Air Quality and Greenhouse Gas Background and Modeling Data

AIR QUALITY

Climate/Meteorology

SOUTH COAST AIR BASIN

The project site lies in the South Coast Air Basin (SoCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project site is the Los Angeles Downtown USC Campus Station (ID No. 045115). The lowest average low is reported at 48.3°F in January while the highest average high is 83.1°F in August (WRCC 2018).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from October through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 14.77 inches per year in the project area according to the data from the Los Angeles Downtown USC Campus Station (ID No. 045115) (WRCC 2018).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

Air Quality Regulations

The proposed project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the SoCAB and is subject to the rules and regulations imposed by the South Coast Air Quality Management District (SCAQMD). However, SCAQMD reports to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) was passed in 1963 by the US 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 (CCAA), 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, based on even greater health and welfare concerns.

These National AAQS 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. As shown in Table 1, these pollutants include 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[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[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 Mean	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	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	
Respirable Coarse 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	
Respirable Fine Particulate Matter	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
($PM_{2.5}$)[4]	24 hours	*	35 µg/m^3	photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
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 Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	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: CARB 2016.
Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

CRITERIA AIR POLLUTANTS

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide (NO_2), 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, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria 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 to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; USEPA 2018a). The SoCAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2017a).

Volatile Organic Compounds (VOC) are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of ozone (O_3), SCAQMD has established a significance threshold for this pollutant (SCAQMD 2005).

Nitrogen Oxides (NO_x) are a byproduct of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2). The principal form of NO_2 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 acts as an acute irritant and, in equal concentrations, is 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 part 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 pressure (SCAQMD 2005; USEPA 2018a). The SoCAB is designated as an attainment area for NO_2 under the National AAQS California AAQS (CARB 2017a).

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 (SCAQMD 2005; USEPA 2018a). When sulfur dioxide 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. The SoCAB is designated as attainment under the California and National AAQS (CARB 2017a).

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 (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading (i.e., fugitive dust). 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 (SCAQMD 2005).

The US Environmental Protection Agency's (EPA) scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at concentrations that extend well below those allowed by the current PM_{10} standards. 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 individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms (SCAQMD 2005). There has been emerging evidence that even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤ 0.1 millionths of a meter or <0.000004 inch), known as ultrafine particulates (UFPs), have human health implications, because UFPs toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (SCAQMD 2016). However, the EPA or CARB have yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is classified by the CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and aesthetic damage[3]

[1] $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

(SCAQMD 2005; USEPA 2018a). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2017a).[4]

Ozone (O_3) is commonly referred to as "smog" and is a gas that is formed when VOCs 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 for 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. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (SCAQMD 2005; USEPA 2018a). The SoCAB is designated as extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2017a).

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (SCAQMD 2005; USEPA 2018a). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted stricter lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[5] As a result of these violations, the Los Angeles County portion of the SoCAB is designated nonattainment under the National AAQS for lead (SCAQMD 2012; CARB 2017a). Because emissions of

[2] Particulate matter can be carried over long distances by wind and then settle on ground or water, making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.

[3] Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

[4] CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM_{10} standards during the period from 2004 to 2007. In June 2013, the EPA approved the State of California's request to redesignate the PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

[5] Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012).

lead are found only in projects that are permitted by SCAQMD, lead is not a pollutant of concern for the project.

TOXIC AIR CONTAMINANTS

The public's exposure to air pollutants classified as toxic air contaminants (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 to 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 (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §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 determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (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 forth 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, all of which are 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, toxic air contaminant 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 in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). 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.

Diesel Particulate Matter

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 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 lung.

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

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

Community Risk

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.

Multiple Airborne Toxics Exposure Study (MATES)

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on ambient concentrations of TACs and estimated the potential health risks from air toxics in the SoCAB. In 2008, SCAQMD conducted its third update to the MATES study (MATES III). The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, accounting for 84 percent of the cancer risk (SCAQMD 2008a).

SCAQMD recently released the fourth update (MATES IV). The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the 2008 MATES III, monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources while 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, accounting for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated basin-wide population-weighted risk decreased by approximately 57 percent compared to the analysis done for the MATES III time period (SCAQMD 2015a).

The Office of Environmental Health Hazard Assessment (OEHHA) updated the guidelines for estimating cancer risks on March 6, 2015. The new method utilizes higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on breathing rates and length of residential exposures. When combined together, SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher using the proposed updated methods identified in MATES IV (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (SCAQMD 2015a).

Air Quality Management Planning

SCAQMD is the agency responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2016 AQMP

On March 3, 2017, SCAQMD adopted the 2016 AQMP as an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the following National AAQS:

- 2008 National 8-hour ozone standard by 2031,
- 2012 National annual $PM_{2.5}$ standard by 2025[6],
- 2006 National 24-hour $PM_{2.5}$ standard by 2019,
- 1997 National 8-hour ozone standard by 2023, and the
- 1979 National 1-hour ozone standard by year 2022.

It is projected that total NO_X emissions in the SoCAB would need to be reduced to 150 tons per day (tpd) by year 2023 and to 100 tpd in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (SCAQMD 2017), which requires reducing NO_X emissions in the SoCAB to 250 tpd. This is approximately 45 percent additional reductions above existing regulations for the 2023 ozone standard and 55 percent additional reductions above existing regulations to meet the 2031 ozone standard.

Reducing NO_X emissions would also reduce $PM_{2.5}$ concentrations in the SoCAB. However, as the goal is to meet the 2012 federal annual $PM_{2.5}$ standard no later than year 2025, SCAQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" non-attainment would require meeting the 2012 federal standard by no later than 2021.

Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile-source strategies, and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in the 2016 AQMP would be implemented in collaboration between CARB and the EPA (SCAQMD 2017).

[6] The 2016 AQMP requests a reclassification from moderate to serious non-attainment for the 2012 National $PM_{2.5}$ standard.

LEAD STATE IMPLEMENTATION PLAN

In 2008 EPA designated the Los Angeles County portion of the SoCAB nonattainment under the federal lead (Pb) classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard. The rest of the SoCAB, outside the Los Angeles County nonattainment area remains in attainment of the new standard. On May 24, 2012, CARB approved the SIP revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to EPA for approval.

AREA DESIGNATIONS

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the State Implementation Plan (SIP). Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- **Unclassified:** a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** a pollutant is in attainment if the CAAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** a pollutant is in nonattainment if there was at least one violation of a state AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 2. The SoCAB is designated in attainment of the California AAQS for sulfates. The SoCAB is designated as nonattainment for lead (Los Angeles County only) under the National AAQS.

Table 2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment[1]
CO	Attainment	Attainment
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[2]

Table 2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2017a.
[1] SCAQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under federal $PM_{2.5}$ standard.
[2] In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial emitters. Remaining areas in the SoCAB are unclassified.

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 taken by the SCAQMD. The project site is in Source Receptor Area (SRA) 12 – South Central Los Angeles County. The air quality monitoring station closest to the project site is the Compton-700 North Bullis Road Monitoring Station. This station monitors O_3, NO_2, and $PM_{2.5}$.. Data for PM_{10} is supplemented by the Los Angeles-North Main Street Monitoring Station. Data for CO and SO_2 is unavailable for Los Angeles County. The most current five years of data monitored at these monitoring stations are included in Table 3. The data show recurring violations of both the state and federal O_3 standards. The data also indicate that the area consistently exceeds the state PM_{10} standards and federal $PM_{2.5}$ standard.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2013	2014	2015	2016	2017
Ozone (O_3) [1]					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	0	0	1	0
State 8-hour ≥ 0.07 ppm (days exceed threshold)	1	4	1	1	5
Federal 8-Hour > 0.075 ppm (days exceed threshold)	1	2	0	0	1
Max. 1-Hour Conc. (ppm)	0.090	0.094	0.091	0.098	0.092
Max. 8-Hour Conc. (ppm)	0.080	0.081	0.072	0.071	0.076
Nitrogen Dioxide (NO_2) [1]					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.070	0.068	0.074	0.064	0.099
Coarse Particulates (PM_{10}) [2]					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	20	38	30	*	*
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m^3)	57	66	73	64	65
Fine Particulates ($PM_{2.5}$) [1]					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	1	1	3	1	5
Max. 24-Hour Conc. (µg/m^3)	52.1	35.8	41.3	36.3	66.7

Source: CARB 2018a.
ppm: parts per million; parts per billion, µg/m^3: micrograms per cubic meter
Notes: * Data not available.
[1] Data obtained from the Compton-700 North Bullis Road.
[2] Data obtained from the Los Angeles-North Main Street.

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 cardio-respiratory diseases.

Residential areas are also considered to be 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. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. 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 and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as 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 public. The nearest sensitive receptors to the proposed project site are the single-family and multi-family residences across the street, surrounding the project area.

Methodology

Projected construction-related air pollutant emissions are calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod compiles an emissions inventory of construction (fugitive dust, off-gas emissions, on-road emissions, and off-road emissions), area sources, indirect emissions from energy use, mobile sources, indirect emissions from waste disposal (annual only), and indirect emissions from water/wastewater (annual only) use. The calculated emissions of the project are compared to thresholds of significance for individual projects using the SCAQMD's CEQA Air Quality Analysis Guidance Handbook.

Thresholds of Significance

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website (SCAQMD 1993).[7] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed though an analysis of localized CO impacts and localized significance thresholds (LSTs).

[7] SCAQMD's Air Quality Significance Thresholds are current as of March 2015 and can be found here: http://www.aqmd.gov/ceqa/hdbk.html.

REGIONAL SIGNIFICANCE THRESHOLDS

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 4 lists SCAQMD's regional significance thresholds that are applicable for all projects uniformly regardless of size or scope. There is growing evidence that although ultrafine particulates contribute a very small portion of the overall atmospheric mass concentration, they represent a greater proportion of the health risk from PM. However, the EPA or CARB have not yet adopted AAQS to regulate ultrafine particulates; therefore, SCAQMD has not developed thresholds for them.

Table 4 SCAQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: SCAQMD 2015b.

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems:

- Linked to increased cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)
- Increases bronchitis (O_3, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)
- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Linked to lower birth weight in newborns ($PM_{2.5}$) (SCAQMD 2015c)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists responsible for a landmark children's health study found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (SCAQMD 2015d).

Mass emissions in Table 4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not single-handedly trigger a regional health impact. SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SoCAB. To achieve the health-based standards established by the EPA, SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined.

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hot spot analysis conducted for the attainment by SCAQMD for busiest intersections in Los Angeles during the peak morning and afternoon periods plan did not predict a violation of CO standards. [8] As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017).

LOCALIZED SIGNIFICANCE THRESHOLDS

SCAQMD developed LSTs for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at the project site (offsite mobile-source emissions are not included in the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS and are shown in Table 5.

[8] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

Table 5 SCAQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual NO_2 Standard (CAAQS)	0.03 ppm
24-Hour PM_{10} Standard – Construction (SCAQMD)[1]	10.4 µg/m^3
24-Hour $PM_{2.5}$ Standard – Construction (SCAQMD)[1]	10.4 µg/m^3
24-Hour PM_{10} Standard – Operation (SCAQMD)[1]	2.5 µg/m^3
24-Hour $PM_{2.5}$ Standard – Operation (SCAQMD)[1]	2.5 µg/m^3

Source: SCAQMD 2015b.
ppm – parts per million; µg/m^3 – micrograms per cubic meter
[1] Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, SCAQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated onsite that would trigger the levels shown in Table 5 for projects under 5-acres. These "screening-level" LSTs tables are the localized significance thresholds for all projects of five acres and less; however, it can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required to compare concentrations of air pollutants generated by the project to the localized concentrations shown in Table 5.

In accordance with SCAQMD's LST methodology, the screening-level construction LSTs are based on the acreage disturbed per day based on equipment use. The screening-level construction LSTs for the project site in SRA 12 are shown in Table 6.

Table 6 SCAQMD Screening-Level Construction Localized Significance Thresholds

	Threshold (lbs/day)			
Acreage Disturbed	Nitrogen Oxides (NO_X)[1]	Carbon Monoxide (CO)[1]	Coarse Particulates (PM_{10})[2]	Fine Particulates ($PM_{2.5}$)[2]
1.00 Acres Disturbed Per Day	46	231	4	3
1.88 Acres Disturbed Per Day	63	332	7	4
2.00 Acres Disturbed Per Day	65	346	7	4

Source: SCAQMD 2008b; SCAQMD 2011, Based on receptors in SRA 12.
[1] LSTs are based on sensitive receptors within 82 feet (25 meters).

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. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[9] carbon (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 (IPCC 2001).[10] 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, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-

[9] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop o rather than a primary cause of change.

[10] 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 2017b). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

- ***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 as alternatives, along with HFCs, 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, 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.

- ***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 (IPCC 2001; USEPA 2018b).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 7. The GWP is used to convert GHGs to CO_2-equivalence (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 Fourth Assessment Report (AR4) GWP values for CH_4, a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 250 MT of CO_2.[11]

Table 7 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

Table 7 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]
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: IPCC 1995; IPCC 2007.

Notes: The GWP values in the IPCC's Fifth Assessment Report (2013) reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, SCAQMD uses the AR4 GWP values to maintain consistency in statewide GHG emissions modeling. In addition, the 2017 Scoping Plan Update was based on the AR4 GWP values.

[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.

California's Greenhouse Gas Sources and Relative Contribution

In 2018, the statewide GHG emissions inventory was updated for 2000 to 2016 emissions using the GWPs in IPCC's AR4.[12] Based on these GWPs, California produced 429.4 $MMTCO_2e$ GHG emissions in 2016. California's transportation sector was the single largest generator of GHG emissions, producing 40.5 percent of the state's total emissions. Industrial sector emissions made up 23.4 percent, and electric power generation made up 16.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (12.0 percent), agriculture and forestry (7.9 percent) and other (solvents and chemicals at 0.2 percent), (CARB 2018b).

California's GHG emissions have followed a declining trend since 2007. In 2016, emissions from routine GHG emitting activities statewide were 429 $MMTCO_2e$, or 12 $MMTCO_2e$ lower than 2015 levels. This represents an overall decrease of 13 percent since peak levels in 2004 and 2 $MMTCO_2e$ below the 1990 level and the state's 2020 GHG target. During the 2000 to 2016 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 $MTCO_2e$ per capita to 10.8 $MTCO_2e$ per capita in 2016, a 23 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product (GDP)) is declining, representing a 38 percent decline since the 2001 peak, while the state's GDP has grown 41 percent during this period (CARB 2018c).

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

Regulatory Settings

REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

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 (USEPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies 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 project's GHG emissions inventory because they constitute the majority of GHG emissions and, per South Coast Air Quality Management District guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Report Rule for GHGs (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 MT or more of CO_2 per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy 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 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 deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017–2025 that will require a fleet average of 54.5 miles per gallon in 2025. However, the EPA is reexamining the 2017-2025 emissions standards.

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources also. However, the EPA is reviewing the Clean Power Plan under President Trump's Energy Independence Executive Order.

REGULATION OF GHG EMISSIONS ON A STATE LEVEL

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), Senate Bill 32 (SB 32) and Senate Bill 375 (SB 375).

