,      70.4,      1.5);
( 585903.5, 4131598.2,      69.6,      1.5);
( 585923.5, 4131598.2,      70.3,      1.5);
( 585783.5, 4131608.3,      71.7,      1.5);
( 585803.5, 4131608.3,      71.3,      1.5);
( 585823.5, 4131608.3,      71.1,      1.5);
( 585843.5, 4131608.3,      71.3,      1.5);
( 585863.5, 4131608.3,      71.3,      1.5);
( 585883.5, 4131608.3,      70.5,      1.5);
( 585903.5, 4131608.3,      69.5,      1.5);
( 585773.5, 4131618.2,      71.6,      1.5);
( 585793.5, 4131618.2,      71.3,      1.5);
( 585813.5, 4131618.2,      71.3,      1.5);
( 585833.5, 4131618.2,      71.1,      1.5);
( 585853.5, 4131618.2,      71.2,      1.5);
( 585873.5, 4131618.2,      70.4,      1.5);
( 585893.5, 4131618.2,      69.4,      1.5);
( 585913.5, 4131618.2,      70.2,      1.5);
( 585783.5, 4131628.3,      71.5,      1.5);
( 585803.5, 4131628.3,      71.3,      1.5);
( 585823.5, 4131628.3,      71.1,      1.5);
( 585843.5, 4131628.3,      71.2,      1.5);
( 585863.5, 4131628.3,      70.7,      1.5);
( 585883.5, 4131628.3,      70.1,      1.5);
( 585903.5, 4131628.3,      69.3,      1.5);
( 585783.5, 4131638.2,      71.5,      1.5);
( 585803.5, 4131638.2,      71.2,      1.5);
( 585823.5, 4131638.2,      71.0,      1.5);
( 585843.5, 4131638.2,      71.1,      1.5);
( 585863.5, 4131638.2,      70.8,      1.5);
( 585883.5, 4131638.2,      70.1,      1.5);
( 585773.5, 4131648.2,      71.4,      1.5);
( 585793.5, 4131648.2,      70.9,      1.5);
( 585813.5, 4131648.2,      70.8,      1.5);
( 585833.5, 4131648.2,      70.8,      1.5);
( 585853.5, 4131648.2,      71.0,      1.5);
( 585873.5, 4131648.2,      70.2,      1.5);
( 585773.5, 4131658.2,      71.3,      1.5);
( 585793.5, 4131658.2,      70.8,      1.5);
( 585813.5, 4131658.2,      70.7,      1.5);
( 585833.5, 4131658.2,      70.7,      1.5);
( 585853.5, 4131658.2,      71.1,      1.5);
( 585873.5, 4131658.2,      70.1,      1.5);

( 585773.5, 4131598.2,      71.8,      1.5);
( 585793.5, 4131598.2,      71.4,      1.5);
( 585813.5, 4131598.2,      71.3,      1.5);
( 585833.5, 4131598.2,      71.2,      1.5);
( 585853.5, 4131598.2,      71.3,      1.5);
( 585873.5, 4131598.2,      70.5,      1.5);
( 585893.5, 4131598.2,      69.7,      1.5);
( 585913.5, 4131598.2,      70.0,      1.5);
( 585773.5, 4131608.3,      71.7,      1.5);
( 585793.5, 4131608.3,      71.3,      1.5);
( 585813.5, 4131608.3,      71.3,      1.5);
( 585833.5, 4131608.3,      71.1,      1.5);
( 585853.5, 4131608.3,      71.3,      1.5);
( 585873.5, 4131608.3,      70.5,      1.5);
( 585893.5, 4131608.3,      69.5,      1.5);
( 585913.5, 4131608.3,      70.2,      1.5);
( 585783.5, 4131618.2,      71.6,      1.5);
( 585803.5, 4131618.2,      71.3,      1.5);
( 585823.5, 4131618.2,      71.1,      1.5);
( 585843.5, 4131618.2,      71.2,      1.5);
( 585863.5, 4131618.2,      71.2,      1.5);
( 585883.5, 4131618.2,      70.4,      1.5);
( 585903.5, 4131618.2,      69.4,      1.5);
( 585773.5, 4131628.3,      71.5,      1.5);
( 585793.5, 4131628.3,      71.3,      1.5);
( 585813.5, 4131628.3,      71.2,      1.5);
( 585833.5, 4131628.3,      71.1,      1.5);
( 585853.5, 4131628.3,      71.2,      1.5);
( 585873.5, 4131628.3,      70.3,      1.5);
( 585893.5, 4131628.3,      69.4,      1.5);
( 585773.5, 4131638.2,      71.5,      1.5);
( 585793.5, 4131638.2,      71.2,      1.5);
( 585813.5, 4131638.2,      71.1,      1.5);
( 585833.5, 4131638.2,      71.0,      1.5);
( 585853.5, 4131638.2,      71.1,      1.5);
( 585873.5, 4131638.2,      70.3,      1.5);
( 585893.5, 4131638.2,      69.5,      1.5);
( 585783.5, 4131648.2,      71.3,      1.5);
( 585803.5, 4131648.2,      70.9,      1.5);
( 585823.5, 4131648.2,      70.7,      1.5);
( 585843.5, 4131648.2,      71.0,      1.5);
( 585863.5, 4131648.2,      70.7,      1.5);
( 585883.5, 4131648.2,      70.0,      1.5);
( 585783.5, 4131658.2,      71.2,      1.5);
( 585803.5, 4131658.2,      70.7,      1.5);
( 585823.5, 4131658.2,      70.6,      1.5);
( 585843.5, 4131658.2,      71.0,      1.5);
( 585863.5, 4131658.2,      70.6,      1.5);
( 585773.5, 4131668.2,      71.3,      1.5);
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585783.5,	4131668.2,	71.2,	1.5);	(585793.5,	4131668.2,	70.8,	1.5);
(585803.5,	4131668.2,	70.8,	1.5);	(585813.5,	4131668.2,	70.7,	1.5);
(585823.5,	4131668.2,	70.6,	1.5);	(585833.5,	4131668.2,	70.7,	1.5);
(585843.5,	4131668.2,	70.9,	1.5);	(585853.5,	4131668.2,	71.0,	1.5);
(585863.5,	4131668.2,	70.6,	1.5);	(585873.5,	4131668.2,	70.1,	1.5);
(585495.1,	4130845.0,	77.5,	1.5);	(585505.1,	4130845.0,	77.2,	1.5);
(585515.1,	4130845.0,	77.2,	1.5);	(585525.1,	4130845.0,	77.2,	1.5);
(585535.1,	4130845.0,	77.1,	1.5);	(585545.1,	4130845.0,	77.1,	1.5);
(585555.1,	4130845.0,	76.9,	1.5);	(585565.1,	4130845.0,	76.9,	1.5);
(585575.1,	4130845.0,	76.6,	1.5);	(585585.1,	4130845.0,	76.2,	1.5);
(585595.1,	4130845.0,	76.2,	1.5);	(585605.1,	4130845.0,	75.9,	1.5);
(585615.1,	4130845.0,	75.9,	1.5);	(585625.1,	4130845.0,	75.4,	1.5);
(585635.1,	4130845.0,	75.4,	1.5);	(585645.1,	4130845.0,	75.4,	1.5);
(585485.1,	4130855.0,	77.6,	1.5);	(585495.1,	4130855.0,	77.5,	1.5);
(585505.1,	4130855.0,	77.3,	1.5);	(585515.1,	4130855.0,	77.2,	1.5);
(585525.1,	4130855.0,	77.2,	1.5);	(585535.1,	4130855.0,	77.2,	1.5);
(585545.1,	4130855.0,	77.2,	1.5);	(585555.1,	4130855.0,	77.0,	1.5);
(585565.1,	4130855.0,	77.1,	1.5);	(585575.1,	4130855.0,	76.7,	1.5);
(585585.1,	4130855.0,	76.2,	1.5);	(585595.1,	4130855.0,	76.2,	1.5);
(585605.1,	4130855.0,	76.0,	1.5);	(585615.1,	4130855.0,	76.0,	1.5);
(585625.1,	4130855.0,	75.5,	1.5);	(585635.1,	4130855.0,	75.4,	1.5);
(585645.1,	4130855.0,	75.4,	1.5);	(585465.1,	4130865.0,	78.0,	1.5);
(585475.1,	4130865.0,	78.0,	1.5);	(585485.1,	4130865.0,	77.5,	1.5);
(585495.1,	4130865.0,	77.5,	1.5);	(585505.1,	4130865.0,	77.2,	1.5);
(585515.1,	4130865.0,	77.2,	1.5);	(585525.1,	4130865.0,	77.2,	1.5);
(585535.1,	4130865.0,	77.2,	1.5);	(585545.1,	4130865.0,	77.2,	1.5);
(585555.1,	4130865.0,	76.9,	1.5);	(585565.1,	4130865.0,	76.9,	1.5);
(585575.1,	4130865.0,	76.8,	1.5);	(585585.1,	4130865.0,	76.2,	1.5);
(585595.1,	4130865.0,	76.2,	1.5);	(585605.1,	4130865.0,	75.9,	1.5);
(585615.1,	4130865.0,	75.9,	1.5);	(585625.1,	4130865.0,	75.7,	1.5);
(585635.1,	4130865.0,	75.5,	1.5);	(585645.1,	4130865.0,	75.4,	1.5);
(585455.1,	4130875.0,	78.3,	1.5);	(585465.1,	4130875.0,	77.9,	1.5);
(585475.1,	4130875.0,	77.9,	1.5);	(585485.1,	4130875.0,	77.6,	1.5);
(585495.1,	4130875.0,	77.6,	1.5);	(585505.1,	4130875.0,	77.2,	1.5);
(585515.1,	4130875.0,	77.3,	1.5);	(585525.1,	4130875.0,	77.2,	1.5);
(585535.1,	4130875.0,	77.2,	1.5);	(585545.1,	4130875.0,	77.2,	1.5);
(585555.1,	4130875.0,	76.6,	1.5);	(585565.1,	4130875.0,	76.6,	1.5);
(585575.1,	4130875.0,	76.6,	1.5);	(585585.1,	4130875.0,	76.3,	1.5);
(585595.1,	4130875.0,	76.3,	1.5);	(585605.1,	4130875.0,	76.0,	1.5);
(585615.1,	4130875.0,	76.0,	1.5);	(585625.1,	4130875.0,	75.7,	1.5);
(585635.1,	4130875.0,	75.7,	1.5);	(585645.1,	4130875.0,	75.6,	1.5);