Executive Order S-3-05

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

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

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32. 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-03-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. 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 (CARB 2008). 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 $MTCO_2e$ 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.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan was adopted at the May 22, 2014, board hearing. The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher at 431 $MMTCO_2e$ (CARB 2014).

As identified in the Update to the Scoping Plan, California is on track to meeting the goals of AB 32. However, the update 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 midterm 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 (CARB 2014). CARB identified that 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 (CARB 2014).

Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions in 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 as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017c).

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning, to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and TACs emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZEV buses and trucks;

- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing methane and hydroflurocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the State's long-term GHG reduction goals and identified local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the State's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)—consistent with the Scoping Plan and the state's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what would the GHG emissions look like if the State did nothing at all beyond the existing policies that are required and already in place to achieve the 2020 limit, as shown in Table 8. It includes the existing renewables requirements, advanced clean cars, the "10 percent" Low Carbon Fuel Standard (LCFS), and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in

2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 8 2017 Climate Change Scoping Plan Emissions Reductions Gap

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	**260**
Gap to 2030 Target	**60**

Source: CARB 2017c.

Table 9 provides estimated GHG emissions by sector, compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

Table 9 2017 Climate Change Scoping Plan Emissions Change by Sector

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to -4%
Residential and Commercial	44	38-40	-14% to -9%
Electric Power	108	30-53	-72% to -51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to -8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to -27%
Net Sink[1]	-7	TBD	TBD
Sub Total	431	294-339	-32% to -21%
Cap-and-Trade Program	NA	24-79	NA
Total	**431**	**260**	**-40%**

Source: CARB 2017c.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[1] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. The bill also establishes targets for reducing organic waste in

landfill. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Reduction Strategy," which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s despite the tripling of diesel fuel use (CARB 2017b). In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. SCAQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these char broilers by over 80 percent (CARB 2017b). Additionally, SCAQMD Rule 445 limits installation of new fireplaces in the SoCAB.

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan 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 (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 metropolitan planning organizations (MPOs). The Southern California Association of Governments (SCAG) is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010). The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per

capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs. As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 $MMTCO_2e$ in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the SCAG region are an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018b). CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018 are subject to these new targets.

SCAG's 2016-2040 RTP/SCS

SB 375 requires each MPO to prepare an SCS in their regional transportation plan. For the SCAG region, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016, and is an update to the 2012 RTP/SCS (SCAG 2016). In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

The 2016-2040 RTP/SCS projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB. It is projected that VMT per capita in the region for year 2040 would be reduced by 7.4 percent with implementation of the 2016-2040 RTP/SCS compared to a no-plan year 2040 scenario. Under the 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions 8 percent below 2005 levels by 2020, 18 percent by 2035, and 21 percent by 2040. The 18 percent reduction by 2035 over 2005 levels represents a 2 percent increase in reduction compared to the 2012 RTP/SCS projection. Overall, the SCS is meant to provide growth strategies that will achieve the aforementioned regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

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 was 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 (see also the discussion on the update to the Corporate Average Fuel Economy 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.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 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 standard 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.

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the 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 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. 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.

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law in 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.

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 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.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (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 June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017.

The 2016 Standards continues to improve upon the previous 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28 and 5 percent more energy efficient than the 2013 Standards, respectively (CEC 2015a). Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. While the 2016 standards do not achieve zero net energy, they do get very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California (CEC 2015b).

The 2019 standards move towards cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of 3 stories and less. Four key areas the 2019 standards will focus on include 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards while single-family homes will be 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

California Building 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 (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. 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.[13] The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2016. The 2016 CALGreen became effective on January 1, 2017.

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

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC 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.

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; Public Resources Code §§ 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.

Section 5.408 of the 2016 CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014 Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

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 CEC to consult with the DWR 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.

Thresholds of Significance

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.[14]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency (SCAQMD 2010):

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

[14] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, or 3,000 $MTCO_2e$ for mixed-use projects. These bright-line thresholds are based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

  The SCAQMD Working Group has identified an efficiency target for projects that exceed the screening threshold of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan level projects (e.g., program-level projects such as general plans) for the year 2020.[15] The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[16] If a proposed project's horizon year is beyond year 2020, the efficiency target would need to be adjusted based on the mid-term GHG reduction target of SB 32, which establishes a target of 40 percent below 1990 levels by 2030, and the long-term reduction goal of Executive Order S-03-05, which sets a goal of 80 percent below 1990 levels by 2050. For the purpose of this project, as the proposed school is anticipated to be built by 2024, SCAQMD's project-level thresholds of 3,000 $MTCO_2e$ and 4.3 $MTCO_2e$/year/SP are used. If projects exceed the bright line and per capita efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures.

POST-2020 EFFICIENCY THRESHOLDS

For projects that would be implemented beyond year 2020, the efficiency targets have been adjusted based on the GHG reduction targets of SB 32. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 as established under SB 32. While the State has identified additional GHG reduction goal for year 2050 (Executive Order S-03-05), because buildout of the proposed project would occur before 2030, the applicable threshold is based on the GHG reduction target for the buildout year of the proposed project (2024) and the legislative target under SB 32. As shown in Table 10, using the latest land use emissions inventory developed for the 2017 Scoping Plan, the estimated 2030 GHG project-level efficiency target would be 3.2 $MTCO_2e$ per service population per year ($MTCO_2e$/SP/yr). The estimated 2024 (project opening year) GHG project-level efficiency target would be 4.3 $MTCO_2e$/SP/yr).

[15] It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.
[16] SCAQMD took the 2020 statewide GHG reduction target for land use only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

Table 10 Post-2020 Project-Level GHG Reduction Targets

GHG Sector[1]	Scoping Plan Scenario GHG Emissions $MMTCO_2e$
Scoping Plan Emissions Target	
AB 32 Year 2020 Emissions Target[2]	287
SB 32 Year 2030 Emissions Target	191
Interpolated Year 2024 Emissions Target[3]	248
2024 Project-Level Efficiency Target	
2024 Population[4]	41,994,283
2024 Employment[5]	15,588,529
2024 Service Population	57,582,812
2024 Efficiency Target	**4.3 $MTCO_2e$/SP**
2030 Project-Level Efficiency Target	
2030 Population[4]	43,939,250
2030 Employment[5]	16,454,761
2030 Service Population	60,394,011
2030 Efficiency Target	**3.2 $MTCO_2e$/SP**

Sources:
[1] CARB 2017c.
[2] CARB 2007.
[3] Forecast based on year 2020 and year 2030 project-level emissions inventories.
[4] CDOF 2018.
[5] Caltrans 2017.

The proposed project has an anticipated buildout year beyond 2020. SCAQMD's bright-line threshold of 3,000 $MTCO_2e$ per year is used as screening criteria to determine if additional analysis of project-related emissions exceed the year 2024 efficiency metric of 4.3 $MTCO_2e$/SP/yr. If the project operation-phase emissions exceed the bright-line and efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures.

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CalEEMod Project Characteristics Inputs (Construction)

Name:	92nd Street Elementary School Modernization
Project Location:	9211 Grape Street, City of Los Angeles
County/Air Basin:	Los Angeles - (South Coast)
Climate Zone:	8
Land Use Setting:	Urban
Operational Year:	2024
Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	SCAQMD
SRA:	2 - South Coastal LA County

Total Project Site Area	6.03	acres
	262,598	sq. feet

Project Components	Phase	SQFT	Acres
Removal			
6 Portable Buildings	1 and 2	7,451	0.17
Demolition			
Classroom Building D			
Kindergarten Building 1			
Kindergarten Building 2	2	10,190	0.23
Asphalt demolition	2	92,347	2.12
Modernization [2]			
Administrative & Library Building	2	8,990	0.21
West Building	2	17,893	0.41
Cafeteria	2	10,993	0.25
Classroom Buildings	2	27,222	0.62
New Construction			
2-story Kindergarten Building 1		35,129	0.81
1-story Classroom Building 2	2		
15 Interim Portable Buildings	1	11,060	0.25
Site Upgrades			
Landscape, hardscape, and fencing	-	-	-
Restripe 24-space parking lot[1]	2	8,250	0.19
New asphalt playground	2	69,700	1.60
New parking lot	2	22,647	0.52

[1] *SQFT obtained by measuring aerial map on Google Earth.*

[2] *Modernization would not entail use of heavy construction equipment.*

CalEEMod Land Use Inputs

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet
Phase 1						
15 Interim Portable Buildings	Educational	Elementary School	11.06	1000 sq. feet	0.25	11,060
Total					0.25	
Phase 2						
New Kindergarten and classroom buildings	Educational	Elementary School	35.13	1000 sq. feet	0.81	35,129
New asphalt playground	Parking	Other Non-Asphalt Serfaces	69.70	1000 sq. feet	1.60	69,700
New parking lot	Parking	Parking Lot	22.65	1000 sq. feet	0.52	22,647
Total					2.93	

Demolition

Component	Amount to be Demolished (Tons)	Haul Truck Capacity (tons)	Haul Distance (miles)	Total Trip Ends	Trip Ends/ day	Duration (days)
Phase 2						
Asphalt Demo[1]	693	20	20	69	1	90
Building Demo[1]	469	20	20	47	3	90
Total	1,161			116		

[1] *Based on square footage provided by the applicant*

Haul

	Number	Total Trip Ends
Phase 1		
Interim Portables Added[1]	15	60
Phase 2		
Existing Portables Removed[2]	6	24
Interim Portables Removed[3]	15	60

[1] *Hauling trips during construction phase 1, protable building installation.*

[2] *Hauling trips during construction phase 2, demolition.*

[3] *Hauling trips during construction phase 2, portable building haul.*

Architectural Coating

Percentage of Buildings' Interior Painted:	100%	
Percentage of Buildings' Exterior Painted:	100%	
SCAQMD Rule 1113		
Interior Paint VOC content:	100	grams per litter
Exterior Paing VOC content:	100	grams per litter

Non-Residential Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
Phase 1					
No painting					
Phase 2					
New Construction	35,129	2	70,258	52,694	17,565
Modernization	65,098	2	130,196	97,647	32,549
			200,454	150,341	50,114
Striping (New parking lot + restriping of existing lot + asphalt playground)	100,597	6%	6,036	-	6,036
			6,036	-	6,036

[1] *CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.*

[2] *The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user. 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.*

Construction Mitigation

SCAQMD Rule 403

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

SCAQMD Rule 1186

	Clean Paved Road	9	% PM Reduction

Construction Activities and Schedule Assumptions (92nd Steet LAUSD)

Phase types and timeframe provided by applicant. CalEEMod details were used for information not provided.

Construction Activities		Construction Schedule		
Phase Name	Phase Type	Start Date	End Date	CalEEMod Days
Phase 1				
Site Preparation	Site Preparation	8/3/2020	8/7/2020	5
Utility Trenching	Trenching	8/10/2020	10/9/2020	45
Portable Installation	Building Construction	10/12/2020	10/23/2020	10
Phase 2				
Demolition	Demolition	5/3/2021	9/3/2021	90
Grading + Trenching	Grading	9/6/2021	11/5/2021	45
Building Construction	Building Construction	11/8/2021	7/1/2022	170
Architectural Coating	Architectural Coating	7/4/2022	8/1/2022	21
Portable Building Haul	Building Construction	8/2/2022	8/15/2022	10
Paving	Paving	8/16/2022	10/17/2022	45
Finishing/Landscaping	Tenching	10/18/2022	11/16/2022	22

CalEEMod Construction Off-Road Equipment Inputs

Based on CalEEMod defaults

General Construction Hours: 8 hours btwn 7:00 AM to 4:00 PM

	Construction Equipment Details			
Equipment	**# of Equipment**	**hp**	**hrs/ day**	**total trips**
Phase 1				
Site Preparation				
Graders	1	187	8	
Tractors/Loaders/Backhoes	1	97	8	
Worker Trips				5
Vendor Trips				0
Hauling Trips				0
Utility Trenching				
Excavators	1	97	8	
Tractors/Loaders/Backhoes	1	158	8	
Worker Trips				5
Vendor Trips				0
Hauling Trips				0
Portable Installation				
Cranes	1	231	4	
Worker Trips				5
Vendor Trips				2
Hauling Trips				60
Phase 2				
Demolition				
Concrete/Industrial Saws	1	81	8	
Rubber Tired Dozers	1	247	8	
Tractors/Loaders/Backhoes	3	97	8	
Worker Trips				13
Vendor Trips				0
Hauling Trips				140
Grading + Trenching				
Graders	1	187	8	
Rubber Tired Dozers	1	247	8	
Tractors/Loaders/Backhoes	2	97	7	
Worker Trips				10
Vendor Trips				0
Hauling Trips				0
Building Construction				
Cranes	1	231	8	
Forklifts	2	89	7	
Generator Sets	1	84	8	
Tractors/Loaders/Backhoes	1	97	6	
Welders	3	46	8	
Worker Trips				54
Vendor Trips				21
Hauling Trips				0
Architectural Coating				
Air Compressors	1	78	6	
Worker Trips				3
Vendor Trips				0
Hauling Trips				0
Portable Building Haul				

	Cranes	1	231	8	
	Worker Trips				54
	Vendor Trips				21
	Hauling Trips				60
Paving					
	Cement and Mortar Mixers	1	9	8	
	Pavers	1	130	8	
	Paving Equipment	1	132	8	
	Rollers	2	80	8	
	Tractors/Loaders/Backhoes	1	97	8	
	Worker Trips				15
	Vendor Trips				0
	Hauling Trips				0
Finishing/Landscaping					
	Skid Steer Loaders	1	65	8	
	Excavators	1	158	8	
	Paving Equipment	1	132	8	
	Worker Trips				8
	Vendor Trips				0
	Hauling Trips				0

[1] *Based on other projects with finishing/landscaping phase.*

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	92,347	0.333	30,782	45	1,385,205	692.60

[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
10,190	0.046	468.74	16	20.00	23	47

*CalEEMod User's Guide Version 2011.1, Appendix A

92nd Street Elementary School - Construction Phase 1 - Los Angeles-South Coast County, Annual

92nd Street Elementary School - Construction Phase 1

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	11.06	1000sqft	0.25	11,060.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Refer to CalEEMod inputs.

Off-road Equipment - Refert o CalEEMod inputs.

Off-road Equipment -

Off-road Equipment - Refer to CalEEMod inputs.

Trips and VMT - Refer to CalEEMod inputs.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403,1186.

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
tblGrading	AcresOfGrading	2.50	0.50
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

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					
2020	0.0172	0.1775	0.1804	3.1000e-004	2.4900e-003	9.1200e-003	0.0116	6.2000e-004	8.3900e-003	9.0200e-003	0.0000	27.5831	27.5831	7.8200e-003	0.0000	27.7786
Maximum	**0.0172**	**0.1775**	**0.1804**	**3.1000e-004**	**2.4900e-003**	**9.1200e-003**	**0.0116**	**6.2000e-004**	**8.3900e-003**	**9.0200e-003**	**0.0000**	**27.5831**	**27.5831**	**7.8200e-003**	**0.0000**	**27.7786**

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					
2020	0.0172	0.1775	0.1804	3.1000e-004	2.1700e-003	9.1200e-003	0.0113	5.7000e-004	8.3900e-003	8.9600e-003	0.0000	27.5830	27.5830	7.8200e-003	0.0000	27.7786

Maximum	**0.0172**	**0.1775**	**0.1804**	**3.1000e-004**	**2.1700e-003**	**9.1200e-003**	**0.0113**	**5.7000e-004**	**8.3900e-003**	**8.9600e-003**	**0.0000**	**27.5830**	**27.5830**	**7.8200e-003**	**0.0000**	**27.7786**

	ROG	NOx	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**	**12.85**	**0.00**	**2.76**	**8.06**	**0.00**	**0.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-3-2020**	**9-30-2020**	0.1094	0.1094
		Highest	0.1094	0.1094

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/3/2020	8/7/2020	5	5	
2	Trenching	Trenching	8/10/2020	10/9/2020	5	45	
3	Portable Installation	Building Construction	10/12/2020	10/23/2020	5	10	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Portable Installation	Cranes	1	4.00	231	0.29
Portable Installation	Forklifts	2	6.00	89	0.20
Portable Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Portable Installation	5	5.00	2.00	60.00	14.70	6.90	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 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0211	0.0102	2.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	2.1398	2.1398	6.9000e-004	0.0000	2.1571
Total	**1.7100e-003**	**0.0211**	**0.0102**	**2.0000e-005**	**2.7000e-004**	**8.4000e-004**	**1.1100e-003**	**3.0000e-005**	**7.7000e-004**	**8.0000e-004**	**0.0000**	**2.1398**	**2.1398**	**6.9000e-004**	**0.0000**	**2.1571**

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	6.0000e-005	5.0000e-005	5.1000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1277	0.1277	0.0000	0.0000	0.1278
Total	**6.0000e-005**	**5.0000e-005**	**5.1000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**0.0000**	**0.0000**	**0.1278**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0211	0.0102	2.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	2.1398	2.1398	6.9000e-004	0.0000	2.1571
Total	**1.7100e-003**	**0.0211**	**0.0102**	**2.0000e-005**	**1.1000e-004**	**8.4000e-004**	**9.5000e-004**	**1.0000e-005**	**7.7000e-004**	**7.8000e-004**	**0.0000**	**2.1398**	**2.1398**	**6.9000e-004**	**0.0000**	**2.1571**

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	6.0000e-005	5.0000e-005	5.1000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1277	0.1277	0.0000	0.0000	0.1278
Total	**6.0000e-005**	**5.0000e-005**	**5.1000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**0.0000**	**0.0000**	**0.1278**

3.3 Trenching - 2020

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	0.0102	0.1017	0.1248	1.9000e-004		5.6200e-003	5.6200e-003		5.1700e-003	5.1700e-003	0.0000	16.3474	16.3474	5.2900e-003	0.0000	16.4796
Total	**0.0102**	**0.1017**	**0.1248**	**1.9000e-004**		**5.6200e-003**	**5.6200e-003**		**5.1700e-003**	**5.1700e-003**	**0.0000**	**16.3474**	**16.3474**	**5.2900e-003**	**0.0000**	**16.4796**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	4.2000e-004	4.6300e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1490	1.1490	4.0000e-005	0.0000	1.1499

Total	**5.2000e-004**	**4.2000e-004**	**4.6300e-003**	**1.0000e-005**	**1.2300e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.1490**	**1.1490**	**4.0000e-005**	**0.0000**	**1.1499**

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	0.0102	0.1017	0.1248	1.9000e-004		5.6200e-003	5.6200e-003		5.1700e-003	5.1700e-003	0.0000	16.3474	16.3474	5.2900e-003	0.0000	16.4796
Total	**0.0102**	**0.1017**	**0.1248**	**1.9000e-004**		**5.6200e-003**	**5.6200e-003**		**5.1700e-003**	**5.1700e-003**	**0.0000**	**16.3474**	**16.3474**	**5.2900e-003**	**0.0000**	**16.4796**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	4.2000e-004	4.6300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1500e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.1490	1.1490	4.0000e-005	0.0000	1.1499
Total	**5.2000e-004**	**4.2000e-004**	**4.6300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1500e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.1490**	**1.1490**	**4.0000e-005**	**0.0000**	**1.1499**

3.4 Portable Installation - 2020

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	4.3100e-003	0.0443	0.0369	6.0000e-005		2.6100e-003	2.6100e-003		2.4000e-003	2.4000e-003	0.0000	5.0030	5.0030	1.6200e-003	0.0000	5.0435
Total	**4.3100e-003**	**0.0443**	**0.0369**	**6.0000e-005**		**2.6100e-003**	**2.6100e-003**		**2.4000e-003**	**2.4000e-003**	**0.0000**	**5.0030**	**5.0030**	**1.6200e-003**	**0.0000**	**5.0435**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.6000e-004	8.9100e-003	1.9600e-003	2.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	2.3124	2.3124	1.6000e-004	0.0000	2.3164
Vendor	4.0000e-005	1.0800e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2484	0.2484	2.0000e-005	0.0000	0.2488
Worker	1.2000e-004	9.0000e-005	1.0300e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2553	0.2553	1.0000e-005	0.0000	0.2555
Total	**4.2000e-004**	**0.0101**	**3.2800e-003**	**2.0000e-005**	**8.5000e-004**	**4.0000e-005**	**8.9000e-004**	**2.3000e-004**	**3.0000e-005**	**2.6000e-004**	**0.0000**	**2.8161**	**2.8161**	**1.9000e-004**	**0.0000**	**2.8207**

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	4.3100e-003	0.0443	0.0369	6.0000e-005		2.6100e-003	2.6100e-003		2.4000e-003	2.4000e-003	0.0000	5.0030	5.0030	1.6200e-003	0.0000	5.0435
Total	**4.3100e-003**	**0.0443**	**0.0369**	**6.0000e-005**		**2.6100e-003**	**2.6100e-003**		**2.4000e-003**	**2.4000e-003**	**0.0000**	**5.0030**	**5.0030**	**1.6200e-003**	**0.0000**	**5.0435**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.6000e-004	8.9100e-003	1.9600e-003	2.0000e-005	4.8000e-004	3.0000e-005	5.1000e-004	1.3000e-004	3.0000e-005	1.6000e-004	0.0000	2.3124	2.3124	1.6000e-004	0.0000	2.3164
Vendor	4.0000e-005	1.0800e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2484	0.2484	2.0000e-005	0.0000	0.2488
Worker	1.2000e-004	9.0000e-005	1.0300e-003	0.0000	2.5000e-004	0.0000	2.5000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2553	0.2553	1.0000e-005	0.0000	0.2555
Total	**4.2000e-004**	**0.0101**	**3.2800e-003**	**2.0000e-005**	**7.9000e-004**	**4.0000e-005**	**8.2000e-004**	**2.2000e-004**	**3.0000e-005**	**2.5000e-004**	**0.0000**	**2.8161**	**2.8161**	**1.9000e-004**	**0.0000**	**2.8207**

92nd Street Elementary School - Construction Phase 1

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	11.06	1000sqft	0.25	11,060.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Refer to CalEEMod inputs.

Off-road Equipment - Refert o CalEEMod inputs.

Off-road Equipment -

Off-road Equipment - Refer to CalEEMod inputs.

Trips and VMT - Refer to CalEEMod inputs.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403,1186.

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
tblGrading	AcresOfGrading	2.50	0.50
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.9443	10.8067	8.0444	0.0172	0.1736	0.5294	0.7030	0.0473	0.4872	0.5345	0.0000	1,730.6878	1,730.6878	0.3969	0.0000	1,740.6106
Maximum	**0.9443**	**10.8067**	**8.0444**	**0.0172**	**0.1736**	**0.5294**	**0.7030**	**0.0473**	**0.4872**	**0.5345**	**0.0000**	**1,730.6878**	**1,730.6878**	**0.3969**	**0.0000**	**1,740.6106**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.9443	10.8067	8.0444	0.0172	0.1613	0.5294	0.6906	0.0442	0.4872	0.5315	0.0000	1,730.6878	1,730.6878	0.3969	0.0000	1,740.6106

Maximum	**0.9443**	**10.8067**	**8.0444**	**0.0172**	**0.1613**	**0.5294**	**0.6906**	**0.0442**	**0.4872**	**0.5315**	**0.0000**	**1,730.6878**	**1,730.6878**	**0.3969**	**0.0000**	**1,740.6106**

	ROG	NOx	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**	**7.10**	**0.00**	**1.76**	**6.43**	**0.00**	**0.57**	**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	Site Preparation	Site Preparation	8/3/2020	8/7/2020	5	5	
2	Trenching	Trenching	8/10/2020	10/9/2020	5	45	
3	Portable Installation	Building Construction	10/12/2020	10/23/2020	5	10	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Portable Installation	Cranes	1	4.00	231	0.29
Portable Installation	Forklifts	2	6.00	89	0.20
Portable Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Portable Installation	5	5.00	2.00	60.00	14.70	6.90	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 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1061	0.0000	0.1061	0.0115	0.0000	0.0115			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085		943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.1061**	**0.3353**	**0.4414**	**0.0115**	**0.3085**	**0.3200**		**943.4872**	**943.4872**	**0.3051**		**951.1158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0230	0.0164	0.2189	5.9000e-004	0.0559	4.7000e-004	0.0564	0.0148	4.3000e-004	0.0153		58.8056	58.8056	1.8500e-003		58.8520
Total	**0.0230**	**0.0164**	**0.2189**	**5.9000e-004**	**0.0559**	**4.7000e-004**	**0.0564**	**0.0148**	**4.3000e-004**	**0.0153**		**58.8056**	**58.8056**	**1.8500e-003**		**58.8520**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0453	0.0000	0.0453	4.9000e-003	0.0000	4.9000e-003			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085	0.0000	943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.0453**	**0.3353**	**0.3807**	**4.9000e-003**	**0.3085**	**0.3134**	**0.0000**	**943.4872**	**943.4872**	**0.3051**		**951.1158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0230	0.0164	0.2189	5.9000e-004	0.0515	4.7000e-004	0.0520	0.0138	4.3000e-004	0.0142		58.8056	58.8056	1.8500e-003		58.8520
Total	**0.0230**	**0.0164**	**0.2189**	**5.9000e-004**	**0.0515**	**4.7000e-004**	**0.0520**	**0.0138**	**4.3000e-004**	**0.0142**		**58.8056**	**58.8056**	**1.8500e-003**		**58.8520**

3.3 Trenching - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4545	4.5178	5.5475	8.2700e-003		0.2500	0.2500		0.2300	0.2300		800.8869	800.8869	0.2590		807.3625
Total	**0.4545**	**4.5178**	**5.5475**	**8.2700e-003**		**0.2500**	**0.2500**		**0.2300**	**0.2300**		**800.8869**	**800.8869**	**0.2590**		**807.3625**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0230	0.0164	0.2189	5.9000e-004	0.0559	4.7000e-004	0.0564	0.0148	4.3000e-004	0.0153		58.8056	58.8056	1.8500e-003		58.8520
Total	**0.0230**	**0.0164**	**0.2189**	**5.9000e-004**	**0.0559**	**4.7000e-004**	**0.0564**	**0.0148**	**4.3000e-004**	**0.0153**		**58.8056**	**58.8056**	**1.8500e-003**		**58.8520**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4545	4.5178	5.5475	8.2700e-003		0.2500	0.2500		0.2300	0.2300	0.0000	800.8869	800.8869	0.2590		807.3625
Total	**0.4545**	**4.5178**	**5.5475**	**8.2700e-003**		**0.2500**	**0.2500**		**0.2300**	**0.2300**	**0.0000**	**800.8869**	**800.8869**	**0.2590**		**807.3625**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0230	0.0164	0.2189	5.9000e-004	0.0515	4.7000e-004	0.0520	0.0138	4.3000e-004	0.0142		58.8056	58.8056	1.8500e-003		58.8520
Total	**0.0230**	**0.0164**	**0.2189**	**5.9000e-004**	**0.0515**	**4.7000e-004**	**0.0520**	**0.0138**	**4.3000e-004**	**0.0142**		**58.8056**	**58.8056**	**1.8500e-003**		**58.8520**

3.4 Portable Installation - 2020

Unmitigated Construction On-Site

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

Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0524	1.7252	0.3823	4.7400e-003	0.1049	5.5100e-003	0.1104	0.0288	5.2700e-003	0.0340		513.4991	513.4991	0.0350		514.3729
Vendor	7.1100e-003	0.2127	0.0557	5.2000e-004	0.0128	1.0000e-003	0.0138	3.6900e-003	9.6000e-004	4.6400e-003		55.4049	55.4049	3.3800e-003		55.4895
Worker	0.0230	0.0164	0.2189	5.9000e-004	0.0559	4.7000e-004	0.0564	0.0148	4.3000e-004	0.0153		58.8056	58.8056	1.8500e-003		58.8520
Total	**0.0825**	**1.9544**	**0.6570**	**5.8500e-003**	**0.1736**	**6.9800e-003**	**0.1806**	**0.0473**	**6.6600e-003**	**0.0539**		**627.7097**	**627.7097**	**0.0402**		**628.7143**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0524	1.7252	0.3823	4.7400e-003	0.0978	5.5100e-003	0.1033	0.0270	5.2700e-003	0.0323		513.4991	513.4991	0.0350		514.3729
Vendor	7.1100e-003	0.2127	0.0557	5.2000e-004	0.0120	1.0000e-003	0.0130	3.4800e-003	9.6000e-004	4.4400e-003		55.4049	55.4049	3.3800e-003		55.4895
Worker	0.0230	0.0164	0.2189	5.9000e-004	0.0515	4.7000e-004	0.0520	0.0138	4.3000e-004	0.0142		58.8056	58.8056	1.8500e-003		58.8520
Total	**0.0825**	**1.9544**	**0.6570**	**5.8500e-003**	**0.1613**	**6.9800e-003**	**0.1682**	**0.0442**	**6.6600e-003**	**0.0509**		**627.7097**	**627.7097**	**0.0402**		**628.7143**

92nd Street Elementary School - Construction Phase 1 - Los Angeles-South Coast County, Winter

92nd Street Elementary School - Construction Phase 1

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	11.06	1000sqft	0.25	11,060.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Refer to CalEEMod inputs.

Off-road Equipment - Refert o CalEEMod inputs.

Off-road Equipment -

Off-road Equipment - Refer to CalEEMod inputs.

Trips and VMT - Refer to CalEEMod inputs.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403,1186.