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
( 585435.1, 4130885.0,      78.3,       1.5);        ( 585445.1, 4130885.0,      78.3,       1.5);
( 585455.1, 4130885.0,      78.0,       1.5);        ( 585465.1, 4130885.0,      77.9,       1.5);
( 585475.1, 4130885.0,      77.8,       1.5);        ( 585485.1, 4130885.0,      77.6,       1.5);
( 585495.1, 4130885.0,      77.6,       1.5);        ( 585505.1, 4130885.0,      77.4,       1.5);
( 585515.1, 4130885.0,      77.3,       1.5);        ( 585525.1, 4130885.0,      77.3,       1.5);
( 585535.1, 4130885.0,      77.3,       1.5);        ( 585545.1, 4130885.0,      77.2,       1.5);
( 585555.1, 4130885.0,      76.6,       1.5);        ( 585565.1, 4130885.0,      76.5,       1.5);
( 585575.1, 4130885.0,      76.5,       1.5);        ( 585585.1, 4130885.0,      76.4,       1.5);
( 585595.1, 4130885.0,      76.4,       1.5);        ( 585605.1, 4130885.0,      76.1,       1.5);
( 585615.1, 4130885.0,      76.1,       1.5);        ( 585625.1, 4130885.0,      75.9,       1.5);
( 585635.1, 4130885.0,      75.8,       1.5);        ( 585645.1, 4130885.0,      75.6,       1.5);
( 585425.1, 4130895.0,      78.6,       1.5);        ( 585435.1, 4130895.0,      78.3,       1.5);
( 585445.1, 4130895.0,      78.2,       1.5);        ( 585455.1, 4130895.0,      78.1,       1.5);
( 585465.1, 4130895.0,      77.9,       1.5);        ( 585475.1, 4130895.0,      77.8,       1.5);
( 585485.1, 4130895.0,      77.6,       1.5);        ( 585495.1, 4130895.0,      77.6,       1.5);
( 585505.1, 4130895.0,      77.3,       1.5);        ( 585515.1, 4130895.0,      77.3,       1.5);
( 585525.1, 4130895.0,      77.3,       1.5);        ( 585535.1, 4130895.0,      77.2,       1.5);
( 585545.1, 4130895.0,      77.1,       1.5);        ( 585555.1, 4130895.0,      76.7,       1.5);
( 585565.1, 4130895.0,      76.6,       1.5);        ( 585575.1, 4130895.0,      76.5,       1.5);
( 585585.1, 4130895.0,      76.4,       1.5);        ( 585595.1, 4130895.0,      76.3,       1.5);
( 585605.1, 4130895.0,      76.2,       1.5);        ( 585615.1, 4130895.0,      76.1,       1.5);
( 585625.1, 4130895.0,      75.8,       1.5);        ( 585635.1, 4130895.0,      75.8,       1.5);
( 585645.1, 4130895.0,      75.6,       1.5);        ( 585405.1, 4130905.0,      78.6,       1.5);
( 585415.1, 4130905.0,      78.5,       1.5);        ( 585425.1, 4130905.0,      78.4,       1.5);
( 585435.1, 4130905.0,      78.1,       1.5);        ( 585445.1, 4130905.0,      78.1,       1.5);
( 585455.1, 4130905.0,      77.9,       1.5);        ( 585465.1, 4130905.0,      77.7,       1.5);
( 585475.1, 4130905.0,      77.6,       1.5);        ( 585485.1, 4130905.0,      77.4,       1.5);
( 585495.1, 4130905.0,      77.4,       1.5);        ( 585505.1, 4130905.0,      77.2,       1.5);
( 585515.1, 4130905.0,      77.1,       1.5);        ( 585525.1, 4130905.0,      77.1,       1.5);
( 585535.1, 4130905.0,      76.9,       1.5);        ( 585545.1, 4130905.0,      76.9,       1.5);
( 585555.1, 4130905.0,      76.5,       1.5);        ( 585565.1, 4130905.0,      76.4,       1.5);
( 585575.1, 4130905.0,      76.3,       1.5);        ( 585585.1, 4130905.0,      76.1,       1.5);
( 585595.1, 4130905.0,      76.0,       1.5);        ( 585605.1, 4130905.0,      75.9,       1.5);
( 585615.1, 4130905.0,      75.8,       1.5);        ( 585625.1, 4130905.0,      75.6,       1.5);
( 585635.1, 4130905.0,      75.5,       1.5);        ( 585645.1, 4130905.0,      75.4,       1.5);
( 585395.1, 4130915.0,      78.6,       1.5);        ( 585405.1, 4130915.0,      78.5,       1.5);
( 585415.1, 4130915.0,      78.4,       1.5);        ( 585425.1, 4130915.0,      78.3,       1.5);
( 585435.1, 4130915.0,      78.0,       1.5);        ( 585445.1, 4130915.0,      78.0,       1.5);
( 585455.1, 4130915.0,      77.8,       1.5);        ( 585465.1, 4130915.0,      77.7,       1.5);
( 585475.1, 4130915.0,      77.6,       1.5);        ( 585485.1, 4130915.0,      77.3,       1.5);
( 585495.1, 4130915.0,      77.3,       1.5);        ( 585505.1, 4130915.0,      77.1,       1.5);
( 585515.1, 4130915.0,      77.0,       1.5);        ( 585525.1, 4130915.0,      77.0,       1.5);
( 585535.1, 4130915.0,      76.9,       1.5);        ( 585545.1, 4130915.0,      76.8,       1.5);
( 585555.1, 4130915.0,      76.5,       1.5);        ( 585565.1, 4130915.0,      76.4,       1.5);
( 585575.1, 4130915.0,      76.2,       1.5);        ( 585585.1, 4130915.0,      75.9,       1.5);
( 585595.1, 4130915.0,      75.9,       1.5);        ( 585605.1, 4130915.0,      75.8,       1.5);
( 585615.1, 4130915.0,      75.8,       1.5);        ( 585625.1, 4130915.0,      75.5,       1.5);
( 585635.1, 4130915.0,      75.4,       1.5);        ( 585645.1, 4130915.0,      75.3,       1.5);
( 585375.1, 4130925.0,      78.8,       1.5);        ( 585385.1, 4130925.0,      78.6,       1.5);
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585395.1,	4130925.0,	78.6,	1.5);	(585405.1,	4130925.0,	78.5,	1.5);
(585415.1,	4130925.0,	78.4,	1.5);	(585425.1,	4130925.0,	78.3,	1.5);
(585435.1,	4130925.0,	78.1,	1.5);	(585445.1,	4130925.0,	78.0,	1.5);
(585455.1,	4130925.0,	77.9,	1.5);	(585465.1,	4130925.0,	77.7,	1.5);
(585475.1,	4130925.0,	77.6,	1.5);	(585485.1,	4130925.0,	77.4,	1.5);
(585495.1,	4130925.0,	77.3,	1.5);	(585505.1,	4130925.0,	77.1,	1.5);
(585515.1,	4130925.0,	77.1,	1.5);	(585525.1,	4130925.0,	77.0,	1.5);
(585535.1,	4130925.0,	76.9,	1.5);	(585545.1,	4130925.0,	76.8,	1.5);
(585555.1,	4130925.0,	76.5,	1.5);	(585565.1,	4130925.0,	76.4,	1.5);
(585575.1,	4130925.0,	76.2,	1.5);	(585585.1,	4130925.0,	75.9,	1.5);
(585595.1,	4130925.0,	75.9,	1.5);	(585605.1,	4130925.0,	75.8,	1.5);
(585615.1,	4130925.0,	75.8,	1.5);	(585625.1,	4130925.0,	75.5,	1.5);
(585635.1,	4130925.0,	75.4,	1.5);	(585645.1,	4130925.0,	75.3,	1.5);
(585375.1,	4130935.0,	78.5,	1.5);	(585385.1,	4130935.0,	78.3,	1.5);
(585395.1,	4130935.0,	78.3,	1.5);	(585405.1,	4130935.0,	78.1,	1.5);
(585415.1,	4130935.0,	77.9,	1.5);	(585425.1,	4130935.0,	77.9,	1.5);
(585435.1,	4130935.0,	77.8,	1.5);	(585445.1,	4130935.0,	77.8,	1.5);
(585455.1,	4130935.0,	77.6,	1.5);	(585465.1,	4130935.0,	77.5,	1.5);
(585475.1,	4130935.0,	77.4,	1.5);	(585485.1,	4130935.0,	77.2,	1.5);
(585495.1,	4130935.0,	77.2,	1.5);	(585505.1,	4130935.0,	77.0,	1.5);
(585515.1,	4130935.0,	76.9,	1.5);	(585525.1,	4130935.0,	76.8,	1.5);
(585535.1,	4130935.0,	76.7,	1.5);	(585545.1,	4130935.0,	76.7,	1.5);
(585555.1,	4130935.0,	76.4,	1.5);	(585565.1,	4130935.0,	76.3,	1.5);
(585575.1,	4130935.0,	76.2,	1.5);	(585585.1,	4130935.0,	75.9,	1.5);
(585595.1,	4130935.0,	75.9,	1.5);	(585605.1,	4130935.0,	75.7,	1.5);
(585615.1,	4130935.0,	75.7,	1.5);	(585625.1,	4130935.0,	75.4,	1.5);
(585375.1,	4130945.0,	78.5,	1.5);	(585385.1,	4130945.0,	78.3,	1.5);
(585395.1,	4130945.0,	78.3,	1.5);	(585405.1,	4130945.0,	77.9,	1.5);
(585415.1,	4130945.0,	77.8,	1.5);	(585425.1,	4130945.0,	77.8,	1.5);
(585435.1,	4130945.0,	77.8,	1.5);	(585445.1,	4130945.0,	77.7,	1.5);
(585455.1,	4130945.0,	77.5,	1.5);	(585465.1,	4130945.0,	77.4,	1.5);
(585475.1,	4130945.0,	77.3,	1.5);	(585485.1,	4130945.0,	77.2,	1.5);
(585495.1,	4130945.0,	77.2,	1.5);	(585505.1,	4130945.0,	76.9,	1.5);
(585515.1,	4130945.0,	76.9,	1.5);	(585525.1,	4130945.0,	76.8,	1.5);
(585535.1,	4130945.0,	76.6,	1.5);	(585545.1,	4130945.0,	76.6,	1.5);
(585555.1,	4130945.0,	76.4,	1.5);	(585565.1,	4130945.0,	76.4,	1.5);
(585575.1,	4130945.0,	76.2,	1.5);	(585585.1,	4130945.0,	75.9,	1.5);
(585595.1,	4130945.0,	75.9,	1.5);	(585605.1,	4130945.0,	75.7,	1.5);
(585615.1,	4130945.0,	75.7,	1.5);	(585625.1,	4130945.0,	75.4,	1.5);
(585375.1,	4130955.0,	78.4,	1.5);	(585385.1,	4130955.0,	78.1,	1.5);
(585395.1,	4130955.0,	78.1,	1.5);	(585405.1,	4130955.0,	78.0,	1.5);