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	10.00
tblConstructionPhase	NumDays	1.00	5.00
tblGrading	AcresOfGrading	2.50	0.50
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.9484	10.8307	8.0558	0.0171	0.1736	0.5295	0.7031	0.0473	0.4873	0.5346	0.0000	1,716.8954	1,716.8954	0.3983	0.0000	1,726.8528
Maximum	**0.9484**	**10.8307**	**8.0558**	**0.0171**	**0.1736**	**0.5295**	**0.7031**	**0.0473**	**0.4873**	**0.5346**	**0.0000**	**1,716.8954**	**1,716.8954**	**0.3983**	**0.0000**	**1,726.8528**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.9484	10.8307	8.0558	0.0171	0.1613	0.5295	0.6907	0.0442	0.4873	0.5316	0.0000	1,716.8954	1,716.8954	0.3983	0.0000	1,726.8528

Maximum	**0.9484**	**10.8307**	**8.0558**	**0.0171**	**0.1613**	**0.5295**	**0.6907**	**0.0442**	**0.4873**	**0.5316**	**0.0000**	**1,716.8954**	**1,716.8954**	**0.3983**	**0.0000**	**1,726.8528**

	ROG	NOx	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**	**7.10**	**0.00**	**1.76**	**6.43**	**0.00**	**0.57**	**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	Site Preparation	Site Preparation	8/3/2020	8/7/2020	5	5	
2	Trenching	Trenching	8/10/2020	10/9/2020	5	45	
3	Portable Installation	Building Construction	10/12/2020	10/23/2020	5	10	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Portable Installation	Cranes	1	4.00	231	0.29
Portable Installation	Forklifts	2	6.00	89	0.20
Portable Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Portable Installation	5	5.00	2.00	60.00	14.70	6.90	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 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1061	0.0000	0.1061	0.0115	0.0000	0.0115			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085		943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.1061**	**0.3353**	**0.4414**	**0.0115**	**0.3085**	**0.3200**		**943.4872**	**943.4872**	**0.3051**		**951.1158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0256	0.0181	0.2005	5.6000e-004	0.0559	4.7000e-004	0.0564	0.0148	4.3000e-004	0.0153		55.3710	55.3710	1.7500e-003		55.4147
Total	**0.0256**	**0.0181**	**0.2005**	**5.6000e-004**	**0.0559**	**4.7000e-004**	**0.0564**	**0.0148**	**4.3000e-004**	**0.0153**		**55.3710**	**55.3710**	**1.7500e-003**		**55.4147**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0453	0.0000	0.0453	4.9000e-003	0.0000	4.9000e-003			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085	0.0000	943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.0453**	**0.3353**	**0.3807**	**4.9000e-003**	**0.3085**	**0.3134**	**0.0000**	**943.4872**	**943.4872**	**0.3051**		**951.1158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0256	0.0181	0.2005	5.6000e-004	0.0515	4.7000e-004	0.0520	0.0138	4.3000e-004	0.0142		55.3710	55.3710	1.7500e-003		55.4147
Total	**0.0256**	**0.0181**	**0.2005**	**5.6000e-004**	**0.0515**	**4.7000e-004**	**0.0520**	**0.0138**	**4.3000e-004**	**0.0142**		**55.3710**	**55.3710**	**1.7500e-003**		**55.4147**

3.3 Trenching - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4545	4.5178	5.5475	8.2700e-003		0.2500	0.2500		0.2300	0.2300		800.8869	800.8869	0.2590		807.3625
Total	**0.4545**	**4.5178**	**5.5475**	**8.2700e-003**		**0.2500**	**0.2500**		**0.2300**	**0.2300**		**800.8869**	**800.8869**	**0.2590**		**807.3625**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0256	0.0181	0.2005	5.6000e-004	0.0559	4.7000e-004	0.0564	0.0148	4.3000e-004	0.0153		55.3710	55.3710	1.7500e-003		55.4147
Total	**0.0256**	**0.0181**	**0.2005**	**5.6000e-004**	**0.0559**	**4.7000e-004**	**0.0564**	**0.0148**	**4.3000e-004**	**0.0153**		**55.3710**	**55.3710**	**1.7500e-003**		**55.4147**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4545	4.5178	5.5475	8.2700e-003		0.2500	0.2500		0.2300	0.2300	0.0000	800.8869	800.8869	0.2590		807.3625
Total	**0.4545**	**4.5178**	**5.5475**	**8.2700e-003**		**0.2500**	**0.2500**		**0.2300**	**0.2300**	**0.0000**	**800.8869**	**800.8869**	**0.2590**		**807.3625**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0256	0.0181	0.2005	5.6000e-004	0.0515	4.7000e-004	0.0520	0.0138	4.3000e-004	0.0142		55.3710	55.3710	1.7500e-003		55.4147
Total	**0.0256**	**0.0181**	**0.2005**	**5.6000e-004**	**0.0515**	**4.7000e-004**	**0.0520**	**0.0138**	**4.3000e-004**	**0.0142**		**55.3710**	**55.3710**	**1.7500e-003**		**55.4147**

3.4 Portable Installation - 2020

Unmitigated Construction On-Site

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

Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0537	1.7476	0.4063	4.6600e-003	0.1049	5.5900e-003	0.1105	0.0288	5.3500e-003	0.0341		504.6564	504.6564	0.0362		505.5620
Vendor	7.4400e-003	0.2127	0.0615	5.0000e-004	0.0128	1.0200e-003	0.0138	3.6900e-003	9.7000e-004	4.6600e-003		53.8898	53.8898	3.6000e-003		53.9799
Worker	0.0256	0.0181	0.2005	5.6000e-004	0.0559	4.7000e-004	0.0564	0.0148	4.3000e-004	0.0153		55.3710	55.3710	1.7500e-003		55.4147
Total	**0.0867**	**1.9784**	**0.6683**	**5.7200e-003**	**0.1736**	**7.0800e-003**	**0.1807**	**0.0473**	**6.7500e-003**	**0.0540**		**613.9173**	**613.9173**	**0.0416**		**614.9566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0537	1.7476	0.4063	4.6600e-003	0.0978	5.5900e-003	0.1034	0.0270	5.3500e-003	0.0324		504.6564	504.6564	0.0362		505.5620
Vendor	7.4400e-003	0.2127	0.0615	5.0000e-004	0.0120	1.0200e-003	0.0130	3.4800e-003	9.7000e-004	4.4600e-003		53.8898	53.8898	3.6000e-003		53.9799
Worker	0.0256	0.0181	0.2005	5.6000e-004	0.0515	4.7000e-004	0.0520	0.0138	4.3000e-004	0.0142		55.3710	55.3710	1.7500e-003		55.4147
Total	**0.0867**	**1.9784**	**0.6683**	**5.7200e-003**	**0.1613**	**7.0800e-003**	**0.1683**	**0.0442**	**6.7500e-003**	**0.0510**		**613.9173**	**613.9173**	**0.0416**		**614.9566**

92nd Street Elementary School - Construction Phase 2 - Los Angeles-South Coast County, Annual

92nd Street Elementary School - Construction Phase 2

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	35.13	1000sqft	0.81	35,130.00	0
Other Asphalt Surfaces	69.70	1000sqft	1.60	69,700.00	0
Parking Lot	22.63	1000sqft	0.52	22,630.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Refer to CalEEMod inputs.

Construction Phase - Refer to CalEEMod inputs.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Refer to CalEEMod inputs.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - 140 demo hauling trips added. 60 portable building haul trips added.

Demolition -

Architectural Coating - Modernization added to non-residential interior and exterior area. Parking area based on CalEEMod inputs.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403, 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	17,565.00	50,114.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	52,695.00	150,341.00
tblArchitecturalCoating	ConstArea_Parking	5,540.00	6,036.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	220.00	170.00
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	NumDays	6.00	45.00
tblConstructionPhase	NumDays	10.00	45.00
tblGrading	AcresOfGrading	22.50	3.00
tblTripsAndVMT	HaulingTripNumber	115.00	140.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

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					
2021	0.1817	1.7289	1.2503	2.4200e-003	0.1741	0.0841	0.2582	0.0831	0.0786	0.1618	0.0000	211.4640	211.4640	0.0472	0.0000	212.6426
2022	0.6614	1.4545	1.5557	3.1600e-003	0.0571	0.0639	0.1210	0.0154	0.0608	0.0762	0.0000	273.2858	273.2858	0.0463	0.0000	274.4421
Maximum	**0.6614**	**1.7289**	**1.5557**	**3.1600e-003**	**0.1741**	**0.0841**	**0.2582**	**0.0831**	**0.0786**	**0.1618**	**0.0000**	**273.2858**	**273.2858**	**0.0472**	**0.0000**	**274.4421**

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					
2021	0.1817	1.7289	1.2503	2.4200e-003	0.0866	0.0841	0.1707	0.0389	0.0786	0.1175	0.0000	211.4637	211.4637	0.0472	0.0000	212.6424
2022	0.6614	1.4545	1.5557	3.1600e-003	0.0528	0.0639	0.1167	0.0143	0.0608	0.0751	0.0000	273.2856	273.2856	0.0463	0.0000	274.4419
Maximum	**0.6614**	**1.7289**	**1.5557**	**3.1600e-003**	**0.0866**	**0.0841**	**0.1707**	**0.0389**	**0.0786**	**0.1175**	**0.0000**	**273.2856**	**273.2856**	**0.0472**	**0.0000**	**274.4419**

	ROG	NOx	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**	**39.69**	**0.00**	**24.20**	**46.02**	**0.00**	**19.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-3-2021	8-2-2021	0.7299	0.7299
2	8-3-2021	11-2-2021	0.7120	0.7120
3	11-3-2021	2-2-2022	0.6434	0.6434
4	2-3-2022	5-2-2022	0.5989	0.5989
5	5-3-2022	8-2-2022	0.9000	0.9000
6	8-3-2022	9-30-2022	0.2670	0.2670
		Highest	0.9000	0.9000

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	9/3/2021	5	90	
2	Grading + Trenching	Grading	9/6/2021	11/5/2021	5	45	
3	Building Construction	Building Construction	11/8/2021	7/1/2022	5	170	
4	Architectural Coating	Architectural Coating	7/4/2022	8/1/2022	5	21	
5	Portable Building Haul	Building Construction	8/2/2022	8/15/2022	5	10	
6	Paving	Paving	8/16/2022	10/17/2022	5	45	
7	Finishing/Landscaping	Trenching	10/18/2022	11/16/2022	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.12

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 150,341; Non-Residential Outdoor: 50,114; Striped Parking Area:

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading + Trenching	Graders	1	8.00	187	0.41
Grading + Trenching	Rubber Tired Dozers	1	8.00	247	0.40
Grading + Trenching	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Portable Building Haul	Cranes	1	8.00	231	0.29
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Finishing/Landscaping	Excavators	1	8.00	158	0.38
Finishing/Landscaping	Paving Equipment	1	8.00	132	0.36
Finishing/Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Portable Building Haul	Forklifts	2	7.00	89	0.20
Portable Building Haul	Generator Sets	1	8.00	84	0.74
Portable Building Haul	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Portable Building Haul	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	140.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading + Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	54.00	21.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Portable Building Haul	8	54.00	21.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	3	8.00	0.00	0.00	14.70	6.90	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 - 2021

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					0.0124	0.0000	0.0124	1.8800e-003	0.0000	1.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0897	0.8864	0.6522	1.0800e-003		0.0468	0.0468		0.0437	0.0437	0.0000	94.8210	94.8210	0.0243	0.0000	95.4272
Total	**0.0897**	**0.8864**	**0.6522**	**1.0800e-003**	**0.0124**	**0.0468**	**0.0593**	**1.8800e-003**	**0.0437**	**0.0456**	**0.0000**	**94.8210**	**94.8210**	**0.0243**	**0.0000**	**95.4272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.9000e-004	0.0194	4.5200e-003	5.0000e-005	1.2000e-003	6.0000e-005	1.2600e-003	3.3000e-004	6.0000e-005	3.9000e-004	0.0000	5.3361	5.3361	3.7000e-004	0.0000	5.3453
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5200e-003	1.9600e-003	0.0221	6.0000e-005	6.4100e-003	5.0000e-005	6.4600e-003	1.7000e-003	5.0000e-005	1.7500e-003	0.0000	5.7852	5.7852	1.7000e-004	0.0000	5.7894
Total	**3.1100e-003**	**0.0213**	**0.0266**	**1.1000e-004**	**7.6100e-003**	**1.1000e-004**	**7.7200e-003**	**2.0300e-003**	**1.1000e-004**	**2.1400e-003**	**0.0000**	**11.1212**	**11.1212**	**5.4000e-004**	**0.0000**	**11.1348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3100e-003	0.0000	5.3100e-003	8.0000e-004	0.0000	8.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0897	0.8864	0.6522	1.0800e-003		0.0468	0.0468		0.0437	0.0437	0.0000	94.8209	94.8209	0.0243	0.0000	95.4271
Total	**0.0897**	**0.8864**	**0.6522**	**1.0800e-003**	**5.3100e-003**	**0.0468**	**0.0522**	**8.0000e-004**	**0.0437**	**0.0445**	**0.0000**	**94.8209**	**94.8209**	**0.0243**	**0.0000**	**95.4271**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.9000e-004	0.0194	4.5200e-003	5.0000e-005	1.1200e-003	6.0000e-005	1.1800e-003	3.1000e-004	6.0000e-005	3.7000e-004	0.0000	5.3361	5.3361	3.7000e-004	0.0000	5.3453
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5200e-003	1.9600e-003	0.0221	6.0000e-005	5.9100e-003	5.0000e-005	5.9600e-003	1.5800e-003	5.0000e-005	1.6300e-003	0.0000	5.7852	5.7852	1.7000e-004	0.0000	5.7894
Total	**3.1100e-003**	**0.0213**	**0.0266**	**1.1000e-004**	**7.0300e-003**	**1.1000e-004**	**7.1400e-003**	**1.8900e-003**	**1.1000e-004**	**2.0000e-003**	**0.0000**	**11.1212**	**11.1212**	**5.4000e-004**	**0.0000**	**11.1348**

3.3 Grading + Trenching - 2021

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					0.1371	0.0000	0.1371	0.0747	0.0000	0.0747	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4548	0.2196	4.6000e-004		0.0206	0.0206		0.0190	0.0190	0.0000	40.7337	40.7337	0.0132	0.0000	41.0631
Total	**0.0411**	**0.4548**	**0.2196**	**4.6000e-004**	**0.1371**	**0.0206**	**0.1577**	**0.0747**	**0.0190**	**0.0936**	**0.0000**	**40.7337**	**40.7337**	**0.0132**	**0.0000**	**41.0631**

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	9.7000e-004	7.5000e-004	8.5100e-003	2.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2251	2.2251	7.0000e-005	0.0000	2.2267
Total	**9.7000e-004**	**7.5000e-004**	**8.5100e-003**	**2.0000e-005**	**2.4700e-003**	**2.0000e-005**	**2.4900e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2251**	**2.2251**	**7.0000e-005**	**0.0000**	**2.2267**

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					0.0586	0.0000	0.0586	0.0319	0.0000	0.0319	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.4548	0.2196	4.6000e-004		0.0206	0.0206		0.0190	0.0190	0.0000	40.7337	40.7337	0.0132	0.0000	41.0630
Total	**0.0411**	**0.4548**	**0.2196**	**4.6000e-004**	**0.0586**	**0.0206**	**0.0792**	**0.0319**	**0.0190**	**0.0509**	**0.0000**	**40.7337**	**40.7337**	**0.0132**	**0.0000**	**41.0630**