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

```
( 585415.1, 4130955.0,      77.7,       1.5);        ( 585425.1, 4130955.0,      77.7,       1.5);
( 585435.1, 4130955.0,      77.7,       1.5);        ( 585445.1, 4130955.0,      77.7,       1.5);
( 585455.1, 4130955.0,      77.7,       1.5);        ( 585465.1, 4130955.0,      77.3,       1.5);
( 585475.1, 4130955.0,      77.2,       1.5);        ( 585485.1, 4130955.0,      77.1,       1.5);
( 585495.1, 4130955.0,      77.1,       1.5);        ( 585505.1, 4130955.0,      76.8,       1.5);
( 585515.1, 4130955.0,      76.8,       1.5);        ( 585525.1, 4130955.0,      76.7,       1.5);
( 585535.1, 4130955.0,      76.6,       1.5);        ( 585545.1, 4130955.0,      76.5,       1.5);
( 585555.1, 4130955.0,      76.3,       1.5);        ( 585565.1, 4130955.0,      76.3,       1.5);
( 585575.1, 4130955.0,      76.2,       1.5);        ( 585585.1, 4130955.0,      75.8,       1.5);
( 585595.1, 4130955.0,      75.8,       1.5);        ( 585605.1, 4130955.0,      75.6,       1.5);
( 585615.1, 4130955.0,      75.7,       1.5);        ( 585625.1, 4130955.0,      75.3,       1.5);
( 585375.1, 4130965.0,      78.2,       1.5);        ( 585385.1, 4130965.0,      77.7,       1.5);
( 585395.1, 4130965.0,      77.7,       1.5);        ( 585405.1, 4130965.0,      77.8,       1.5);
( 585415.1, 4130965.0,      77.4,       1.5);        ( 585425.1, 4130965.0,      77.4,       1.5);
( 585435.1, 4130965.0,      77.5,       1.5);        ( 585445.1, 4130965.0,      77.5,       1.5);
( 585455.1, 4130965.0,      77.5,       1.5);        ( 585465.1, 4130965.0,      76.9,       1.5);
( 585475.1, 4130965.0,      77.0,       1.5);        ( 585485.1, 4130965.0,      76.7,       1.5);
( 585495.1, 4130965.0,      76.7,       1.5);        ( 585505.1, 4130965.0,      76.4,       1.5);
( 585515.1, 4130965.0,      76.4,       1.5);        ( 585525.1, 4130965.0,      76.4,       1.5);
( 585535.1, 4130965.0,      76.3,       1.5);        ( 585545.1, 4130965.0,      76.3,       1.5);
( 585555.1, 4130965.0,      76.0,       1.5);        ( 585565.1, 4130965.0,      76.0,       1.5);
( 585575.1, 4130965.0,      76.0,       1.5);        ( 585585.1, 4130965.0,      75.7,       1.5);
( 585595.1, 4130965.0,      75.7,       1.5);        ( 585605.1, 4130965.0,      75.5,       1.5);
( 585615.1, 4130965.0,      75.5,       1.5);        ( 585625.1, 4130965.0,      75.2,       1.5);
( 585830.0, 4131035.8,      72.2,       6.1);        ( 585840.0, 4131035.8,      72.4,       6.1);
( 585850.0, 4131035.8,      72.6,       6.1);        ( 585860.0, 4131035.8,      72.6,       6.1);
( 585870.0, 4131035.8,      72.4,       6.1);        ( 585880.0, 4131035.8,      72.2,       6.1);
( 585890.0, 4131035.8,      72.0,       6.1);        ( 585900.0, 4131035.8,      71.8,       6.1);
( 585910.0, 4131035.8,      71.7,       6.1);        ( 585920.0, 4131035.8,      71.1,       6.1);
( 585930.0, 4131035.8,      70.8,       6.1);        ( 585830.0, 4131045.8,      72.2,       6.1);
( 585840.0, 4131045.8,      72.3,       6.1);        ( 585850.0, 4131045.8,      72.6,       6.1);
( 585860.0, 4131045.8,      72.6,       6.1);        ( 585870.0, 4131045.8,      72.3,       6.1);
( 585880.0, 4131045.8,      72.1,       6.1);        ( 585890.0, 4131045.8,      72.0,       6.1);
( 585900.0, 4131045.8,      71.8,       6.1);        ( 585910.0, 4131045.8,      71.7,       6.1);
( 585920.0, 4131045.8,      71.1,       6.1);        ( 585930.0, 4131045.8,      70.8,       6.1);
( 585830.0, 4131055.8,      71.8,       6.1);        ( 585840.0, 4131055.8,      72.0,       6.1);
( 585850.0, 4131055.8,      72.1,       6.1);        ( 585860.0, 4131055.8,      72.1,       6.1);
( 585870.0, 4131055.8,      71.7,       6.1);        ( 585880.0, 4131055.8,      71.8,       6.1);
( 585890.0, 4131055.8,      71.3,       6.1);        ( 585900.0, 4131055.8,      71.4,       6.1);
( 585910.0, 4131055.8,      71.4,       6.1);        ( 585920.0, 4131055.8,      70.6,       6.1);
( 585930.0, 4131055.8,      70.6,       6.1);        ( 585830.0, 4131065.8,      71.3,       6.1);
( 585840.0, 4131065.8,      71.6,       6.1);        ( 585850.0, 4131065.8,      71.4,       6.1);
( 585860.0, 4131065.8,      71.4,       6.1);        ( 585870.0, 4131065.8,      71.2,       6.1);
( 585880.0, 4131065.8,      71.2,       6.1);        ( 585890.0, 4131065.8,      70.9,       6.1);
( 585900.0, 4131065.8,      70.8,       6.1);        ( 585910.0, 4131065.8,      70.8,       6.1);
( 585920.0, 4131065.8,      70.3,       6.1);        ( 585930.0, 4131065.8,      70.2,       6.1);
( 585830.0, 4131075.8,      71.2,       6.1);        ( 585840.0, 4131075.8,      71.1,       6.1);
( 585850.0, 4131075.8,      71.2,       6.1);        ( 585860.0, 4131075.8,      71.2,       6.1);
( 585870.0, 4131075.8,      71.0,       6.1);        ( 585880.0, 4131075.8,      71.0,       6.1);
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

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

(585890.0,	4131075.8,	70.8,	6.1);	(585900.0,	4131075.8,	70.6,	6.1);
(585910.0,	4131075.8,	70.6,	6.1);	(585920.0,	4131075.8,	70.2,	6.1);
(585930.0,	4131075.8,	70.1,	6.1);	(585830.0,	4131085.8,	71.3,	6.1);
(585840.0,	4131085.8,	71.0,	6.1);	(585850.0,	4131085.8,	70.9,	6.1);
(585860.0,	4131085.8,	70.9,	6.1);	(585870.0,	4131085.8,	70.8,	6.1);
(585880.0,	4131085.8,	70.8,	6.1);	(585890.0,	4131085.8,	70.6,	6.1);
(585900.0,	4131085.8,	70.5,	6.1);	(585910.0,	4131085.8,	70.4,	6.1);
(585920.0,	4131085.8,	70.2,	6.1);	(585930.0,	4131085.8,	70.0,	6.1);
(585830.0,	4131095.8,	71.4,	6.1);	(585840.0,	4131095.8,	70.7,	6.1);
(585850.0,	4131095.8,	70.4,	6.1);	(585860.0,	4131095.8,	70.4,	6.1);
(585870.0,	4131095.8,	70.4,	6.1);	(585880.0,	4131095.8,	70.3,	6.1);
(585890.0,	4131095.8,	70.3,	6.1);	(585900.0,	4131095.8,	70.1,	6.1);
(585910.0,	4131095.8,	70.0,	6.1);	(585920.0,	4131095.8,	70.0,	6.1);
(585930.0,	4131095.8,	69.9,	6.1);				

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER OR 3*ZLB IN DISTANCE, OR WITHIN OPEN PIT SOURCE

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000019	585773.5	4131658.2	0.87

```
 *** ISCST3 - VERSION 02035 ***    *** Marina Plaza - Construction HRA                                         ***         03/22/16
                                   *** Residential Receptors                                                   ***         11:14:50
**MODELOPTs:                                                                                                               PAGE  43
CONC                    URBAN ELEV  FLGPOL DFAULT

                                           *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                              (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1

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

                                 *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                           (METERS/SEC)

                                                1.54,   3.09,   5.14,   8.23,  10.80,


                                                  *** WIND PROFILE EXPONENTS ***


               STABILITY                                     WIND SPEED CATEGORY
               CATEGORY         1              2              3              4              5              6
                  A          .15000E+00     .15000E+00     .15000E+00     .15000E+00     .15000E+00     .15000E+00
                  B          .15000E+00     .15000E+00     .15000E+00     .15000E+00     .15000E+00     .15000E+00
                  C          .20000E+00     .20000E+00     .20000E+00     .20000E+00     .20000E+00     .20000E+00
                  D          .25000E+00     .25000E+00     .25000E+00     .25000E+00     .25000E+00     .25000E+00
                  E          .30000E+00     .30000E+00     .30000E+00     .30000E+00     .30000E+00     .30000E+00
                  F          .30000E+00     .30000E+00     .30000E+00     .30000E+00     .30000E+00     .30000E+00


                                         *** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
                                                    (DEGREES KELVIN PER METER)


               STABILITY                                     WIND SPEED CATEGORY
               CATEGORY         1              2              3              4              5              6
                  A          .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
                  B          .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
                  C          .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
                  D          .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00     .00000E+00
                  E          .20000E-01     .20000E-01     .20000E-01     .20000E-01     .20000E-01     .20000E-01
                  F          .35000E-01     .35000E-01     .35000E-01     .35000E-01     .35000E-01     .35000E-01
```

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\!METFI~1\BAAQMD~1\ALV199~1.ASC
FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 7905 UPPER AIR STATION NO.: 7905
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1998 YEAR: 1998

YR	MN	DY	HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
98	01	01	01	152.8	1.00	281.8	6	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	02	325.6	1.83	282.0	5	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	03	303.8	1.83	281.4	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	04	321.9	1.39	280.9	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	05	177.0	1.00	280.8	5	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	06	208.2	1.07	280.5	6	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	07	297.7	1.30	280.0	6	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	08	16.9	1.03	279.6	6	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	09	264.5	1.34	280.5	5	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	10	320.3	2.24	281.8	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	11	351.2	1.74	283.5	3	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	12	58.0	1.34	285.0	2	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	13	253.7	1.25	286.0	1	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	14	309.3	1.61	286.9	2	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	15	110.7	2.37	287.1	1	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	16	154.0	2.46	285.5	2	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	17	170.5	1.56	285.3	3	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	18	246.2	1.43	285.0	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	19	314.1	2.10	285.0	5	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	20	313.1	2.64	284.5	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	21	319.9	4.34	285.4	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	22	315.9	3.80	284.8	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	23	317.7	4.52	285.0	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	24	316.8	3.35	285.0	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (26304 HRS) RESULTS ***

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

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
1	1ST HIGHEST VALUE IS	6.03114 AT (585525.50, 4131397.00, 74.42, 1.50)	DC	NA
	2ND HIGHEST VALUE IS	5.66575 AT (585525.50, 4131407.00, 74.50, 1.50)	DC	NA
	3RD HIGHEST VALUE IS	5.26695 AT (585515.50, 4131397.00, 74.43, 1.50)	DC	NA
	4TH HIGHEST VALUE IS	5.24734 AT (585525.50, 4131417.00, 74.64, 1.50)	DC	NA
	5TH HIGHEST VALUE IS	5.04474 AT (585515.50, 4131407.00, 74.53, 1.50)	DC	NA
	6TH HIGHEST VALUE IS	4.81581 AT (585525.50, 4131427.00, 74.71, 1.50)	DC	NA
	7TH HIGHEST VALUE IS	4.76778 AT (585515.50, 4131417.00, 74.66, 1.50)	DC	NA
	8TH HIGHEST VALUE IS	4.60412 AT (585505.50, 4131397.00, 74.44, 1.50)	DC	NA
	9TH HIGHEST VALUE IS	4.47122 AT (585505.50, 4131407.00, 74.54, 1.50)	DC	NA
	10TH HIGHEST VALUE IS	4.45737 AT (585515.50, 4131427.00, 74.75, 1.50)	DC	NA
2	1ST HIGHEST VALUE IS	6.54340 AT (585773.50, 4131398.25, 71.79, 1.50)	DC	NA
	2ND HIGHEST VALUE IS	6.53467 AT (585773.50, 4131468.25, 72.28, 1.50)	DC	NA
	3RD HIGHEST VALUE IS	6.44619 AT (585773.50, 4131428.25, 71.98, 1.50)	DC	NA
	4TH HIGHEST VALUE IS	6.43609 AT (585773.50, 4131498.25, 72.37, 1.50)	DC	NA
	5TH HIGHEST VALUE IS	6.38942 AT (585783.50, 4131408.25, 72.00, 1.50)	DC	NA
	6TH HIGHEST VALUE IS	6.38136 AT (585773.50, 4131438.25, 72.05, 1.50)	DC	NA
	7TH HIGHEST VALUE IS	6.36867 AT (585773.50, 4131358.25, 71.21, 1.50)	DC	NA
	8TH HIGHEST VALUE IS	6.34212 AT (585773.50, 4131368.25, 71.33, 1.50)	DC	NA
	9TH HIGHEST VALUE IS	6.32231 AT (585783.50, 4131438.25, 71.99, 1.50)	DC	NA
	10TH HIGHEST VALUE IS	6.32010 AT (585773.50, 4131508.25, 72.34, 1.50)	DC	NA

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

Model Input - Residential Receptors
Unit Emission Rates (1 g/s)

CONC   URBAN ELEV FLGPOL DFAULT

*** Message Summary : ISCST3 Model Execution ***

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

A Total of   0 Fatal Error Message(s)
A Total of   2 Warning Message(s)
A Total of   60 Informational Message(s)

A Total of   60 Calm Hours Identified

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
RE W282 2582 CHK_EL:RecElev < SrcBase; See non-DFAULT HE>ZI option in MCB#9
ME W340 2591 ANEMHT:Possible Error In ANHT of ANEMHGHT. The Value is   ANEMHGHT

   ****
   *** ISCST3 Finishes Successfully ***
   ****

Model Output
Unit Emission Rates (1 g/s)

Results Summary

Marina Plaza - Construction HRA
School Receptors

Concentration - Source Group: 1 On-site Emissions

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		2.88614	ug/m^3	585834.56	4131230.00	71.13	0.00	0.00	

Concentration - Source Group: 2 Off-site Emissions

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		2.93051	ug/m^3	585834.56	4131290.00	71.19	0.00	0.00	

Model Input - School Receptors
Unit Emission Rates (1 g/s)

```
*** ISCST3 - VERSION 02035 ***    *** Marina Plaza - Construction HRA                                    ***        03/23/16
                                   *** School Receptors                                                   ***        10:54:03
**MODELOPTs:                                                                                                      PAGE   1
CONC                    URBAN ELEV  FLGPOL DFAULT

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

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE =  F
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses Regulatory DEFAULT Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.
           8. "Upper Bound" Values for Supersquat Buildings.
           9. No Exponential Decay for URBAN/Non-SO2

**Model Accepts Receptors on ELEV Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes:    20 Source(s);      2 Source Group(s); and     255 Receptor(s)

**The Model Assumes A Pollutant Type of:  OTHER

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

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

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

Model Input - School Receptors
Unit Emission Rates (1 g/s)

```
**Misc. Inputs:  Anem. Hgt. (m) =     1.00 ;    Decay Coef. =    0.000     ;    Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =     1.3 MB of RAM.

**Input Runstream File:          MarinaPlaza-schools.INP
**Output Print File:             MarinaPlaza-schools.OUT
**Detailed Error/Message File:   MARINA~1.ERR
```

Model Input - School Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
L0000001	0	0.52632E-01	585634.5	4131133.5	73.6	4.15	16.28	1.93	SHRDOW
L0000002	0	0.52632E-01	585669.5	4131133.0	73.0	4.15	16.28	1.93	SHRDOW
L0000003	0	0.52632E-01	585704.5	4131132.8	72.6	4.15	16.28	1.93	SHRDOW
L0000004	0	0.52632E-01	585736.6	4131135.2	72.7	4.15	16.28	1.93	SHRDOW
L0000005	0	0.52632E-01	585736.6	4131170.3	72.2	4.15	16.28	1.93	SHRDOW
L0000006	0	0.52632E-01	585736.7	4131205.2	72.1	4.15	16.28	1.93	SHRDOW
L0000007	0	0.52632E-01	585736.8	4131240.3	72.1	4.15	16.28	1.93	SHRDOW
L0000008	0	0.52632E-01	585736.9	4131275.2	72.1	4.15	16.28	1.93	SHRDOW
L0000009	0	0.52632E-01	585736.9	4131310.2	72.1	4.15	16.28	1.93	SHRDOW
L0000010	0	0.52632E-01	585737.0	4131345.2	72.0	4.15	16.28	1.93	SHRDOW
L0000011	0	0.52632E-01	585737.1	4131380.3	72.1	4.15	16.28	1.93	SHRDOW
L0000012	0	0.52632E-01	585737.2	4131415.2	72.3	4.15	16.28	1.93	SHRDOW
L0000013	0	0.52632E-01	585737.3	4131450.3	72.5	4.15	16.28	1.93	SHRDOW
L0000014	0	0.52632E-01	585737.3	4131485.2	72.6	4.15	16.28	1.93	SHRDOW
L0000015	0	0.52632E-01	585737.4	4131520.3	72.3	4.15	16.28	1.93	SHRDOW
L0000016	0	0.52632E-01	585737.5	4131555.2	72.1	4.15	16.28	1.93	SHRDOW
L0000017	0	0.52632E-01	585737.6	4131590.3	72.3	4.15	16.28	1.93	SHRDOW
L0000018	0	0.52632E-01	585737.6	4131625.2	72.4	4.15	16.28	1.93	SHRDOW
L0000019	0	0.52632E-01	585737.7	4131660.3	72.3	4.15	16.28	1.93	SHRDOW

Model Input - School Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
1	0	0.51290E-04	585621.2	4131151.5	73.9	4.15	20	1.93	SHRDOW

Model Input - School Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
1	1 ,
2	L0000001, L0000002, L0000003, L0000004, L0000005, L0000006, L0000007, L0000008, L0000009, L0000010, L0000011, L0000012, L0000013, L0000014, L0000015, L0000016, L0000017, L0000018, L0000019,

Model Input - School Receptors
Unit Emission Rates (1 g/s)

CONC URBAN ELEV FLGPOL DFAULT

* SOURCE EMISSION RATE SCALARS WHICH VARY SEASONALLY, DIURNALLY AND BY DAY OF WEEK (SHRDOW) *

SOURCE ID = 1 ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
							SEASON = WINTER;		DAY OF WEEK = WEEKDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;		DAY OF WEEK = WEEKDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;		DAY OF WEEK = WEEKDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = FALL ;		DAY OF WEEK = WEEKDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = WINTER;		DAY OF WEEK = SATURDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;		DAY OF WEEK = SATURDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;		DAY OF WEEK = SATURDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = FALL ;		DAY OF WEEK = SATURDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = WINTER;		DAY OF WEEK = SUNDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SPRING;		DAY OF WEEK = SUNDAY						
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
							SEASON = SUMMER;		DAY OF WEEK = SUNDAY						

Model Input - School Receptors
Unit Emission Rates (1 g/s)

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

SEASON = FALL ; DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

Model Input - School Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

* SOURCE EMISSION RATE SCALARS WHICH VARY SEASONALLY, DIURNALLY AND BY DAY OF WEEK (SHRDOW) *

SOURCE ID = L0000001 and L0000019 ; SOURCE TYPE = VOLUME :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
						SEASON = WINTER;		DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = SPRING;		DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = SUMMER;		DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = FALL ;		DAY OF WEEK = WEEKDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.0000E+00	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = WINTER;		DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = SPRING;		DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = SUMMER;		DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = FALL ;		DAY OF WEEK = SATURDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = WINTER;		DAY OF WEEK = SUNDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = SPRING;		DAY OF WEEK = SUNDAY							
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
						SEASON = SUMMER;		DAY OF WEEK = SUNDAY							

Model Input - School Receptors
Unit Emission Rates (1 g/s)

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

SEASON = FALL ; DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

Model Input - School Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585834.6,	4131230.0,	71.1,	1.5);	(585844.6,	4131230.0,	70.7,	1.5);
(585854.6,	4131230.0,	70.5,	1.5);	(585864.6,	4131230.0,	70.4,	1.5);
(585874.6,	4131230.0,	70.3,	1.5);	(585884.6,	4131230.0,	70.3,	1.5);
(585894.6,	4131230.0,	70.1,	1.5);	(585904.6,	4131230.0,	70.1,	1.5);
(585914.6,	4131230.0,	69.9,	1.5);	(585924.6,	4131230.0,	69.7,	1.5);
(585934.6,	4131230.0,	69.7,	1.5);	(585944.6,	4131230.0,	69.2,	1.5);
(585954.6,	4131230.0,	69.1,	1.5);	(585964.6,	4131230.0,	68.9,	1.5);
(585974.6,	4131230.0,	68.6,	1.5);	(585984.6,	4131230.0,	68.6,	1.5);
(585994.6,	4131230.0,	68.4,	1.5);	(586004.6,	4131230.0,	68.3,	1.5);
(586014.6,	4131230.0,	68.4,	1.5);	(586024.6,	4131230.0,	68.4,	1.5);
(586034.6,	4131230.0,	68.4,	1.5);	(585834.6,	4131240.0,	71.1,	1.5);
(585844.6,	4131240.0,	70.6,	1.5);	(585854.6,	4131240.0,	70.5,	1.5);
(585864.6,	4131240.0,	70.3,	1.5);	(585874.6,	4131240.0,	70.3,	1.5);
(585884.6,	4131240.0,	70.3,	1.5);	(585894.6,	4131240.0,	70.0,	1.5);
(585904.6,	4131240.0,	70.0,	1.5);	(585914.6,	4131240.0,	69.8,	1.5);
(585924.6,	4131240.0,	69.7,	1.5);	(585934.6,	4131240.0,	69.7,	1.5);
(585944.6,	4131240.0,	69.2,	1.5);	(585954.6,	4131240.0,	69.1,	1.5);
(585964.6,	4131240.0,	68.8,	1.5);	(585974.6,	4131240.0,	68.7,	1.5);
(585984.6,	4131240.0,	68.6,	1.5);	(585994.6,	4131240.0,	68.5,	1.5);
(586004.6,	4131240.0,	68.4,	1.5);	(586014.6,	4131240.0,	68.5,	1.5);
(586024.6,	4131240.0,	68.5,	1.5);	(586034.6,	4131240.0,	68.5,	1.5);
(585834.6,	4131250.0,	71.0,	1.5);	(585844.6,	4131250.0,	70.7,	1.5);
(585854.6,	4131250.0,	70.6,	1.5);	(585864.6,	4131250.0,	70.4,	1.5);
(585874.6,	4131250.0,	70.3,	1.5);	(585884.6,	4131250.0,	70.2,	1.5);
(585894.6,	4131250.0,	70.0,	1.5);	(585904.6,	4131250.0,	70.0,	1.5);
(585914.6,	4131250.0,	69.8,	1.5);	(585924.6,	4131250.0,	69.7,	1.5);
(585934.6,	4131250.0,	69.7,	1.5);	(585944.6,	4131250.0,	69.3,	1.5);
(585954.6,	4131250.0,	69.2,	1.5);	(585964.6,	4131250.0,	69.0,	1.5);
(585974.6,	4131250.0,	68.8,	1.5);	(585984.6,	4131250.0,	68.7,	1.5);
(585994.6,	4131250.0,	68.6,	1.5);	(586004.6,	4131250.0,	68.6,	1.5);
(586014.6,	4131250.0,	68.5,	1.5);	(586024.6,	4131250.0,	68.5,	1.5);
(586034.6,	4131250.0,	68.5,	1.5);	(585834.6,	4131260.0,	71.0,	1.5);
(585844.6,	4131260.0,	70.7,	1.5);	(585854.6,	4131260.0,	70.6,	1.5);
(585864.6,	4131260.0,	70.4,	1.5);	(585874.6,	4131260.0,	70.2,	1.5);
(585884.6,	4131260.0,	70.2,	1.5);	(585894.6,	4131260.0,	70.0,	1.5);
(585904.6,	4131260.0,	69.9,	1.5);	(585914.6,	4131260.0,	69.8,	1.5);
(585924.6,	4131260.0,	69.7,	1.5);	(585934.6,	4131260.0,	69.7,	1.5);
(585944.6,	4131260.0,	69.3,	1.5);	(585954.6,	4131260.0,	69.3,	1.5);
(585964.6,	4131260.0,	69.0,	1.5);	(585974.6,	4131260.0,	68.8,	1.5);
(585984.6,	4131260.0,	68.8,	1.5);	(585994.6,	4131260.0,	68.6,	1.5);
(586004.6,	4131260.0,	68.6,	1.5);	(586014.6,	4131260.0,	68.6,	1.5);