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	9.7000e-004	7.5000e-004	8.5100e-003	2.0000e-005	2.2700e-003	2.0000e-005	2.2900e-003	6.1000e-004	2.0000e-005	6.3000e-004	0.0000	2.2251	2.2251	7.0000e-005	0.0000	2.2267
Total	**9.7000e-004**	**7.5000e-004**	**8.5100e-003**	**2.0000e-005**	**2.2700e-003**	**2.0000e-005**	**2.2900e-003**	**6.1000e-004**	**2.0000e-005**	**6.3000e-004**	**0.0000**	**2.2251**	**2.2251**	**7.0000e-005**	**0.0000**	**2.2267**

3.4 Building Construction - 2021

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	0.0409	0.3206	0.2913	5.0000e-004		0.0164	0.0164		0.0157	0.0157	0.0000	41.5298	41.5298	8.1700e-003	0.0000	41.7340
Total	**0.0409**	**0.3206**	**0.2913**	**5.0000e-004**		**0.0164**	**0.0164**		**0.0157**	**0.0157**	**0.0000**	**41.5298**	**41.5298**	**8.1700e-003**	**0.0000**	**41.7340**

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	1.3000e-003	0.0415	0.0112	1.1000e-004	2.6500e-003	8.0000e-005	2.7300e-003	7.6000e-004	8.0000e-005	8.4000e-004	0.0000	10.3529	10.3529	6.4000e-004	0.0000	10.3687
Worker	4.6500e-003	3.6200e-003	0.0408	1.2000e-004	0.0118	1.0000e-004	0.0119	3.1400e-003	9.0000e-005	3.2300e-003	0.0000	10.6803	10.6803	3.1000e-004	0.0000	10.6882
Total	**5.9500e-003**	**0.0451**	**0.0521**	**2.3000e-004**	**0.0145**	**1.8000e-004**	**0.0147**	**3.9000e-003**	**1.7000e-004**	**4.0700e-003**	**0.0000**	**21.0332**	**21.0332**	**9.5000e-004**	**0.0000**	**21.0569**

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	0.0409	0.3206	0.2913	5.0000e-004		0.0164	0.0164		0.0157	0.0157	0.0000	41.5297	41.5297	8.1700e-003	0.0000	41.7340
Total	**0.0409**	**0.3206**	**0.2913**	**5.0000e-004**		**0.0164**	**0.0164**		**0.0157**	**0.0157**	**0.0000**	**41.5297**	**41.5297**	**8.1700e-003**	**0.0000**	**41.7340**

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	1.3000e-003	0.0415	0.0112	1.1000e-004	2.4800e-003	8.0000e-005	2.5600e-003	7.2000e-004	8.0000e-005	8.0000e-004	0.0000	10.3529	10.3529	6.4000e-004	0.0000	10.3687
Worker	4.6500e-003	3.6200e-003	0.0408	1.2000e-004	0.0109	1.0000e-004	0.0110	2.9200e-003	9.0000e-005	3.0100e-003	0.0000	10.6803	10.6803	3.1000e-004	0.0000	10.6882

Total	**5.9500e-003**	**0.0451**	**0.0521**	**2.3000e-004**	**0.0134**	**1.8000e-004**	**0.0136**	**3.6400e-003**	**1.7000e-004**	**3.8100e-003**	**0.0000**	**21.0332**	**21.0332**	**9.5000e-004**	**0.0000**	**21.0569**

3.4 Building Construction - 2022

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	0.1206	0.9493	0.9330	1.6300e-003		0.0456	0.0456		0.0438	0.0438	0.0000	134.9921	134.9921	0.0260	0.0000	135.6432
Total	**0.1206**	**0.9493**	**0.9330**	**1.6300e-003**		**0.0456**	**0.0456**		**0.0438**	**0.0438**	**0.0000**	**134.9921**	**134.9921**	**0.0260**	**0.0000**	**135.6432**

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	3.9800e-003	0.1280	0.0346	3.4000e-004	8.6000e-003	2.4000e-004	8.8400e-003	2.4800e-003	2.3000e-004	2.7100e-003	0.0000	33.3513	33.3513	1.9900e-003	0.0000	33.4011
Worker	0.0142	0.0106	0.1223	3.7000e-004	0.0385	3.1000e-004	0.0388	0.0102	2.8000e-004	0.0105	0.0000	33.4908	33.4908	9.2000e-004	0.0000	33.5139
Total	**0.0181**	**0.1386**	**0.1569**	**7.1000e-004**	**0.0471**	**5.5000e-004**	**0.0476**	**0.0127**	**5.1000e-004**	**0.0132**	**0.0000**	**66.8421**	**66.8421**	**2.9100e-003**	**0.0000**	**66.9149**

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	0.1206	0.9493	0.9330	1.6300e-003		0.0456	0.0456		0.0438	0.0438	0.0000	134.9919	134.9919	0.0260	0.0000	135.6430
Total	**0.1206**	**0.9493**	**0.9330**	**1.6300e-003**		**0.0456**	**0.0456**		**0.0438**	**0.0438**	**0.0000**	**134.9919**	**134.9919**	**0.0260**	**0.0000**	**135.6430**

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	3.9800e-003	0.1280	0.0346	3.4000e-004	8.0500e-003	2.4000e-004	8.2900e-003	2.3500e-003	2.3000e-004	2.5800e-003	0.0000	33.3513	33.3513	1.9900e-003	0.0000	33.4011
Worker	0.0142	0.0106	0.1223	3.7000e-004	0.0355	3.1000e-004	0.0358	9.4800e-003	2.8000e-004	9.7600e-003	0.0000	33.4908	33.4908	9.2000e-004	0.0000	33.5139
Total	**0.0181**	**0.1386**	**0.1569**	**7.1000e-004**	**0.0435**	**5.5000e-004**	**0.0441**	**0.0118**	**5.1000e-004**	**0.0123**	**0.0000**	**66.8421**	**66.8421**	**2.9100e-003**	**0.0000**	**66.9149**

3.5 Architectural Coating - 2022

Unmitigated Construction On-Site

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

Archit. Coating	0.4785					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1500e-003	0.0148	0.0190	3.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	2.6809	2.6809	1.7000e-004	0.0000	2.6853
Total	**0.4807**	**0.0148**	**0.0190**	**3.0000e-005**		**8.6000e-004**	**8.6000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**2.6809**	**2.6809**	**1.7000e-004**	**0.0000**	**2.6853**

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	4.7000e-004	3.5000e-004	4.0200e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.1021	1.1021	3.0000e-005	0.0000	1.1028
Total	**4.7000e-004**	**3.5000e-004**	**4.0200e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2800e-003**	**3.4000e-004**	**1.0000e-005**	**3.5000e-004**	**0.0000**	**1.1021**	**1.1021**	**3.0000e-005**	**0.0000**	**1.1028**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4785					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1500e-003	0.0148	0.0190	3.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	2.6809	2.6809	1.7000e-004	0.0000	2.6853
Total	**0.4807**	**0.0148**	**0.0190**	**3.0000e-005**		**8.6000e-004**	**8.6000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**2.6809**	**2.6809**	**1.7000e-004**	**0.0000**	**2.6853**

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	4.7000e-004	3.5000e-004	4.0200e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1021	1.1021	3.0000e-005	0.0000	1.1028
Total	**4.7000e-004**	**3.5000e-004**	**4.0200e-003**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1021**	**1.1021**	**3.0000e-005**	**0.0000**	**1.1028**

3.6 Portable Building Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2800e-003	0.0730	0.0718	1.3000e-004		3.5100e-003	3.5100e-003		3.3700e-003	3.3700e-003	0.0000	10.3840	10.3840	2.0000e-003	0.0000	10.4341
Total	**9.2800e-003**	**0.0730**	**0.0718**	**1.3000e-004**		**3.5100e-003**	**3.5100e-003**		**3.3700e-003**	**3.3700e-003**	**0.0000**	**10.3840**	**10.3840**	**2.0000e-003**	**0.0000**	**10.4341**

Unmitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	2.4000e-004	7.7100e-003	1.9100e-003	2.0000e-005	5.2000e-004	2.0000e-005	5.4000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	2.2597	2.2597	1.6000e-004	0.0000	2.2636
Vendor	3.1000e-004	9.8400e-003	2.6600e-003	3.0000e-005	6.6000e-004	2.0000e-005	6.8000e-004	1.9000e-004	2.0000e-005	2.1000e-004	0.0000	2.5655	2.5655	1.5000e-004	0.0000	2.5693
Worker	1.0900e-003	8.2000e-004	9.4100e-003	3.0000e-005	2.9600e-003	2.0000e-005	2.9800e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.5762	2.5762	7.0000e-005	0.0000	2.5780
Total	**1.6400e-003**	**0.0184**	**0.0140**	**8.0000e-005**	**4.1400e-003**	**6.0000e-005**	**4.2000e-003**	**1.1200e-003**	**6.0000e-005**	**1.1800e-003**	**0.0000**	**7.4014**	**7.4014**	**3.8000e-004**	**0.0000**	**7.4109**

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	9.2800e-003	0.0730	0.0718	1.3000e-004		3.5100e-003	3.5100e-003		3.3700e-003	3.3700e-003	0.0000	10.3840	10.3840	2.0000e-003	0.0000	10.4341
Total	**9.2800e-003**	**0.0730**	**0.0718**	**1.3000e-004**		**3.5100e-003**	**3.5100e-003**		**3.3700e-003**	**3.3700e-003**	**0.0000**	**10.3840**	**10.3840**	**2.0000e-003**	**0.0000**	**10.4341**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4000e-004	7.7100e-003	1.9100e-003	2.0000e-005	4.8000e-004	2.0000e-005	5.0000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	2.2597	2.2597	1.6000e-004	0.0000	2.2636
Vendor	3.1000e-004	9.8400e-003	2.6600e-003	3.0000e-005	6.2000e-004	2.0000e-005	6.4000e-004	1.8000e-004	2.0000e-005	2.0000e-004	0.0000	2.5655	2.5655	1.5000e-004	0.0000	2.5693
Worker	1.0900e-003	8.2000e-004	9.4100e-003	3.0000e-005	2.7300e-003	2.0000e-005	2.7500e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.5762	2.5762	7.0000e-005	0.0000	2.5780

Total	**1.6400e-003**	**0.0184**	**0.0140**	**8.0000e-005**	**3.8300e-003**	**6.0000e-005**	**3.8900e-003**	**1.0400e-003**	**6.0000e-005**	**1.1000e-003**	**0.0000**	**7.4014**	**7.4014**	**3.8000e-004**	**0.0000**	**7.4109**

3.7 Paving - 2022

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	0.0212	0.2100	0.2632	4.0000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	34.8976	34.8976	0.0111	0.0000	35.1741
Paving	2.7800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0240**	**0.2100**	**0.2632**	**4.0000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**34.8976**	**34.8976**	**0.0111**	**0.0000**	**35.1741**

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	1.3600e-003	1.0200e-003	0.0118	4.0000e-005	3.7000e-003	3.0000e-005	3.7300e-003	9.8000e-004	3.0000e-005	1.0100e-003	0.0000	3.2203	3.2203	9.0000e-005	0.0000	3.2225
Total	**1.3600e-003**	**1.0200e-003**	**0.0118**	**4.0000e-005**	**3.7000e-003**	**3.0000e-005**	**3.7300e-003**	**9.8000e-004**	**3.0000e-005**	**1.0100e-003**	**0.0000**	**3.2203**	**3.2203**	**9.0000e-005**	**0.0000**	**3.2225**

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	0.0212	0.2100	0.2632	4.0000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	34.8976	34.8976	0.0111	0.0000	35.1741
Paving	2.7800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0240**	**0.2100**	**0.2632**	**4.0000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**34.8976**	**34.8976**	**0.0111**	**0.0000**	**35.1741**

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	1.3600e-003	1.0200e-003	0.0118	4.0000e-005	3.4100e-003	3.0000e-005	3.4400e-003	9.1000e-004	3.0000e-005	9.4000e-004	0.0000	3.2203	3.2203	9.0000e-005	0.0000	3.2225
Total	**1.3600e-003**	**1.0200e-003**	**0.0118**	**4.0000e-005**	**3.4100e-003**	**3.0000e-005**	**3.4400e-003**	**9.1000e-004**	**3.0000e-005**	**9.4000e-004**	**0.0000**	**3.2203**	**3.2203**	**9.0000e-005**	**0.0000**	**3.2225**

3.8 Finishing/Landscaping - 2022

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	4.9500e-003	0.0489	0.0791	1.2000e-004		2.2600e-003	2.2600e-003		2.0800e-003	2.0800e-003	0.0000	10.9258	10.9258	3.5300e-003	0.0000	11.0141
Total	**4.9500e-003**	**0.0489**	**0.0791**	**1.2000e-004**		**2.2600e-003**	**2.2600e-003**		**2.0800e-003**	**2.0800e-003**	**0.0000**	**10.9258**	**10.9258**	**3.5300e-003**	**0.0000**	**11.0141**

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	3.6000e-004	2.7000e-004	3.0700e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.6000e-004	1.0000e-005	2.6000e-004	0.0000	0.8397	0.8397	2.0000e-005	0.0000	0.8402
Total	**3.6000e-004**	**2.7000e-004**	**3.0700e-003**	**1.0000e-005**	**9.6000e-004**	**1.0000e-005**	**9.7000e-004**	**2.6000e-004**	**1.0000e-005**	**2.6000e-004**	**0.0000**	**0.8397**	**0.8397**	**2.0000e-005**	**0.0000**	**0.8402**

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	4.9500e-003	0.0489	0.0791	1.2000e-004		2.2600e-003	2.2600e-003		2.0800e-003	2.0800e-003	0.0000	10.9258	10.9258	3.5300e-003	0.0000	11.0141
Total	**4.9500e-003**	**0.0489**	**0.0791**	**1.2000e-004**		**2.2600e-003**	**2.2600e-003**		**2.0800e-003**	**2.0800e-003**	**0.0000**	**10.9258**	**10.9258**	**3.5300e-003**	**0.0000**	**11.0141**

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	3.6000e-004	2.7000e-004	3.0700e-003	1.0000e-005	8.9000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.8397	0.8397	2.0000e-005	0.0000	0.8402
Total	**3.6000e-004**	**2.7000e-004**	**3.0700e-003**	**1.0000e-005**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.8397**	**0.8397**	**2.0000e-005**	**0.0000**	**0.8402**

92nd Street Elementary School - Construction Phase 2 - Los Angeles-South Coast County, Summer

92nd Street Elementary School - Construction Phase 2

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	35.13	1000sqft	0.81	35,130.00	0
Other Asphalt Surfaces	69.70	1000sqft	1.60	69,700.00	0
Parking Lot	22.63	1000sqft	0.52	22,630.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Refer to CalEEMod inputs.

Construction Phase - Refer to CalEEMod inputs.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Refer to CalEEMod inputs.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - 140 demo hauling trips added. 60 portable building haul trips added.