Model Input - School Receptors
Unit Emission Rates (1 g/s)

```
( 586024.6, 4131260.0,      68.5,       1.5);        ( 586034.6, 4131260.0,      68.5,       1.5);
( 585834.6, 4131270.0,      71.1,       1.5);        ( 585844.6, 4131270.0,      70.6,       1.5);
( 585854.6, 4131270.0,      70.6,       1.5);        ( 585864.6, 4131270.0,      70.3,       1.5);
( 585874.6, 4131270.0,      70.3,       1.5);        ( 585884.6, 4131270.0,      70.3,       1.5);
( 585894.6, 4131270.0,      70.0,       1.5);        ( 585904.6, 4131270.0,      70.0,       1.5);
( 585914.6, 4131270.0,      69.9,       1.5);        ( 585924.6, 4131270.0,      69.8,       1.5);
( 585934.6, 4131270.0,      69.8,       1.5);        ( 585944.6, 4131270.0,      69.3,       1.5);
( 585954.6, 4131270.0,      69.3,       1.5);        ( 585964.6, 4131270.0,      68.9,       1.5);
( 585974.6, 4131270.0,      68.9,       1.5);        ( 585984.6, 4131270.0,      68.7,       1.5);
( 585994.6, 4131270.0,      68.7,       1.5);        ( 586004.6, 4131270.0,      68.7,       1.5);
( 586014.6, 4131270.0,      68.5,       1.5);        ( 586024.6, 4131270.0,      68.5,       1.5);
( 586034.6, 4131270.0,      68.6,       1.5);        ( 585834.6, 4131280.0,      71.2,       1.5);
( 585844.6, 4131280.0,      70.6,       1.5);        ( 585854.6, 4131280.0,      70.6,       1.5);
( 585864.6, 4131280.0,      70.3,       1.5);        ( 585874.6, 4131280.0,      70.3,       1.5);
( 585884.6, 4131280.0,      70.3,       1.5);        ( 585894.6, 4131280.0,      70.1,       1.5);
( 585904.6, 4131280.0,      70.1,       1.5);        ( 585914.6, 4131280.0,      70.0,       1.5);
( 585924.6, 4131280.0,      70.1,       1.5);        ( 585934.6, 4131280.0,      70.0,       1.5);
( 585944.6, 4131280.0,      69.4,       1.5);        ( 585954.6, 4131280.0,      69.4,       1.5);
( 585964.6, 4131280.0,      69.1,       1.5);        ( 585974.6, 4131280.0,      69.1,       1.5);
( 585984.6, 4131280.0,      68.8,       1.5);        ( 585994.6, 4131280.0,      68.8,       1.5);
( 586004.6, 4131280.0,      68.8,       1.5);        ( 586014.6, 4131280.0,      68.6,       1.5);
( 586024.6, 4131280.0,      68.6,       1.5);        ( 586034.6, 4131280.0,      68.6,       1.5);
( 585834.6, 4131290.0,      71.2,       1.5);        ( 585844.6, 4131290.0,      70.8,       1.5);
( 585854.6, 4131290.0,      70.7,       1.5);        ( 585864.6, 4131290.0,      70.5,       1.5);
( 585874.6, 4131290.0,      70.3,       1.5);        ( 585884.6, 4131290.0,      70.3,       1.5);
( 585894.6, 4131290.0,      70.2,       1.5);        ( 585904.6, 4131290.0,      70.2,       1.5);
( 585914.6, 4131290.0,      70.1,       1.5);        ( 585924.6, 4131290.0,      70.1,       1.5);
( 585934.6, 4131290.0,      70.1,       1.5);        ( 585944.6, 4131290.0,      69.5,       1.5);
( 585954.6, 4131290.0,      69.4,       1.5);        ( 585964.6, 4131290.0,      69.3,       1.5);
( 585974.6, 4131290.0,      69.1,       1.5);        ( 585984.6, 4131290.0,      69.1,       1.5);
( 585994.6, 4131290.0,      68.9,       1.5);        ( 586004.6, 4131290.0,      68.9,       1.5);
( 586014.6, 4131290.0,      68.7,       1.5);        ( 586024.6, 4131290.0,      68.6,       1.5);
( 586034.6, 4131290.0,      68.5,       1.5);        ( 585834.6, 4131300.0,      71.2,       1.5);
( 585844.6, 4131300.0,      70.8,       1.5);        ( 585854.6, 4131300.0,      70.7,       1.5);
( 585864.6, 4131300.0,      70.4,       1.5);        ( 585874.6, 4131300.0,      70.3,       1.5);
( 585884.6, 4131300.0,      70.3,       1.5);        ( 585894.6, 4131300.0,      70.2,       1.5);
( 585904.6, 4131300.0,      70.2,       1.5);        ( 585914.6, 4131300.0,      70.1,       1.5);
( 585924.6, 4131300.0,      70.1,       1.5);        ( 585934.6, 4131300.0,      70.0,       1.5);
( 585944.6, 4131300.0,      69.6,       1.5);        ( 585954.6, 4131300.0,      69.4,       1.5);
( 585964.6, 4131300.0,      69.3,       1.5);        ( 585974.6, 4131300.0,      69.2,       1.5);
( 585984.6, 4131300.0,      69.1,       1.5);        ( 585994.6, 4131300.0,      69.0,       1.5);
( 586004.6, 4131300.0,      68.9,       1.5);        ( 586014.6, 4131300.0,      68.7,       1.5);
( 586024.6, 4131300.0,      68.6,       1.5);        ( 586034.6, 4131300.0,      68.5,       1.5);
( 585834.6, 4131310.0,      71.2,       1.5);        ( 585844.6, 4131310.0,      70.7,       1.5);
( 585854.6, 4131310.0,      70.7,       1.5);        ( 585864.6, 4131310.0,      70.3,       1.5);
( 585874.6, 4131310.0,      70.3,       1.5);        ( 585884.6, 4131310.0,      70.3,       1.5);
( 585894.6, 4131310.0,      70.3,       1.5);        ( 585904.6, 4131310.0,      70.2,       1.5);
( 585914.6, 4131310.0,      70.1,       1.5);        ( 585924.6, 4131310.0,      70.1,       1.5);
( 585934.6, 4131310.0,      70.1,       1.5);        ( 585944.6, 4131310.0,      69.6,       1.5);
```

Model Input - School Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

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

(585954.6,	4131310.0,	69.5,	1.5);	(585964.6,	4131310.0,	69.4,	1.5);
(585974.6,	4131310.0,	69.5,	1.5);	(585984.6,	4131310.0,	69.0,	1.5);
(585994.6,	4131310.0,	69.0,	1.5);	(586004.6,	4131310.0,	69.0,	1.5);
(586014.6,	4131310.0,	68.8,	1.5);	(586024.6,	4131310.0,	68.8,	1.5);
(586034.6,	4131310.0,	68.6,	1.5);	(585834.6,	4131320.0,	71.3,	1.5);
(585844.6,	4131320.0,	70.8,	1.5);	(585854.6,	4131320.0,	70.7,	1.5);
(585864.6,	4131320.0,	70.5,	1.5);	(585874.6,	4131320.0,	70.2,	1.5);
(585884.6,	4131320.0,	70.2,	1.5);	(585894.6,	4131320.0,	70.3,	1.5);
(585904.6,	4131320.0,	70.3,	1.5);	(585914.6,	4131320.0,	70.2,	1.5);
(585924.6,	4131320.0,	70.2,	1.5);	(585934.6,	4131320.0,	70.1,	1.5);
(585944.6,	4131320.0,	69.7,	1.5);	(585954.6,	4131320.0,	69.6,	1.5);
(585964.6,	4131320.0,	69.6,	1.5);	(585974.6,	4131320.0,	69.7,	1.5);
(585984.6,	4131320.0,	69.5,	1.5);	(585994.6,	4131320.0,	69.2,	1.5);
(586004.6,	4131320.0,	69.1,	1.5);	(586014.6,	4131320.0,	68.9,	1.5);
(586024.6,	4131320.0,	68.9,	1.5);	(586034.6,	4131320.0,	68.8,	1.5);
(585834.6,	4131330.0,	71.2,	1.5);	(585844.6,	4131330.0,	70.8,	1.5);
(585854.6,	4131330.0,	70.7,	1.5);	(585864.6,	4131330.0,	70.4,	1.5);
(585874.6,	4131330.0,	70.3,	1.5);	(585884.6,	4131330.0,	70.3,	1.5);
(585894.6,	4131330.0,	70.2,	1.5);	(585904.6,	4131330.0,	70.3,	1.5);
(585914.6,	4131330.0,	70.2,	1.5);	(585924.6,	4131330.0,	70.2,	1.5);
(585934.6,	4131330.0,	70.1,	1.5);	(585944.6,	4131330.0,	69.7,	1.5);
(585954.6,	4131330.0,	69.6,	1.5);	(585964.6,	4131330.0,	69.6,	1.5);
(585974.6,	4131330.0,	69.6,	1.5);	(585984.6,	4131330.0,	69.5,	1.5);
(585994.6,	4131330.0,	69.2,	1.5);	(586004.6,	4131330.0,	69.1,	1.5);
(586014.6,	4131330.0,	68.9,	1.5);	(586024.6,	4131330.0,	68.9,	1.5);
(586034.6,	4131330.0,	68.8,	1.5);	(585252.5,	4131305.0,	77.6,	1.5);
(585262.5,	4131305.0,	77.5,	1.5);	(585272.5,	4131305.0,	77.4,	1.5);
(585282.5,	4131305.0,	77.4,	1.5);	(585252.5,	4131315.0,	77.9,	1.5);
(585262.5,	4131315.0,	77.5,	1.5);	(585272.5,	4131315.0,	77.5,	1.5);
(585282.5,	4131315.0,	77.5,	1.5);	(585252.5,	4131325.0,	77.9,	1.5);
(585262.5,	4131325.0,	77.6,	1.5);	(585272.5,	4131325.0,	77.4,	1.5);
(585282.5,	4131325.0,	77.4,	1.5);	(585252.5,	4131335.0,	77.7,	1.5);
(585262.5,	4131335.0,	77.5,	1.5);	(585272.5,	4131335.0,	77.3,	1.5);
(585282.5,	4131335.0,	77.2,	1.5);	(585252.5,	4131345.0,	77.8,	1.5);
(585262.5,	4131345.0,	77.4,	1.5);	(585272.5,	4131345.0,	77.3,	1.5);
(585282.5,	4131345.0,	77.1,	1.5);	(585252.5,	4131355.0,	77.8,	1.5);
(585262.5,	4131355.0,	77.5,	1.5);	(585272.5,	4131355.0,	77.3,	1.5);
(585282.5,	4131355.0,	77.2,	1.5);				

```
 *** ISCST3 - VERSION 02035 ***    *** Marina Plaza - Construction HRA                                   ***         03/23/16
                                   *** School Receptors                                                  ***         10:54:03
**MODELOPTs:                                                                                                         PAGE  28
CONC                    URBAN ELEV  FLGPOL DFAULT

                                                 *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                   (1=YES; 0=NO)

             1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
             1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
             1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
             1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
             1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
             1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
             1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
             1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

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

                                        *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                                 (METERS/SEC)

                                                  1.54,    3.09,    5.14,    8.23,   10.80,

                                                      *** WIND PROFILE EXPONENTS ***

                 STABILITY                                 WIND SPEED CATEGORY
                 CATEGORY         1               2               3               4               5               6
                    A         .15000E+00      .15000E+00      .15000E+00      .15000E+00      .15000E+00      .15000E+00
                    B         .15000E+00      .15000E+00      .15000E+00      .15000E+00      .15000E+00      .15000E+00
                    C         .20000E+00      .20000E+00      .20000E+00      .20000E+00      .20000E+00      .20000E+00
                    D         .25000E+00      .25000E+00      .25000E+00      .25000E+00      .25000E+00      .25000E+00
                    E         .30000E+00      .30000E+00      .30000E+00      .30000E+00      .30000E+00      .30000E+00
                    F         .30000E+00      .30000E+00      .30000E+00      .30000E+00      .30000E+00      .30000E+00

                                              *** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
                                                           (DEGREES KELVIN PER METER)

                 STABILITY                                 WIND SPEED CATEGORY
                 CATEGORY         1               2               3               4               5               6
                    A         .00000E+00      .00000E+00      .00000E+00      .00000E+00      .00000E+00      .00000E+00
                    B         .00000E+00      .00000E+00      .00000E+00      .00000E+00      .00000E+00      .00000E+00
                    C         .00000E+00      .00000E+00      .00000E+00      .00000E+00      .00000E+00      .00000E+00
                    D         .00000E+00      .00000E+00      .00000E+00      .00000E+00      .00000E+00      .00000E+00
                    E         .20000E-01      .20000E-01      .20000E-01      .20000E-01      .20000E-01      .20000E-01
                    F         .35000E-01      .35000E-01      .35000E-01      .35000E-01      .35000E-01      .35000E-01
```

Model Input - School Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: C:\!METFI~1\BAAQMD~1\ALV199~1.ASC
FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
SURFACE STATION NO.: 7905 UPPER AIR STATION NO.: 7905
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1998 YEAR: 1998

YR	MN	DY	HR	FLOW VECTOR	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT (M) RURAL	MIXING HEIGHT (M) URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)
98	01	01	01	152.8	1.00	281.8	6	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	02	325.6	1.83	282.0	5	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	03	303.8	1.83	281.4	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	04	321.9	1.39	280.9	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	05	177.0	1.00	280.8	5	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	06	208.2	1.07	280.5	6	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	07	297.7	1.30	280.0	6	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	08	16.9	1.03	279.6	6	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	09	264.5	1.34	280.5	5	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	10	320.3	2.24	281.8	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	11	351.2	1.74	283.5	3	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	12	58.0	1.34	285.0	2	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	13	253.7	1.25	286.0	1	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	14	309.3	1.61	286.9	2	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	15	110.7	2.37	287.1	1	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	16	154.0	2.46	285.5	2	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	17	170.5	1.56	285.3	3	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	18	246.2	1.43	285.0	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	19	314.1	2.10	285.0	5	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	20	313.1	2.64	284.5	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	21	319.9	4.34	285.4	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	22	315.9	3.80	284.8	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	23	317.7	4.52	285.0	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00
98	01	01	24	316.8	3.35	285.0	4	300.0	300.0	0.0000	0.0	0.0000	0	0.00

*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

Model Input - School Receptors
Unit Emission Rates (1 g/s)

CONC URBAN ELEV FLGPOL DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (26304 HRS) RESULTS ***

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

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
1	1ST HIGHEST VALUE IS	2.88614 AT (585834.56, 4131230.00, 71.13, 1.50)	DC	NA
	2ND HIGHEST VALUE IS	2.79953 AT (585834.56, 4131240.00, 71.10, 1.50)	DC	NA
	3RD HIGHEST VALUE IS	2.67391 AT (585834.56, 4131250.00, 71.03, 1.50)	DC	NA
	4TH HIGHEST VALUE IS	2.59165 AT (585844.56, 4131230.00, 70.71, 1.50)	DC	NA
	5TH HIGHEST VALUE IS	2.51013 AT (585834.56, 4131260.00, 71.02, 1.50)	DC	NA
	6TH HIGHEST VALUE IS	2.49363 AT (585844.56, 4131240.00, 70.61, 1.50)	DC	NA
	7TH HIGHEST VALUE IS	2.36372 AT (585844.56, 4131250.00, 70.66, 1.50)	DC	NA
	8TH HIGHEST VALUE IS	2.32859 AT (585854.56, 4131230.00, 70.52, 1.50)	DC	NA
	9TH HIGHEST VALUE IS	2.31327 AT (585834.56, 4131270.00, 71.09, 1.50)	DC	NA
	10TH HIGHEST VALUE IS	2.22491 AT (585854.56, 4131240.00, 70.54, 1.50)	DC	NA
2	1ST HIGHEST VALUE IS	2.93051 AT (585834.56, 4131290.00, 71.19, 1.50)	DC	NA
	2ND HIGHEST VALUE IS	2.93005 AT (585834.56, 4131280.00, 71.18, 1.50)	DC	NA
	3RD HIGHEST VALUE IS	2.92726 AT (585834.56, 4131300.00, 71.16, 1.50)	DC	NA
	4TH HIGHEST VALUE IS	2.92654 AT (585834.56, 4131270.00, 71.09, 1.50)	DC	NA
	5TH HIGHEST VALUE IS	2.92586 AT (585834.56, 4131310.00, 71.23, 1.50)	DC	NA
	6TH HIGHEST VALUE IS	2.92492 AT (585834.56, 4131260.00, 71.02, 1.50)	DC	NA
	7TH HIGHEST VALUE IS	2.92446 AT (585834.56, 4131320.00, 71.27, 1.50)	DC	NA
	8TH HIGHEST VALUE IS	2.92348 AT (585834.56, 4131250.00, 71.03, 1.50)	DC	NA
	9TH HIGHEST VALUE IS	2.92324 AT (585834.56, 4131230.00, 71.13, 1.50)	DC	NA
	10TH HIGHEST VALUE IS	2.92307 AT (585834.56, 4131240.00, 71.10, 1.50)	DC	NA

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

Model Input - School Receptors
Unit Emission Rates (1 g/s)

**MODELOPTs:
CONC URBAN ELEV FLGPOL DFAULT

*** Message Summary : ISCST3 Model Execution ***

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

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 60 Informational Message(s)

A Total of 60 Calm Hours Identified

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
RE W282 1370 CHK_EL:RecElev < SrcBase; See non-DFAULT HE>ZI option in MCB#9
ME W340 1379 ANEMHT:Possible Error In ANHT of ANEMHGHT. The Value is ANEMHGHT

****
*** ISCST3 Finishes Successfully ***
****

BAAQMD Meteorological Site

Name: Alviso
Site ID: 7905
Start Date:9/12/1989
End Date: 10/29/2001
Operator: BAAQMD
Latitude: 37.4347
Longitude: 121.9528
Elevation:1 m
Wind Height:10 m
UTM - East: 592.645
UTM - North: 4143.610
County: Santa Clara
Sensors: ws,wd,temp precip,solar insolation

Files for Downloading

Year	ASCII	ISCST3 300 m mixing height	ISCST3 600 m mixing height
2002	metdata7905-02met.zip	A	A
2001	metdata7905-01met.zip	A	A
2000	metdata7905-00met.zip	metdata7905-003ra.zip	metdata7905-006ra.zip
1999	metdata7905-99met.zip	metdata7905-993ra.zip	metdata7905-996ra.zip
1998	metdata7905-98met.zip	metdata7905-98300.zip	metdata7905-98600.zip
1997	metdata7905-97met.zip	metdata7905-97300.zip	metdata7905-97600.zip
1996	metdata7905-96met.zip	metdata7905-96300.zip	metdata7905-96600.zip
1995	metdata7905-95met.zip	metdata7905-95300.zip	metdata7905-95600.zip
1994	metdata7905-94met.zip	A	A
1993	metdata7905-93met.zip	metdata7905-93300.zip	metdata7905-93600.zip
1992	metdata7905-92met.zip	metdata7905-92300.zip	metdata7905-92600.zip
1991	metdata7905-91met.zip	A	A
1990	metdata7905-90met.zip	metdata7905-90300.zip	metdata7905-90600.zip

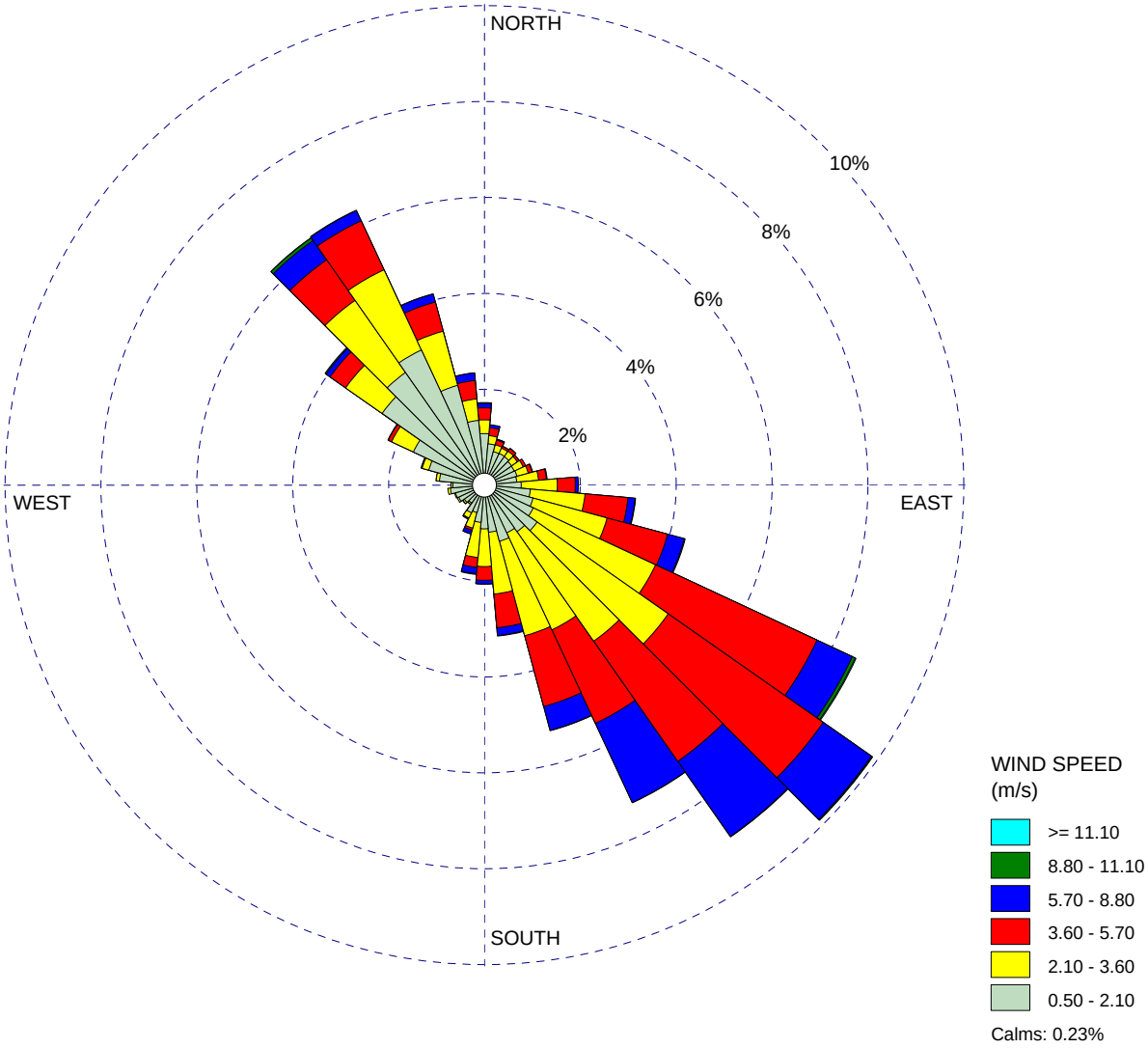
Note: An “A” instead of a filename for any given year in the ASCII column signifies the data are missing. An “A” in the ISCST3 columns indicates the data are either missing or do not meet the EPA 90% data capture rate required for regulatory modeling applications.

WIND ROSE PLOT:

Alviso Monitoring Station
1998-2000

DISPLAY:

Wind Speed
Flow Vector (blowing to)



COMMENTS:	DATA PERIOD: **Start Date: 1/1/1998 - 00:00** **End Date: 12/31/2000 - 23:59**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **0.23%**	TOTAL COUNT: **26304 hrs.**	
	AVG. WIND SPEED: **3.00 m/s**	DATE: **3/22/2016**	PROJECT NO.: **COCU-08.0**

Appendix C. Construction Risk Calculation Worksheets

Appendix

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Table C1
MER Concentrations

Residential Receptors - Unmitigated				
Emission Source (a)	ISCST3 Output [1] ($\mu g/m^3$) (b)	Pollutant (c)	Emission Rates [2] (g/s) (d)	MER Concentrations ($\mu g/m^3$) (f)
	Annual Average		Average Daily	Annual Average
2016 On-site	6.03	DPM	3.95E-02	**2.38E-01**
		$PM_{2.5}$	3.86E-02	**2.33E-01**
2016 Off-site	6.54	DPM	4.81E-06	**3.15E-05**
		$PM_{2.5}$	2.56E-05	**1.68E-04**
2017 On-site	6.03	DPM	6.01E-02	**3.63E-01**
		$PM_{2.5}$	7.63E-02	**4.60E-01**
2017 Off-site	6.54	DPM	4.61E-05	**3.02E-04**
		$PM_{2.5}$	1.68E-04	**1.10E-03**
2018 On-site	6.03	DPM	2.62E-02	**1.58E-01**
		$PM_{2.5}$	2.49E-02	**1.50E-01**
2018 Off-site	6.54	DPM	1.74E-05	**1.14E-04**
		$PM_{2.5}$	1.12E-04	**7.34E-04**
2019 On-site	6.03	DPM	2.31E-02	**1.39E-01**
		$PM_{2.5}$	2.19E-02	**1.32E-01**
2019 Off-site	6.54	DPM	1.32E-05	**8.64E-05**
		$PM_{2.5}$	9.82E-05	**6.42E-04**
Residential Receptors - Mitigation: Tier 3 Engines & Level 3 DPF for equipment > 50 HP				
Source (a)	ISCST3 Output [1] ($\mu g/m^3$) (c)	Pollutant (b)	Emission Rates [2] (g/s) (d)	Mass GLC ($\mu g/m^3$) (f)
	Annual Average		Average Daily	Annual Average
2016 On-site	6.03	DPM	2.37E-03	**1.43E-02**
		$PM_{2.5}$	4.12E-03	**2.49E-02**
2016 Off-site	6.54	DPM	4.81E-06	**3.15E-05**
		$PM_{2.5}$	2.56E-05	**1.68E-04**
2017 On-site	6.03	DPM	5.35E-03	**3.22E-02**
		$PM_{2.5}$	2.56E-02	**1.55E-01**
2017 Off-site	6.54	DPM	4.61E-05	**3.02E-04**
		$PM_{2.5}$	1.68E-04	**1.10E-03**
2018 On-site	6.03	DPM	4.14E-03	**2.50E-02**
		$PM_{2.5}$	4.14E-03	**2.50E-02**
2018 Off-site	6.54	DPM	1.74E-05	**1.14E-04**
		$PM_{2.5}$	1.12E-04	**7.34E-04**
2019 On-site	6.03	DPM	3.68E-03	**2.22E-02**
		$PM_{2.5}$	3.68E-03	**2.22E-02**
2019 Off-site	6.54	DPM	1.32E-05	**8.64E-05**
		$PM_{2.5}$	9.82E-05	**6.42E-04**

MER UTM coordinates: 585525.50E, 4131397.00N

[1] ISCST3 Output at the MER for On-site emissions based on unit emission rates for sources (1 g/s).