Demolition -

Architectural Coating - Modernization added to non-residential interior and exterior area. Parking area based on CalEEMod inputs.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403, 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	17,565.00	50,114.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	52,695.00	150,341.00
tblArchitecturalCoating	ConstArea_Parking	5,540.00	6,036.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	220.00	170.00
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	NumDays	6.00	45.00
tblConstructionPhase	NumDays	10.00	45.00
tblGrading	AcresOfGrading	22.50	3.00
tblTripsAndVMT	HaulingTripNumber	115.00	140.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2021	2.3404	20.2430	17.2709	0.0366	6.2046	1.0434	7.1212	3.3475	0.9738	4.1908	0.0000	3,481.1206	3,481.1206	0.6488	0.0000	3,493.6818
2022	45.8242	18.1818	17.2378	0.0409	0.8430	0.7149	1.5578	0.2276	0.6850	0.9126	0.0000	3,956.6673	3,956.6673	0.5464	0.0000	3,969.7880
Maximum	**45.8242**	**20.2430**	**17.2709**	**0.0409**	**6.2046**	**1.0434**	**7.1212**	**3.3475**	**0.9738**	**4.1908**	**0.0000**	**3,956.6673**	**3,956.6673**	**0.6488**	**0.0000**	**3,969.7880**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.3404	20.2430	17.2709	0.0366	2.7077	1.0434	3.6244	1.4459	0.9738	2.2892	0.0000	3,481.1206	3,481.1206	0.6488	0.0000	3,493.6818
2022	45.8242	18.1818	17.2378	0.0409	0.7800	0.7149	1.4948	0.2121	0.6850	0.8971	0.0000	3,956.6673	3,956.6673	0.5464	0.0000	3,969.7880
Maximum	**45.8242**	**20.2430**	**17.2709**	**0.0409**	**2.7077**	**1.0434**	**3.6244**	**1.4459**	**0.9738**	**2.2892**	**0.0000**	**3,956.6673**	**3,956.6673**	**0.6488**	**0.0000**	**3,969.7880**

	ROG	NOx	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**	**50.51**	**0.00**	**41.02**	**53.62**	**0.00**	**37.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	9/3/2021	5	90	
2	Grading + Trenching	Grading	9/6/2021	11/5/2021	5	45	
3	Building Construction	Building Construction	11/8/2021	7/1/2022	5	170	
4	Architectural Coating	Architectural Coating	7/4/2022	8/1/2022	5	21	

5	Portable Building Haul	Building Construction	8/2/2022	8/15/2022	5	10	
6	Paving	Paving	8/16/2022	10/17/2022	5	45	
7	Finishing/Landscaping	Trenching	10/18/2022	11/16/2022	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.12

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 150,341; Non-Residential Outdoor: 50,114; Striped Parking Area:

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading + Trenching	Graders	1	8.00	187	0.41
Grading + Trenching	Rubber Tired Dozers	1	8.00	247	0.40
Grading + Trenching	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Portable Building Haul	Cranes	1	8.00	231	0.29
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Finishing/Landscaping	Excavators	1	8.00	158	0.38

Finishing/Landscaping	Paving Equipment	1	8.00	132	0.36
Finishing/Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Portable Building Haul	Forklifts	2	7.00	89	0.20
Portable Building Haul	Generator Sets	1	8.00	84	0.74
Portable Building Haul	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Portable Building Haul	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	140.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading + Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	54.00	21.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Portable Building Haul	8	54.00	21.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	3	8.00	0.00	0.00	14.70	6.90	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 - 2021

Unmitigated Construction On-Site

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

Category	lb/day										lb/day					
Fugitive Dust					0.2761	0.0000	0.2761	0.0418	0.0000	0.0418			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.2761**	**1.0409**	**1.3170**	**0.0418**	**0.9715**	**1.0133**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0130	0.4173	0.0978	1.2100e-003	0.0272	1.2800e-003	0.0285	7.4600e-003	1.2300e-003	8.6800e-003		131.6694	131.6694	8.9400e-003		131.8928
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0557	0.0383	0.5236	1.4900e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396		148.0401	148.0401	4.3600e-003		148.1491
Total	**0.0687**	**0.4556**	**0.6215**	**2.7000e-003**	**0.1725**	**2.4500e-003**	**0.1750**	**0.0460**	**2.3100e-003**	**0.0483**		**279.7095**	**279.7095**	**0.0133**		**280.0419**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1180	0.0000	0.1180	0.0179	0.0000	0.0179			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658

Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.1180**	**1.0409**	**1.1589**	**0.0179**	**0.9715**	**0.9893**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0130	0.4173	0.0978	1.2100e-003	0.0254	1.2800e-003	0.0266	7.0000e-003	1.2300e-003	8.2300e-003		131.6694	131.6694	8.9400e-003		131.8928
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0557	0.0383	0.5236	1.4900e-003	0.1339	1.1700e-003	0.1351	0.0358	1.0800e-003	0.0368		148.0401	148.0401	4.3600e-003		148.1491
Total	**0.0687**	**0.4556**	**0.6215**	**2.7000e-003**	**0.1593**	**2.4500e-003**	**0.1617**	**0.0428**	**2.3100e-003**	**0.0451**		**279.7095**	**279.7095**	**0.0133**		**280.0419**

3.3 Grading + Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0928	0.0000	6.0928	3.3179	0.0000	3.3179			0.0000			0.0000
Off-Road	1.8271	20.2135	9.7604	0.0206		0.9158	0.9158		0.8425	0.8425		1,995.6114	1,995.6114	0.6454		2,011.7470
Total	**1.8271**	**20.2135**	**9.7604**	**0.0206**	**6.0928**	**0.9158**	**7.0085**	**3.3179**	**0.8425**	**4.1604**		**1,995.6114**	**1,995.6114**	**0.6454**		**2,011.7470**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		113.8770	113.8770	3.3600e-003		113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**		**113.8770**	**113.8770**	**3.3600e-003**		**113.9609**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6047	0.0000	2.6047	1.4184	0.0000	1.4184			0.0000			0.0000
Off-Road	1.8271	20.2135	9.7604	0.0206		0.9158	0.9158		0.8425	0.8425	0.0000	1,995.6114	1,995.6114	0.6454		2,011.7470
Total	**1.8271**	**20.2135**	**9.7604**	**0.0206**	**2.6047**	**0.9158**	**3.5204**	**1.4184**	**0.8425**	**2.2609**	**0.0000**	**1,995.6114**	**1,995.6114**	**0.6454**		**2,011.7470**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0429	0.0295	0.4028	1.1400e-003	0.1030	9.0000e-004	0.1039	0.0275	8.3000e-004	0.0283		113.8770	113.8770	3.3600e-003		113.9609
Total	**0.0429**	**0.0295**	**0.4028**	**1.1400e-003**	**0.1030**	**9.0000e-004**	**0.1039**	**0.0275**	**8.3000e-004**	**0.0283**		**113.8770**	**113.8770**	**3.3600e-003**		**113.9609**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831		2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**		**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0638	2.0389	0.5330	5.4000e-003	0.1344	4.1700e-003	0.1386	0.0387	3.9900e-003	0.0427		577.2493	577.2493	0.0340		578.0995
Worker	0.2315	0.1591	2.1750	6.1700e-003	0.6036	4.8800e-003	0.6085	0.1601	4.4900e-003	0.1646		614.9357	614.9357	0.0181		615.3887
Total	**0.2953**	**2.1980**	**2.7080**	**0.0116**	**0.7380**	**9.0500e-003**	**0.7471**	**0.1988**	**8.4800e-003**	**0.2073**		**1,192.1850**	**1,192.1850**	**0.0521**		**1,193.4882**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831	0.0000	2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**	**0.0000**	**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0638	2.0389	0.5330	5.4000e-003	0.1258	4.1700e-003	0.1300	0.0366	3.9900e-003	0.0406		577.2493	577.2493	0.0340		578.0995
Worker	0.2315	0.1591	2.1750	6.1700e-003	0.5564	4.8800e-003	0.5612	0.1485	4.4900e-003	0.1530		614.9357	614.9357	0.0181		615.3887
Total	**0.2953**	**2.1980**	**2.7080**	**0.0116**	**0.6822**	**9.0500e-003**	**0.6912**	**0.1851**	**8.4800e-003**	**0.1936**		**1,192.1850**	**1,192.1850**	**0.0521**		**1,193.4882**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731		2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**		**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0599	1.9389	0.5043	5.3500e-003	0.1345	3.6400e-003	0.1381	0.0387	3.4900e-003	0.0422		572.2204	572.2204	0.0328		573.0413
Worker	0.2168	0.1437	2.0067	5.9500e-003	0.6036	4.7200e-003	0.6083	0.1601	4.3500e-003	0.1644		593.3047	593.3047	0.0164		593.7140
Total	**0.2767**	**2.0827**	**2.5110**	**0.0113**	**0.7380**	**8.3600e-003**	**0.7464**	**0.1988**	**7.8400e-003**	**0.2066**		**1,165.5250**	**1,165.5250**	**0.0492**		**1,166.7553**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731	0.0000	2,289.2813	2,289.2813	0.4417		2,300.3230

Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**	**0.0000**	**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0599	1.9389	0.5043	5.3500e-003	0.1258	3.6400e-003	0.1295	0.0366	3.4900e-003	0.0401		572.2204	572.2204	0.0328		573.0413
Worker	0.2168	0.1437	2.0067	5.9500e-003	0.5564	4.7200e-003	0.5611	0.1485	4.3500e-003	0.1528		593.3047	593.3047	0.0164		593.7140
Total	**0.2767**	**2.0827**	**2.5110**	**0.0113**	**0.6822**	**8.3600e-003**	**0.6906**	**0.1851**	**7.8400e-003**	**0.1929**		**1,165.5250**	**1,165.5250**	**0.0492**		**1,166.7553**

3.5 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5755					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**45.7801**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0442	0.0293	0.4088	1.2100e-003	0.1230	9.6000e-004	0.1239	0.0326	8.9000e-004	0.0335		120.8584	120.8584	3.3400e-003		120.9418
Total	**0.0442**	**0.0293**	**0.4088**	**1.2100e-003**	**0.1230**	**9.6000e-004**	**0.1239**	**0.0326**	**8.9000e-004**	**0.0335**		**120.8584**	**120.8584**	**3.3400e-003**		**120.9418**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5755					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**45.7801**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0442	0.0293	0.4088	1.2100e-003	0.1133	9.6000e-004	0.1143	0.0303	8.9000e-004	0.0311		120.8584	120.8584	3.3400e-003		120.9418
Total	**0.0442**	**0.0293**	**0.4088**	**1.2100e-003**	**0.1133**	**9.6000e-004**	**0.1143**	**0.0303**	**8.9000e-004**	**0.0311**		**120.8584**	**120.8584**	**3.3400e-003**		**120.9418**

3.6 Portable Building Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731		2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**		**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0476	1.4951	0.3735	4.6200e-003	0.1049	4.2900e-003	0.1092	0.0288	4.1100e-003	0.0329		501.8610	501.8610	0.0340		502.7097
Vendor	0.0599	1.9389	0.5043	5.3500e-003	0.1345	3.6400e-003	0.1381	0.0387	3.4900e-003	0.0422		572.2204	572.2204	0.0328		573.0413
Worker	0.2168	0.1437	2.0067	5.9500e-003	0.6036	4.7200e-003	0.6083	0.1601	4.3500e-003	0.1644		593.3047	593.3047	0.0164		593.7140
Total	**0.3243**	**3.5778**	**2.8845**	**0.0159**	**0.8430**	**0.0127**	**0.8556**	**0.2276**	**0.0120**	**0.2395**		**1,667.3860**	**1,667.3860**	**0.0832**		**1,669.4650**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731	0.0000	2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**	**0.0000**	**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0476	1.4951	0.3735	4.6200e-003	0.0978	4.2900e-003	0.1021	0.0270	4.1100e-003	0.0311		501.8610	501.8610	0.0340		502.7097
Vendor	0.0599	1.9389	0.5043	5.3500e-003	0.1258	3.6400e-003	0.1295	0.0366	3.4900e-003	0.0401		572.2204	572.2204	0.0328		573.0413
Worker	0.2168	0.1437	2.0067	5.9500e-003	0.5564	4.7200e-003	0.5611	0.1485	4.3500e-003	0.1528		593.3047	593.3047	0.0164		593.7140
Total	**0.3243**	**3.5778**	**2.8845**	**0.0159**	**0.7800**	**0.0127**	**0.7926**	**0.2121**	**0.0120**	**0.2240**		**1,667.3860**	**1,667.3860**	**0.0832**		**1,669.4650**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9412	9.3322	11.6970	0.0179		0.4879	0.4879		0.4500	0.4500		1,709.6892	1,709.6892	0.5419		1,723.2356
Paving	0.1234					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0646**	**9.3322**	**11.6970**	**0.0179**		**0.4879**	**0.4879**		**0.4500**	**0.4500**		**1,709.6892**	**1,709.6892**	**0.5419**		**1,723.2356**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9412	9.3322	11.6970	0.0179		0.4879	0.4879		0.4500	0.4500	0.0000	1,709.6892	1,709.6892	0.5419		1,723.2356

Paving	0.1234					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0646**	**9.3322**	**11.6970**	**0.0179**		**0.4879**	**0.4879**		**0.4500**	**0.4500**	**0.0000**	**1,709.6892**	**1,709.6892**	**0.5419**		**1,723.2356**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1546	1.3100e-003	0.1559	0.0413	1.2100e-003	0.0425		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1546**	**1.3100e-003**	**0.1559**	**0.0413**	**1.2100e-003**	**0.0425**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

3.8 Finishing/Landscaping - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4503	4.4432	7.1883	0.0113		0.2052	0.2052		0.1888	0.1888		1,094.8749	1,094.8749	0.3541		1,103.7275
Total	**0.4503**	**4.4432**	**7.1883**	**0.0113**		**0.2052**	**0.2052**		**0.1888**	**0.1888**		**1,094.8749**	**1,094.8749**	**0.3541**		**1,103.7275**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0321	0.0213	0.2973	8.8000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		87.8970	87.8970	2.4300e-003		87.9576
Total	**0.0321**	**0.0213**	**0.2973**	**8.8000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**87.8970**	**87.8970**	**2.4300e-003**		**87.9576**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4503	4.4432	7.1883	0.0113		0.2052	0.2052		0.1888	0.1888	0.0000	1,094.8749	1,094.8749	0.3541		1,103.7275
Total	**0.4503**	**4.4432**	**7.1883**	**0.0113**		**0.2052**	**0.2052**		**0.1888**	**0.1888**	**0.0000**	**1,094.8749**	**1,094.8749**	**0.3541**		**1,103.7275**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0321	0.0213	0.2973	8.8000e-004	0.0824	7.0000e-004	0.0831	0.0220	6.4000e-004	0.0226		87.8970	87.8970	2.4300e-003		87.9576
Total	**0.0321**	**0.0213**	**0.2973**	**8.8000e-004**	**0.0824**	**7.0000e-004**	**0.0831**	**0.0220**	**6.4000e-004**	**0.0226**		**87.8970**	**87.8970**	**2.4300e-003**		**87.9576**

92nd Street Elementary School - Construction Phase 2 - Los Angeles-South Coast County, Winter

92nd Street Elementary School - Construction Phase 2

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	35.13	1000sqft	0.81	35,130.00	0
Other Asphalt Surfaces	69.70	1000sqft	1.60	69,700.00	0
Parking Lot	22.63	1000sqft	0.52	22,630.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Refer to CalEEMod inputs.