[2] Emission Rates from Emission Rate Calculations (Appendix A - Construction Emissions).

Table C2
Quantification of Carcinogenic Risks for Offsite Residents

	Source	MER Conc. ($\mu g/m^3$)	Weight Fraction	Contaminant	URF $(\mu g/m^3)^{-1}$	CPF $(mg/kg/day)^{-1}$	Dose (by age bin) 3rd Trimester (mg/kg-day)	Dose (by age bin) 0 < 2 years (mg/kg-day)	Dose (by age bin) 2 < 16 years (mg/kg-day)	Dose (by age bin) 16 < 70 years (mg/kg-day)	Carcinogenic Risks (by age bin) 3rd Trimester per million	Carcinogenic Risks (by age bin) 0 < 2 years per million	Carcinogenic Risks (by age bin) 2 < 16 years per million	Carcinogenic Risks (by age bin) 16 < 70 years per million	**Total Risk** per million
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Residential Receptors - Unmitigated																
2016	On-Site Emissions	2.38E-01	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	8.3E-05				1.79E+00				1.79
	Truck Route	3.15E-05	1.00E+00		3.0E-04	1.1E+00	1.1E-08				2.36E-04				0.00
2017	On-Site Emissions	3.63E-01	1.00E+00		3.0E-04	1.1E+00	1.3E-04	3.8E-04			1.28E+00	4.45E+01			45.73
	Truck Route	3.02E-04	1.00E+00		3.0E-04	1.1E+00	1.0E-07	3.2E-07			1.07E-03	3.70E-02			0.04
2018	On-Site Emissions	1.58E-01	1.00E+00		3.0E-04	1.1E+00		1.7E-04				2.11E+01			21.08
	Truck Route	1.14E-04	1.00E+00		3.0E-04	1.1E+00		1.2E-07				1.52E-02			0.02
2019	On-Site Emissions	1.39E-01	1.00E+00		3.0E-04	1.1E+00		1.5E-04	9.9E-05			1.48E+00	2.97E+00		4.45
	Truck Route	8.64E-05	1.00E+00		3.0E-04	1.1E+00		9.0E-08	6.2E-08			9.21E-04	1.84E-03		0.00
													Total Cancer Risk		**73.1**
Residential Receptors - Mitigated Run: Tier 3 Engines and Level 3 Diesel Particulate Filters for equipment 50 HP or greater															
2016	On-Site Emissions	1.43E-02	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	4.9E-06				1.07E-01				0.11
	Truck Route	3.15E-05	1.00E+00		3.0E-04	1.1E+00	1.1E-08				2.36E-04				0.00
2018	On-Site Emissions	3.22E-02	1.00E+00		3.0E-04	1.1E+00	1.1E-05	3.4E-05			1.14E-01	3.95E+00			4.07
	Truck Route	3.02E-04	1.00E+00		3.0E-04	1.1E+00	1.0E-07	3.2E-07			1.07E-03	3.70E-02			0.04
2019	On-Site Emissions	2.50E-02	1.00E+00		3.0E-04	1.1E+00		2.6E-05				3.33E+00			3.33
	Truck Route	1.14E-04	1.00E+00		3.0E-04	1.1E+00		1.2E-07				1.52E-02			0.02
2020	On-Site Emissions	2.22E-02	1.00E+00		3.0E-04	1.1E+00		2.3E-05	1.6E-05			2.37E-01	4.72E-01		0.71
	Truck Route	8.64E-05	1.00E+00		3.0E-04	1.1E+00		9.0E-08	6.2E-08			9.21E-04	1.84E-03		0.00
													Total Cancer Risk		**8.27**

MER UTM coordinates: 585525.50E, 4131397.00N

		age bin	3rd Trimester	0 < 2 years	2 < 16 years	16 < 70 years
		exposure year(s)	2016-2017	2017-2019	2019	n/a
Dose Exposure Factors:		exposure frequency (days/year)	350	350	350	350
		inhalation rate (L/kg-day) [1]	361	1090	745	290
		inhalation absorption factor	1	1	1	1
Risk Calculation Factors:		age sensitivity factor	10	10	3	1
		averaging time (years)	70	70	70	70
		fraction of time at home	0.85	0.85	0.72	0.73

exposure durations per age bin		exposure durations (year)			
Construction Year	Risk Scalar [2]	3rd Trimester	0 < 2 years	2 < 16 years	16 < 70 years
2016	0.17	0.17			
2017	1.00	0.08	0.92		
2018	1.00		1.00		
2019	1.00		0.08	0.92	
Total	3.17	0.25	2.00	0.92	

[1] Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

[2] Residential risk scalar determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App A - Construction Emissions).

Table C3
Quantification of Non-Carcinogenic Risks
Chronic Hazards for Offsite Residents

Source		REL Type	MER Conc. ($\mu g/m^3$)	Weight Fraction	Contaminant	Chronic Hazards / Toxicological Endpoints*							
						REL ($\mu g/m^3$)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
Residential Receptors - Unmitigated														
2016	On-Site Emissions	Chronic	2.38E-01	1.00E+00	Diesel Particulate	5.0E+00	4.8E-02							
	Truck Route		3.15E-05	1.00E+00		5.0E+00	6.3E-06							
2017	On-Site Emissions		3.63E-01	1.00E+00		5.0E+00	7.3E-02							
	Truck Route		3.02E-04	1.00E+00		5.0E+00	6.0E-05							
2018	On-Site Emissions		1.58E-01	1.00E+00		5.0E+00	3.2E-02							
	Truck Route		1.14E-04	1.00E+00		5.0E+00	2.3E-05							
2019	On-Site Emissions		1.39E-01	1.00E+00		5.0E+00	2.8E-02							
	Truck Route		8.64E-05	1.00E+00		5.0E+00	1.7E-05							
TOTAL							1.8E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
					Maximum Chronic Hazard		**0.180**							
Residential Receptors - Mitigated Run: Tier 3 Engines and Level 3 Diesel Particulate Filters for equipment 50 HP or greater														
2016	On-Site Emissions	Chronic	1.43E-02	1.00E+00	Diesel Particulate	5.0E+00	2.9E-03							
	Truck Route		3.15E-05	1.00E+00		5.0E+00	6.3E-06							
2017	On-Site Emissions		3.22E-02	1.00E+00		5.0E+00	6.4E-03							
	Truck Route		3.02E-04	1.00E+00		5.0E+00	6.0E-05							
2018	On-Site Emissions		2.50E-02	1.00E+00		5.0E+00	5.0E-03							
	Truck Route		1.14E-04	1.00E+00		5.0E+00	2.3E-05							
2019	On-Site Emissions		2.22E-02	1.00E+00		5.0E+00	4.4E-03							
	Truck Route		8.64E-05	1.00E+00		5.0E+00	1.7E-05							
TOTAL							1.9E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
					Maximum Chronic Hazard		**0.019**							

MER UTM coordinates: 585525.50E, 4131397.00N

* Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
REPRO	Reproductive System
EYES	Eye irritation and/or other effects

Table C4
$PM_{2.5}$ Concentrations at Offsite Residents

Contaminant		Source	MER Conc. ($\mu g/m^3$)	Concentration Annual Average ($\mu g/m^3$)
(a)		(b)	(c)	(d)
Residential Receptors - Unmitigated				
$PM_{2.5}$	2016	On-Site Emissions	2.33E-01	0.23
		Truck Route	1.68E-04	
	2017	On-Site Emissions	4.60E-01	0.46
		Truck Route	1.10E-03	
	2018	On-Site Emissions	1.50E-01	0.15
		Truck Route	7.34E-04	
	2019	On-Site Emissions	1.32E-01	0.13
		Truck Route	6.42E-04	
	Maximum Annual $PM_{2.5}$ Concentration			**0.46**

Residential Receptors - Mitigated Run: Tier 3 Engines & Level 3 DPF for equipment > 50				
$PM_{2.5}$	2016	On-Site Emissions	2.49E-02	0.03
		Truck Route	1.68E-04	
	2017	On-Site Emissions	1.55E-01	0.16
		Truck Route	1.10E-03	
	2018	On-Site Emissions	2.50E-02	0.03
		Truck Route	7.34E-04	
	2019	On-Site Emissions	2.22E-02	0.023
		Truck Route	6.42E-04	
	Maximum Annual $PM_{2.5}$ Concentration			**0.16**

MER UTM coordinates: 585525.50E, 4131397.00N

Table C5
School MER Concentrations

School Receptors - Unmitigated				
Emission Source	ISCST3 Output [1] ($\mu g/m^3$)	Pollutant	Emission Rates [2] (g/s)	MER Concentrations ($\mu g/m^3$)
(a)	(b)	(c)	(d)	(f)
	Annual Average		Average Daily	Annual Average
2016 On-site	2.89	DPM	3.95E-02	**1.14E-01**
		$PM_{2.5}$	3.86E-02	**1.11E-01**
2016 Off-site	2.93	DPM	4.81E-06	**1.41E-05**
		$PM_{2.5}$	2.56E-05	**7.50E-05**
2017 On-site	2.89	DPM	6.01E-02	**1.74E-01**
		$PM_{2.5}$	7.63E-02	**2.20E-01**
2017 Off-site	2.93	DPM	4.61E-05	**1.35E-04**
		$PM_{2.5}$	1.68E-04	**4.92E-04**
2018 On-site	2.89	DPM	2.62E-02	**7.57E-02**
		$PM_{2.5}$	2.49E-02	**7.20E-02**
2018 Off-site	2.93	DPM	1.74E-05	**5.11E-05**
		$PM_{2.5}$	1.12E-04	**3.29E-04**
2019 On-site	2.89	DPM	2.31E-02	**6.66E-02**
		$PM_{2.5}$	2.19E-02	**6.32E-02**
2019 Off-site	2.93	DPM	1.32E-05	**3.87E-05**
		$PM_{2.5}$	9.82E-05	**2.88E-04**
School Receptors - Mitigation: Tier 3 Engines & Level 3 DPF for equipment > 50 HP				
Source	ISCST3 Output [1] ($\mu g/m^3$)	Pollutant	Emission Rates [2] (g/s)	Mass GLC ($\mu g/m^3$)
(a)	(c)	(b)	(d)	(f)
	Annual Average		Average Daily	Annual Average
2016 On-site	2.89	DPM	2.37E-03	**6.84E-03**
		$PM_{2.5}$	4.12E-03	**1.19E-02**
2016 Off-site	2.93	DPM	4.81E-06	**1.41E-05**
		$PM_{2.5}$	2.56E-05	**7.50E-05**
2017 On-site	2.89	DPM	5.35E-03	**1.54E-02**
		$PM_{2.5}$	2.56E-02	**7.40E-02**
2017 Off-site	2.93	DPM	4.61E-05	**1.35E-04**
		$PM_{2.5}$	1.68E-04	**4.92E-04**
2018 On-site	2.89	DPM	4.14E-03	**1.19E-02**
		$PM_{2.5}$	4.14E-03	**1.19E-02**
2018 Off-site	2.93	DPM	1.74E-05	**5.11E-05**
		$PM_{2.5}$	1.12E-04	**3.29E-04**
2019 On-site	2.89	DPM	3.68E-03	**1.06E-02**
		$PM_{2.5}$	3.68E-03	**1.06E-02**
2019 Off-site	2.93	DPM	1.32E-05	**3.87E-05**
		$PM_{2.5}$	9.82E-05	**2.88E-04**

MER UTM coordinates: 585834.56E, 4131230.00N (St. Joseph of Cupertino School)

[1] ISCST3 Output at the schools MER for On-site emissions based on unit emission rates for sources (1 g/s).

[2] Emission Rates from Emission Rate Calculations (Appendix A - Construction Emissions).