Construction Phase - Refer to CalEEMod inputs.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Refer to CalEEMod inputs.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - 140 demo hauling trips added. 60 portable building haul trips added.

Demolition -

Architectural Coating - Modernization added to non-residential interior and exterior area. Parking area based on CalEEMod inputs.

Construction Off-road Equipment Mitigation - SCAQMD Rule 403, 1186

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	17,565.00	50,114.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	52,695.00	150,341.00
tblArchitecturalCoating	ConstArea_Parking	5,540.00	6,036.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	220.00	170.00
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	NumDays	6.00	45.00
tblConstructionPhase	NumDays	10.00	45.00
tblGrading	AcresOfGrading	22.50	3.00
tblTripsAndVMT	HaulingTripNumber	115.00	140.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

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

Year	lb/day										lb/day					
2021	2.3695	20.2461	17.1411	0.0361	6.2046	1.0434	7.1212	3.3475	0.9738	4.1908	0.0000	3,429.3767	3,429.3767	0.6486	0.0000	3,441.9668
2022	45.8293	18.2089	17.1382	0.0404	0.8430	0.7150	1.5580	0.2276	0.6852	0.9128	0.0000	3,897.4764	3,897.4764	0.5461	0.0000	3,910.6546
Maximum	**45.8293**	**20.2461**	**17.1411**	**0.0404**	**6.2046**	**1.0434**	**7.1212**	**3.3475**	**0.9738**	**4.1908**	**0.0000**	**3,897.4764**	**3,897.4764**	**0.6486**	**0.0000**	**3,910.6546**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.3695	20.2461	17.1411	0.0361	2.7077	1.0434	3.6244	1.4459	0.9738	2.2892	0.0000	3,429.3767	3,429.3767	0.6486	0.0000	3,441.9668
2022	45.8293	18.2089	17.1382	0.0404	0.7800	0.7150	1.4950	0.2121	0.6852	0.8973	0.0000	3,897.4764	3,897.4764	0.5461	0.0000	3,910.6546
Maximum	**45.8293**	**20.2461**	**17.1411**	**0.0404**	**2.7077**	**1.0434**	**3.6244**	**1.4459**	**0.9738**	**2.2892**	**0.0000**	**3,897.4764**	**3,897.4764**	**0.6486**	**0.0000**	**3,910.6546**

	ROG	NOx	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**	**50.51**	**0.00**	**41.02**	**53.62**	**0.00**	**37.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	9/3/2021	5	90	
2	Grading + Trenching	Grading	9/6/2021	11/5/2021	5	45	
3	Building Construction	Building Construction	11/8/2021	7/1/2022	5	170	
4	Architectural Coating	Architectural Coating	7/4/2022	8/1/2022	5	21	

5	Portable Building Haul	Building Construction	8/2/2022	8/15/2022	5	10	
6	Paving	Paving	8/16/2022	10/17/2022	5	45	
7	Finishing/Landscaping	Trenching	10/18/2022	11/16/2022	5	22	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.12

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 150,341; Non-Residential Outdoor: 50,114; Striped Parking Area:

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading + Trenching	Graders	1	8.00	187	0.41
Grading + Trenching	Rubber Tired Dozers	1	8.00	247	0.40
Grading + Trenching	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Portable Building Haul	Cranes	1	8.00	231	0.29
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Finishing/Landscaping	Excavators	1	8.00	158	0.38

Finishing/Landscaping	Paving Equipment	1	8.00	132	0.36
Finishing/Landscaping	Skid Steer Loaders	1	8.00	65	0.37
Portable Building Haul	Forklifts	2	7.00	89	0.20
Portable Building Haul	Generator Sets	1	8.00	84	0.74
Portable Building Haul	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Portable Building Haul	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	140.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading + Trenching	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	54.00	21.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Portable Building Haul	8	54.00	21.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	3	8.00	0.00	0.00	14.70	6.90	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 - 2021

Unmitigated Construction On-Site

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

Category	lb/day										lb/day					
Fugitive Dust					0.2761	0.0000	0.2761	0.0418	0.0000	0.0418			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715		2,322.7171	2,322.7171	0.5940		2,337.5658
Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.2761**	**1.0409**	**1.3170**	**0.0418**	**0.9715**	**1.0133**		**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0133	0.4224	0.1038	1.1900e-003	0.0272	1.3000e-003	0.0285	7.4600e-003	1.2400e-003	8.7000e-003		129.3885	129.3885	9.2500e-003		129.6198
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0620	0.0424	0.4787	1.4000e-003	0.1453	1.1700e-003	0.1465	0.0385	1.0800e-003	0.0396		139.3926	139.3926	4.1000e-003		139.4952
Total	**0.0753**	**0.4648**	**0.5825**	**2.5900e-003**	**0.1725**	**2.4700e-003**	**0.1750**	**0.0460**	**2.3200e-003**	**0.0483**		**268.7811**	**268.7811**	**0.0134**		**269.1149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1180	0.0000	0.1180	0.0179	0.0000	0.0179			0.0000			0.0000
Off-Road	1.9930	19.6966	14.4925	0.0241		1.0409	1.0409		0.9715	0.9715	0.0000	2,322.7171	2,322.7171	0.5940		2,337.5658

Total	**1.9930**	**19.6966**	**14.4925**	**0.0241**	**0.1180**	**1.0409**	**1.1589**	**0.0179**	**0.9715**	**0.9893**	**0.0000**	**2,322.7171**	**2,322.7171**	**0.5940**		**2,337.5658**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0133	0.4224	0.1038	1.1900e-003	0.0254	1.3000e-003	0.0267	7.0000e-003	1.2400e-003	8.2500e-003		129.3885	129.3885	9.2500e-003		129.6198
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0620	0.0424	0.4787	1.4000e-003	0.1339	1.1700e-003	0.1351	0.0358	1.0800e-003	0.0368		139.3926	139.3926	4.1000e-003		139.4952
Total	**0.0753**	**0.4648**	**0.5825**	**2.5900e-003**	**0.1593**	**2.4700e-003**	**0.1618**	**0.0428**	**2.3200e-003**	**0.0451**		**268.7811**	**268.7811**	**0.0134**		**269.1149**

3.3 Grading + Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0928	0.0000	6.0928	3.3179	0.0000	3.3179			0.0000			0.0000
Off-Road	1.8271	20.2135	9.7604	0.0206		0.9158	0.9158		0.8425	0.8425		1,995.6114	1,995.6114	0.6454		2,011.7470
Total	**1.8271**	**20.2135**	**9.7604**	**0.0206**	**6.0928**	**0.9158**	**7.0085**	**3.3179**	**0.8425**	**4.1604**		**1,995.6114**	**1,995.6114**	**0.6454**		**2,011.7470**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1118	9.0000e-004	0.1127	0.0296	8.3000e-004	0.0305		107.2251	107.2251	3.1600e-003		107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.1118**	**9.0000e-004**	**0.1127**	**0.0296**	**8.3000e-004**	**0.0305**		**107.2251**	**107.2251**	**3.1600e-003**		**107.3040**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6047	0.0000	2.6047	1.4184	0.0000	1.4184			0.0000			0.0000
Off-Road	1.8271	20.2135	9.7604	0.0206		0.9158	0.9158		0.8425	0.8425	0.0000	1,995.6114	1,995.6114	0.6454		2,011.7470
Total	**1.8271**	**20.2135**	**9.7604**	**0.0206**	**2.6047**	**0.9158**	**3.5204**	**1.4184**	**0.8425**	**2.2609**	**0.0000**	**1,995.6114**	**1,995.6114**	**0.6454**		**2,011.7470**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0477	0.0326	0.3683	1.0800e-003	0.1030	9.0000e-004	0.1039	0.0275	8.3000e-004	0.0283		107.2251	107.2251	3.1600e-003		107.3040
Total	**0.0477**	**0.0326**	**0.3683**	**1.0800e-003**	**0.1030**	**9.0000e-004**	**0.1039**	**0.0275**	**8.3000e-004**	**0.0283**		**107.2251**	**107.2251**	**3.1600e-003**		**107.3040**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831		2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**		**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0670	2.0347	0.5896	5.2500e-003	0.1344	4.3000e-003	0.1388	0.0387	4.1100e-003	0.0428		561.4256	561.4256	0.0362		562.3317
Worker	0.2575	0.1761	1.9886	5.8100e-003	0.6036	4.8800e-003	0.6085	0.1601	4.4900e-003	0.1646		579.0156	579.0156	0.0170		579.4415
Total	**0.3245**	**2.2108**	**2.5782**	**0.0111**	**0.7380**	**9.1800e-003**	**0.7472**	**0.1988**	**8.6000e-003**	**0.2074**		**1,140.4412**	**1,140.4412**	**0.0533**		**1,141.7732**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831	0.0000	2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**	**0.0000**	**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0670	2.0347	0.5896	5.2500e-003	0.1258	4.3000e-003	0.1301	0.0366	4.1100e-003	0.0407		561.4256	561.4256	0.0362		562.3317
Worker	0.2575	0.1761	1.9886	5.8100e-003	0.5564	4.8800e-003	0.5612	0.1485	4.4900e-003	0.1530		579.0156	579.0156	0.0170		579.4415
Total	**0.3245**	**2.2108**	**2.5782**	**0.0111**	**0.6822**	**9.1800e-003**	**0.6914**	**0.1851**	**8.6000e-003**	**0.1937**		**1,140.4412**	**1,140.4412**	**0.0533**		**1,141.7732**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731		2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**		**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0629	1.9337	0.5581	5.2000e-003	0.1345	3.7600e-003	0.1382	0.0387	3.6000e-003	0.0423		556.4376	556.4376	0.0350		557.3119
Worker	0.2418	0.1591	1.8316	5.6100e-003	0.6036	4.7200e-003	0.6083	0.1601	4.3500e-003	0.1644		558.6675	558.6675	0.0154		559.0521
Total	**0.3047**	**2.0927**	**2.3897**	**0.0108**	**0.7380**	**8.4800e-003**	**0.7465**	**0.1988**	**7.9500e-003**	**0.2067**		**1,115.1051**	**1,115.1051**	**0.0504**		**1,116.3639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731	0.0000	2,289.2813	2,289.2813	0.4417		2,300.3230

Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**	**0.0000**	**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0629	1.9337	0.5581	5.2000e-003	0.1258	3.7600e-003	0.1296	0.0366	3.6000e-003	0.0402		556.4376	556.4376	0.0350		557.3119
Worker	0.2418	0.1591	1.8316	5.6100e-003	0.5564	4.7200e-003	0.5611	0.1485	4.3500e-003	0.1528		558.6675	558.6675	0.0154		559.0521
Total	**0.3047**	**2.0927**	**2.3897**	**0.0108**	**0.6822**	**8.4800e-003**	**0.6907**	**0.1851**	**7.9500e-003**	**0.1930**		**1,115.1051**	**1,115.1051**	**0.0504**		**1,116.3639**

3.5 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5755					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**45.7801**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0493	0.0324	0.3731	1.1400e-003	0.1230	9.6000e-004	0.1239	0.0326	8.9000e-004	0.0335		113.8026	113.8026	3.1300e-003		113.8810
Total	**0.0493**	**0.0324**	**0.3731**	**1.1400e-003**	**0.1230**	**9.6000e-004**	**0.1239**	**0.0326**	**8.9000e-004**	**0.0335**		**113.8026**	**113.8026**	**3.1300e-003**		**113.8810**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5755					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**45.7801**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0493	0.0324	0.3731	1.1400e-003	0.1133	9.6000e-004	0.1143	0.0303	8.9000e-004	0.0311		113.8026	113.8026	3.1300e-003		113.8810
Total	**0.0493**	**0.0324**	**0.3731**	**1.1400e-003**	**0.1133**	**9.6000e-004**	**0.1143**	**0.0303**	**8.9000e-004**	**0.0311**		**113.8026**	**113.8026**	**3.1300e-003**		**113.8810**

3.6 Portable Building Haul - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731		2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**		**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0488	1.5122	0.3953	4.5400e-003	0.1049	4.3600e-003	0.1093	0.0288	4.1700e-003	0.0329		493.0900	493.0900	0.0351		493.9677
Vendor	0.0629	1.9337	0.5581	5.2000e-003	0.1345	3.7600e-003	0.1382	0.0387	3.6000e-003	0.0423		556.4376	556.4376	0.0350		557.3119
Worker	0.2418	0.1591	1.8316	5.6100e-003	0.6036	4.7200e-003	0.6083	0.1601	4.3500e-003	0.1644		558.6675	558.6675	0.0154		559.0521
Total	**0.3535**	**3.6049**	**2.7849**	**0.0154**	**0.8430**	**0.0128**	**0.8558**	**0.2276**	**0.0121**	**0.2397**		**1,608.1951**	**1,608.1951**	**0.0855**		**1,610.3316**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8555	14.6040	14.3533	0.0250		0.7022	0.7022		0.6731	0.6731	0.0000	2,289.2813	2,289.2813	0.4417		2,300.3230
Total	**1.8555**	**14.6040**	**14.3533**	**0.0250**		**0.7022**	**0.7022**		**0.6731**	**0.6731**	**0.0000**	**2,289.2813**	**2,289.2813**	**0.4417**		**2,300.3230**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0488	1.5122	0.3953	4.5400e-003	0.0978	4.3600e-003	0.1021	0.0270	4.1700e-003	0.0312		493.0900	493.0900	0.0351		493.9677
Vendor	0.0629	1.9337	0.5581	5.2000e-003	0.1258	3.7600e-003	0.1296	0.0366	3.6000e-003	0.0402		556.4376	556.4376	0.0350		557.3119
Worker	0.2418	0.1591	1.8316	5.6100e-003	0.5564	4.7200e-003	0.5611	0.1485	4.3500e-003	0.1528		558.6675	558.6675	0.0154		559.0521
Total	**0.3535**	**3.6049**	**2.7849**	**0.0154**	**0.7800**	**0.0128**	**0.7928**	**0.2121**	**0.0121**	**0.2242**		**1,608.1951**	**1,608.1951**	**0.0855**		**1,610.3316**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9412	9.3322	11.6970	0.0179		0.4879	0.4879		0.4500	0.4500		1,709.6892	1,709.6892	0.5419		1,723.2356
Paving	0.1234					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0646**	**9.3322**	**11.6970**	**0.0179**		**0.4879**	**0.4879**		**0.4500**	**0.4500**		**1,709.6892**	**1,709.6892**	**0.5419**		**1,723.2356**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9412	9.3322	11.6970	0.0179		0.4879	0.4879		0.4500	0.4500	0.0000	1,709.6892	1,709.6892	0.5419		1,723.2356

Paving	0.1234					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0646**	**9.3322**	**11.6970**	**0.0179**		**0.4879**	**0.4879**		**0.4500**	**0.4500**	**0.0000**	**1,709.6892**	**1,709.6892**	**0.5419**		**1,723.2356**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1546	1.3100e-003	0.1559	0.0413	1.2100e-003	0.0425		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1546**	**1.3100e-003**	**0.1559**	**0.0413**	**1.2100e-003**	**0.0425**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