Table C6
Quantification of Carcinogenic Risks for Off-site School Receptors

Source		MER Conc. ($\mu g/m^3$)	Weight Fraction	Contaminant	URF $(\mu g/m^3)^{-1}$	CPF $(mg/kg/day)^{-1}$	Dose (by age bin) Students (mg/kg-day)	Dose (by age bin) Staff (mg/kg-day)	Carcinogenic Risks (by age bin) Students per million	Carcinogenic Risks (by age bin) Staff per million
(a)		(b)	(c)	(d)	(e)	(f)	(i)	(j)	(m)	(n)
School Receptors - Unmitigated										
2016	On-Site Emissions	1.14E-01	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	2.9E-05	1.8E-05	4.17E+00	8.54E-01
	Truck Route	1.41E-05	1.00E+00		3.0E-04	1.1E+00	3.6E-09	2.2E-09	5.15E-04	1.06E-04
2017	On-Site Emissions	1.74E-01	1.00E+00		3.0E-04	1.1E+00	4.4E-05	2.7E-05	6.35E+00	1.30E+00
	Truck Route	1.35E-04	1.00E+00		3.0E-04	1.1E+00	3.5E-08	2.1E-08	4.94E-03	1.01E-03
2018	On-Site Emissions	7.57E-02	1.00E+00		3.0E-04	1.1E+00	1.9E-05	1.2E-05	2.77E+00	5.67E-01
	Truck Route	5.11E-05	1.00E+00		3.0E-04	1.1E+00	1.3E-08	8.0E-09	1.87E-03	3.83E-04
2019	On-Site Emissions	6.66E-02	1.00E+00		3.0E-04	1.1E+00	1.7E-05	1.0E-05	2.44E+00	4.99E-01
	Truck Route	3.87E-05	1.00E+00		3.0E-04	1.1E+00	9.9E-09	6.1E-09	1.42E-03	2.90E-04
							Total Cancer Risk		**15.7**	**3.22**
School Receptors - Mitgated Run: Tier 3 Engines and Level 3 Diesel Particulate Filters for equipment 50 HP or greater										
2016	On-Site Emissions	6.84E-03	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	1.8E-06	1.1E-06	2.50E-01	5.12E-02
	Truck Route	1.41E-05	1.00E+00		3.0E-04	1.1E+00	3.6E-09	2.2E-09	5.15E-04	1.06E-04
2018	On-Site Emissions	1.54E-02	1.00E+00		3.0E-04	1.1E+00	4.0E-06	2.4E-06	5.64E-01	1.16E-01
	Truck Route	1.35E-04	1.00E+00		3.0E-04	1.1E+00	3.5E-08	2.1E-08	4.94E-03	1.01E-03
2019	On-Site Emissions	1.19E-02	1.00E+00		3.0E-04	1.1E+00	3.1E-06	1.9E-06	4.37E-01	8.95E-02
	Truck Route	5.11E-05	1.00E+00		3.0E-04	1.1E+00	1.3E-08	8.0E-09	1.87E-03	3.83E-04
2020	On-Site Emissions	1.06E-02	1.00E+00		3.0E-04	1.1E+00	2.7E-06	1.7E-06	3.88E-01	7.95E-02
	Truck Route	3.87E-05	1.00E+00		3.0E-04	1.1E+00	9.9E-09	6.1E-09	1.42E-03	2.90E-04
							Total Cancer Risk		**1.65**	**0.34**

MER UTM coordinates: 585834.56E, 4131230.00N (St. Joseph of Cupertino School)

		Students	Staff
	age bin	2 < 16 years	16 < 70 years
	exposure year(s)	2016-2019	2016-2019
Dose Exposure Factors:	exposure frequency (days/year)	180	250
	8-hour inhalation rate (L/kg-day) [1]	520	230
	inhalation absorption factor	1	1
Risk Calculation Factors:	age sensitivity factor	3	1
	exposure duration (years)	3.17	3.17
	averaging time (years)	70	70

[1] 8-hour inhalation rate taken as the 95th percentile breathing rates for Moderate Intensity Activities (OEHHA, 2015).

Table C7
Quantification of Non-Carcinogenic Risks
Chronic Hazards for Off-site School Receptors

Source		REL Type	MER Conc. ($\mu g/m^3$)	Weight Fraction	Contaminant	Chronic Hazards / Toxicological Endpoints*							
						REL ($\mu g/m^3$)	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
School Receptors - Unmitigated														
2016	On-Site Emissions	Chronic	1.14E-01	1.00E+00	Diesel Particulate	5.0E+00	2.3E-02							
	Truck Route		1.41E-05	1.00E+00		5.0E+00	2.8E-06							
2017	On-Site Emissions		1.74E-01	1.00E+00		5.0E+00	3.5E-02							
	Truck Route		1.35E-04	1.00E+00		5.0E+00	2.7E-05							
2018	On-Site Emissions		7.57E-02	1.00E+00		5.0E+00	1.5E-02							
	Truck Route		5.11E-05	1.00E+00		5.0E+00	1.0E-05							
2019	On-Site Emissions		6.66E-02	1.00E+00		5.0E+00	1.3E-02							
	Truck Route		3.87E-05	1.00E+00		5.0E+00	7.7E-06							
TOTAL							8.6E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
					Maximum Chronic Hazard		**0.086**							
School Receptors - Mitgated Run: Tier 3 Engines and Level 3 Diesel Particulate Filters for equipment 50 HP or greater														
2016	On-Site Emissions	Chronic	6.84E-03	1.00E+00	Diesel Particulate	5.0E+00	1.4E-03							
	Truck Route		1.41E-05	1.00E+00		5.0E+00	2.8E-06							
2017	On-Site Emissions		1.54E-02	1.00E+00		5.0E+00	3.1E-03							
	Truck Route		1.35E-04	1.00E+00		5.0E+00	2.7E-05							
2018	On-Site Emissions		1.19E-02	1.00E+00		5.0E+00	2.4E-03							
	Truck Route		5.11E-05	1.00E+00		5.0E+00	1.0E-05							
2019	On-Site Emissions		1.06E-02	1.00E+00		5.0E+00	2.1E-03							
	Truck Route		3.87E-05	1.00E+00		5.0E+00	7.7E-06							
TOTAL							9.0E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
					Maximum Chronic Hazard		**0.009**							

MER UTM coordinates: 585834.56E, 4131230.00N (St. Joseph of Cupertino School)

* Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
REPRO	Reproductive System
EYES	Eye irritation and/or other effects

Table C8
$PM_{2.5}$ Concentrations at Off-site School Receptors

Contaminant	Source		MER Conc. ($\mu g/m^3$)	Concentration Annual Average ($\mu g/m^3$)
(a)	(b)		(c)	(d)
School Receptors - Unmitigated				
$PM_{2.5}$	2016	On-Site Emissions	1.11E-01	0.11
		Truck Route	7.50E-05	
	2017	On-Site Emissions	2.20E-01	0.22
		Truck Route	4.92E-04	
	2018	On-Site Emissions	7.20E-02	0.07
		Truck Route	3.29E-04	
	2019	On-Site Emissions	6.32E-02	0.06
		Truck Route	2.88E-04	
	Maximum Annual $PM_{2.5}$ Concentration			**0.22**

School Receptors - Mitigated Run: Tier 3 Engines & Level 3 DPF for equipment				
$PM_{2.5}$	2016	On-Site Emissions	1.19E-02	0.012
		Truck Route	7.50E-05	
	2017	On-Site Emissions	7.40E-02	0.074
		Truck Route	4.92E-04	
	2018	On-Site Emissions	1.19E-02	0.012
		Truck Route	3.29E-04	
	2019	On-Site Emissions	1.06E-02	0.011
		Truck Route	2.88E-04	
	Maximum Annual $PM_{2.5}$ Concentration			**0.074**

MER UTM coordinates: 585834.56E, 4131230.00N (St. Joseph of Cupertino School)

Appendix D. Operational Risk Calculation Worksheets

Appendix

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Table D1 - On-site HRA
Screening Evaluation

Mobile Source - Screening Evaluation

Residential Exposure Scenario

Source No.	Source	Roadway Orientation	Annual Average Daily Trips	Distance	Cancer Risk (per million)	Chronic HI	Acute HI	PM2.5 ($\mu g/m^3$)	Comments
1	De Anza Boulevard	East-West	42,740	175 ft	8.21	0.030	0.030	0.16	Roadway Screening Analysis Calculator
2	Stevens Creek Boulevard	North-South	32,020	200 ft	7.32	0.030	0.030	0.14	Roadway Screening Analysis Calculator
BAAQMD Significance Threshold					10.0	1.0	1.0	0.30	For each individual source
Exceeds Threshold?					**No**	**No**	**No**	**No**	

Sources: Fehr & Peers Traffic Impact Analysis for Marina Plaza (2016) and BAAQMD Roadway Screening Analysis Calculator (2015).

Stationary Source - Screening Evaluation

Residential Exposure Scenario

Source No.	Source	BAAQMD Facility ID	Distance (feet)	Distance Multiplier	Cancer Risk (per million)	Chronic HI	Acute HI	PM2.5 ($\mu g/m^3$)	Comments
3	De Anza Carwash	G11920	60	1.0	3.65	0.006	0.006	n/a	Screening values
4	Apple Inc.	16709	625		39.2	0.014	0.014	0.009	Screening values
				0.09	3.53	0.001	0.014	0.009	Values w/ distance multiplier
5	Target Store T-0323	17616	300	n/a	0.00	0.00	0.00	0.243	Screening values
6	Chevron 5954	G3420	170		31.76	0.053	0.053	n/a	Screening values
				0.26	8.26	0.014	0.053	n/a	Values w/ distance multiplier
7	Verona Owners	16623	650		17.52	0.006	0.006	0.004	Screening values
				0.09	1.58	0.001	0.006	0.004	Values w/ distance multiplier
8	Cypress Hotel	14562	750	n/a	4.42	0.001	0.001	0.014	Health risk screening assessment (HRSA) values
9	Beacon Gas Station	G486	400		23.1	0.038	0.038	n/a	Screening values
				0.066	1.52	0.003	0.038	n/a	Values w/ distance multiplier
10	Sierra Cleaners	18228	1,000	n/a	0.00	0.00	0.00	0.00	Screening values
11	Dryclean Pro	3049	900	n/a	0.00	0.00	0.00	0.00	Screening values
12	Cupertino City Center	18553	1,000		78.3	0.028	0.028	0.018	Screening values
	Buildings			0.04	3.13	0.001	0.028	0.018	Values w/ distance multiplier
BAAQMD Significance Threshold					10.0	1.0	1.0	0.30	For each individual source
Exceeds Threshold?					**No**	**No**	**No**	**No**	

Sources: BAAQMD Risk & Hazard Stationary Source Inquiry Form (2016), with distance multipliers for gasoline stations and diesel engines.

Table D2 - Summary of On-site Health Risks
Individual Sources and Cumulative

Health Risk Summary

Residential Scenario - Health Risk Values

Source No.	Source	Cancer Risk (per	Chronic HI	Acute HI	PM2.5 ($\mu g/m^3$)	Methodology
SCREENING ANALYSIS VALUES						
1	De Anza Boulevard	8.21	0.03	0.03	0.16	Roadway Screening Analysis Calculator
2	Stevens Creek Boulevard	7.32	0.03	0.03	0.14	Roadway Screening Analysis Calculator
3	De Anza Carwash	3.65	0.01	0.01	n/a	Screening values
4	Apple Inc.	3.53	0.00	0.01	0.01	Screening values with distance multiplier
5	Target Store T-0323	0.00	0.00	0.00	0.24	Screening values
6	Chevron 5954	8.26	0.01	0.05	n/a	Screening values with distance multiplier
7	Verona Owners Association	1.58	0.00	0.01	0.00	Screening values with distance multiplier
8	Cypress Hotel	4.42	0.00	0.00	0.01	Health risk screening assessment (HRSA) values
9	Beacon Gas Station	1.52	0.00	0.04	n/a	Screening values with distance multiplier
10	Sierra Cleaners	0.00	0.00	0.00	0.00	Screening values
11	Dryclean Pro	0.00	0.00	0.00	0.00	Screening values
12	Cupertino City Center Buildings	3.13	0.00	0.03	0.02	Screening values with distance multiplier
	BAAQMD Significance Threshold	10.0	1.0	1.0	0.30	For each individual source
	Exceeds Threhold?	**No**	**No**	**No**	**No**	
	Cumulative Total	41.6	0.09	0.21	0.59	For ALL Sources
	BAAQMD Significance Threshold	100	10.0	10.0	0.80	
	Exceeds Threhold?	**No**	**No**	**No**	**No**	