3.8 Finishing/Landscaping - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4503	4.4432	7.1883	0.0113		0.2052	0.2052		0.1888	0.1888		1,094.8749	1,094.8749	0.3541		1,103.7275
Total	**0.4503**	**4.4432**	**7.1883**	**0.0113**		**0.2052**	**0.2052**		**0.1888**	**0.1888**		**1,094.8749**	**1,094.8749**	**0.3541**		**1,103.7275**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0358	0.0236	0.2713	8.3000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		82.7656	82.7656	2.2800e-003		82.8225
Total	**0.0358**	**0.0236**	**0.2713**	**8.3000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**82.7656**	**82.7656**	**2.2800e-003**		**82.8225**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4503	4.4432	7.1883	0.0113		0.2052	0.2052		0.1888	0.1888	0.0000	1,094.8749	1,094.8749	0.3541		1,103.7275
Total	**0.4503**	**4.4432**	**7.1883**	**0.0113**		**0.2052**	**0.2052**		**0.1888**	**0.1888**	**0.0000**	**1,094.8749**	**1,094.8749**	**0.3541**		**1,103.7275**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0358	0.0236	0.2713	8.3000e-004	0.0824	7.0000e-004	0.0831	0.0220	6.4000e-004	0.0226		82.7656	82.7656	2.2800e-003		82.8225
Total	**0.0358**	**0.0236**	**0.2713**	**8.3000e-004**	**0.0824**	**7.0000e-004**	**0.0831**	**0.0220**	**6.4000e-004**	**0.0226**		**82.7656**	**82.7656**	**2.2800e-003**		**82.8225**

Construction Localized Significance Thresholds: Site Preparation

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	0.25	25	82	0.25

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**46**	Graders	0.5	0.0625	8	1	0.5
CO	**231**	Dozers	0.5	0.0625	0	0	0
PM10	**4.00**	Scrapers	1	0.125	0	0	0
PM2.5	**3.00**					**Acres**	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	1	46	46	54	70	109
		46	46	54	70	109
CO	1	231	342	632	1545	5452
	1	231	342	632	1545	5452
		231	342	632	1545	5452
PM10	1	4	12	26	54	139
	1	4	12	26	54	139
		4	12	26	54	139
PM2.5	1	3	4	7	17	70
	1	3	4	7	17	70
		3	4	7	17	70

South Central LA County

0.25 Acres

	25	**50**	**100**	**200**	**500**
NOx	46	46	54	70	109
CO	231	342	632	1545	5452
PM10	4	12	26	54	139
PM2.5	3	4	7	17	70

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Utility Trenching

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	0.25	25	82	0.25

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**46**	Graders	0.5	0.0625	0	0	0
CO	**231**	Dozers	0.5	0.0625	0	0	0
PM10	**4.00**	Scrapers	1	0.125	0	0	0
PM2.5	**3.00**					**Acres**	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	1	46	46	54	70	109
		46	46	54	70	109
CO	1	231	342	632	1545	5452
	1	231	342	632	1545	5452
		231	342	632	1545	5452
PM10	1	4	12	26	54	139
	1	4	12	26	54	139
		4	12	26	54	139
PM2.5	1	3	4	7	17	70
	1	3	4	7	17	70
		3	4	7	17	70

South Central LA County

0.25 Acres

	25	**50**	**100**	**200**	**500**
NOx	46	46	54	70	109
CO	231	342	632	1545	5452
PM10	4	12	26	54	139
PM2.5	3	4	7	17	70

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Portable Installation

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	0.00	25	82	0.25

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	0	0	0
NOx	**46**	Graders	0.5	0.0625	0	0	0
CO	**231**	Dozers	0.5	0.0625	0	0	0
PM10	**4.00**	Scrapers	1	0.125	0	0	0
PM2.5	**3.00**					**Acres**	0.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	1	46	46	54	70	109
		46	46	54	70	109
CO	1	231	342	632	1545	5452
	1	231	342	632	1545	5452
		231	342	632	1545	5452
PM10	1	4	12	26	54	139
	1	4	12	26	54	139
		4	12	26	54	139
PM2.5	1	3	4	7	17	70
	1	3	4	7	17	70
		3	4	7	17	70

South Central LA County

0.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	46	46	54	70	109
CO	231	342	632	1545	5452
PM10	4	12	26	54	139
PM2.5	3	4	7	17	70

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Demolition

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	2.00	25	82	2.93

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	3	1.5
NOx	**65**	Graders	0.5	0.0625	0	0	0
CO	**346**	Dozers	0.5	0.0625	8	1	0.5
PM10	**7**	Scrapers	1	0.125	0	0	0
PM2.5	**4**					**Acres**	2.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	2	65	64	69	82	117
	2	65	64	69	82	117
		65	64	69	82	117
CO	2	346	515	841	1817	5962
	2	346	515	841	1817	5962
		346	515	841	1817	5962
PM10	2	7	20	34	62	146
	2	7	20	34	62	146
		7	20	34	62	146
PM2.5	2	4	6	9	19	74
	2	4	6	9	19	74
		4	6	9	19	74

South Central LA County

2.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	65	64	69	82	117
CO	346	515	841	1817	5962
PM10	7	20	34	62	146
PM2.5	4	6	9	19	74

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	2	12	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Grading + Utility Trenching

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	1.88	25	82	2.93

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	7	2	0.875
NOx	**63**	Graders	0.5	0.0625	8	1	0.5
CO	**332**	Dozers	0.5	0.0625	8	1	0.5
PM10	**7**	Scrapers	1	0.125	0	0	0
PM2.5	**4**					**Acres**	1.88

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	2	65	64	69	82	117
		63	62	67	81	116
CO	1	231	342	632	1545	5452
	2	346	515	841	1817	5962
		332	493	815	1783	5898
PM10	1	4	12	26	54	139
	2	7	20	34	62	146
		7	19	33	61	145
PM2.5	1	3	4	7	17	70
	2	4	6	9	19	74
		4	6	9	19	74

South Central LA County

1.88 Acres

	25	**50**	**100**	**200**	**500**
NOx	63	62	67	81	116
CO	332	493	815	1783	5898
PM10	7	19	33	61	145
PM2.5	4	6	9	19	74

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	2
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Building Construction

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	0.38	25	82	2.93

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	6	1	0.375
NOx	**46**	Graders	0.5	0.0625	0	0	0
CO	**231**	Dozers	0.5	0.0625	0	0	0
PM10	**4.00**	Scrapers	1	0.125	0	0	0
PM2.5	**3.00**					**Acres**	0.38

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	1	46	46	54	70	109
		46	46	54	70	109
CO	1	231	342	632	1545	5452
	1	231	342	632	1545	5452
		231	342	632	1545	5452
PM10	1	4	12	26	54	139
	1	4	12	26	54	139
		4	12	26	54	139
PM2.5	1	3	4	7	17	70
	1	3	4	7	17	70
		3	4	7	17	70

South Central LA County

0.38 Acres

	25	**50**	**100**	**200**	**500**
NOx	46	46	54	70	109
CO	231	342	632	1545	5452
PM10	4	12	26	54	139
PM2.5	3	4	7	17	70

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Architectural Coating

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	0.00	25	82	2.93

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	0	0	0
NOx	**46**	Graders	0.5	0.0625	0	0	0
CO	**231**	Dozers	0.5	0.0625	0	0	0
PM10	**4.00**	Scrapers	1	0.125	0	0	0
PM2.5	**3.00**					**Acres**	0.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	1	46	46	54	70	109
		46	46	54	70	109
CO	1	231	342	632	1545	5452
	1	231	342	632	1545	5452
		231	342	632	1545	5452
PM10	1	4	12	26	54	139
	1	4	12	26	54	139
		4	12	26	54	139
PM2.5	1	3	4	7	17	70
	1	3	4	7	17	70
		3	4	7	17	70

South Central LA County

0.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	46	46	54	70	109
CO	231	342	632	1545	5452
PM10	4	12	26	54	139
PM2.5	3	4	7	17	70

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Portable Building Haul

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	0.00	25	82	2.93

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	0	0	0
NOx	**46**	Graders	0.5	0.0625	0	0	0
CO	**231**	Dozers	0.5	0.0625	0	0	0
PM10	**4.00**	Scrapers	1	0.125	0	0	0
PM2.5	**3.00**					**Acres**	0.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	1	46	46	54	70	109
		46	46	54	70	109
CO	1	231	342	632	1545	5452
	1	231	342	632	1545	5452
		231	342	632	1545	5452
PM10	1	4	12	26	54	139
	1	4	12	26	54	139
		4	12	26	54	139
PM2.5	1	3	4	7	17	70
	1	3	4	7	17	70
		3	4	7	17	70

South Central LA County

0.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	46	46	54	70	109
CO	231	342	632	1545	5452
PM10	4	12	26	54	139
PM2.5	3	4	7	17	70

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Paving

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	0.50	25	82	2.93

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	8	1	0.5
NOx	**46**	Graders	0.5	0.0625	0	0	0
CO	**231**	Dozers	0.5	0.0625	0	0	0
PM10	**4.00**	Scrapers	1	0.125	0	0	0
PM2.5	**3.00**					**Acres**	0.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	1	46	46	54	70	109
		46	46	54	70	109
CO	1	231	342	632	1545	5452
	1	231	342	632	1545	5452
		231	342	632	1545	5452
PM10	1	4	12	26	54	139
	1	4	12	26	54	139
		4	12	26	54	139
PM2.5	1	3	4	7	17	70
	1	3	4	7	17	70
		3	4	7	17	70

South Central LA County

0.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	46	46	54	70	109
CO	231	342	632	1545	5452
PM10	4	12	26	54	139
PM2.5	3	4	7	17	70

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Construction Localized Significance Thresholds: Finishing/Landscaping

SRA No.	Acres	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Project site Acreage Disturbed
12	0.00	25	82	2.93

Source Receptor	South Central LA County	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
Distance (meters)	25	Tractors	0.5	0.0625	0	0	0
NOx	**46**	Graders	0.5	0.0625	0	0	0
CO	**231**	Dozers	0.5	0.0625	0	0	0
PM10	**4.00**	Scrapers	1	0.125	0	0	0
PM2.5	**3.00**					**Acres**	0.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	46	46	54	70	109
	1	46	46	54	70	109
		46	46	54	70	109
CO	1	231	342	632	1545	5452
	1	231	342	632	1545	5452
		231	342	632	1545	5452
PM10	1	4	12	26	54	139
	1	4	12	26	54	139
		4	12	26	54	139
PM2.5	1	3	4	7	17	70
	1	3	4	7	17	70
		3	4	7	17	70

South Central LA County

0.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	46	46	54	70	109
CO	231	342	632	1545	5452
PM10	4	12	26	54	139
PM2.5	3	4	7	17	70

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
12	1	12	1
Distance Increment Below			
25			
Distance Increment Above			
25			

Updated: 10/21/2009 - Table C-1. 2006 – 2008

Regional Construction Emissions Worksheet - Unmitigated

*CalEEMod, Version 2016.3.2

Construction Phase 1 - Interim Portable Installation

Site Preparation

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2020**						
	Fugitive Dust		0.00	0.00	0.00	0.00	0.05	0.00
	Off-Road		0.69	8.43	4.09	0.01	0.34	0.31
	Total		**0.69**	**8.43**	**4.09**	**0.01**	**0.38**	**0.31**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.03	0.02	0.22	0.00	0.05	0.01
	Total		**0.03**	**0.02**	**0.22**	**0.00**	**0.05**	**0.01**
TOTAL			***0.71***	***8.45***	***4.31***	***0.01***	***0.43***	***0.33***

Utility Trenching

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2019**						
	Off-Road		0.45	4.52	5.55	0.01	0.25	0.23
	Total		**0.45**	**4.52**	**5.55**	**0.01**	**0.25**	**0.23**
Offsite								
	Hauling		0.00	0.00	0.00	0.00	0.00	0.00
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.03	0.02	0.22	0.00	0.05	0.01
	Total		**0.03**	**0.02**	**0.22**	**0.00**	**0.05**	**0.01**
TOTAL			***0.48***	***4.54***	***5.77***	***0.01***	***0.30***	***0.24***

Portable Installation

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2020**						
	Off-Road		0.86	8.85	7.39	0.01	0.52	0.48
	Total		**0.86**	**8.85**	**7.39**	**0.01**	**0.52**	**0.48**
Offsite								
	Hauling		0.05	1.75	0.41	0.00	0.10	0.03
	Vendor		0.01	0.21	0.06	0.00	0.01	0.00
	Worker		0.03	0.02	0.22	0.00	0.05	0.01
	Total		**0.09**	**1.98**	**0.67**	**0.01**	**0.17**	**0.05**
TOTAL			***0.95***	***10.83***	***8.06***	***0.02***	***0.69***	***0.53***

Construction Phase 2 - Interim Portable Installation

Demolition

			ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		**2021**						
	Fugitive Dust		0.00	0.00	0.00	0.00	0.12	0.02
	Off-Road		1.99	19.70	14.49	0.02	1.04	0.97
	Total		**1.99**	**19.70**	**14.49**	**0.02**	**1.16**	**0.99**
Offsite								
	Hauling		0.01	0.42	0.10	0.00	0.03	0.01
	Vendor		0.00	0.00	0.00	0.00	0.00	0.00
	Worker		0.06	0.04	0.52	0.00	0.14	0.04

	Total	**0.08**	**0.46**	**0.62**	**0.00**	**0.16**	**0.05**
TOTAL		***2.07***	***20.16***	***15.11***	***0.03***	***1.32***	***1.03***

Grading + Trenching

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2021**						
	Fugitive Dust	0.00	0.00	0.00	0.00	2.60	1.42
	Off-Road	1.83	20.21	9.76	0.02	0.92	0.84
	Total	**1.83**	**20.21**	**9.76**	**0.02**	**3.52**	**2.26**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.05	0.03	0.40	0.00	0.10	0.03
	Total	**0.05**	**0.03**	**0.40**	**0.00**	**0.10**	**0.03**
TOTAL		***1.87***	***20.25***	***10.16***	***0.02***	***3.62***	***2.29***

Building Construction

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2021-2022**						
	Off-Road	2.05	16.03	14.56	0.03	0.82	0.78
	Total	**2.05**	**16.03**	**14.56**	**0.03**	**0.82**	**0.78**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.07	2.04	0.59	0.01	0.13	0.04
	Worker	0.26	0.18	2.18	0.01	0.56	0.15
	Total	**0.32**	**2.21**	**2.71**	**0.01**	**0.69**	**0.19**
TOTAL		***2.37***	***18.24***	***17.27***	***0.04***	***1.51***	***0.98***

Architectural Coating

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022**						
	Architectural Coating	45.58	0.00	0.00	0.00	0.00	0.00
	Off-Road	0.20	1.41	1.81	0.00	0.08	0.08
	Total	**45.78**	**1.41**	**1.81**	**0.00**	**0.08**	**0.08**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.05	0.03	0.41	0.00	0.11	0.03
	Total	**0.05**	**0.03**	**0.41**	**0.00**	**0.11**	**0.03**
TOTAL		***45.83***	***1.44***	***2.22***	***0.00***	***0.20***	***0.11***

Portable Building Haul

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022**						
	Off-Road	1.86	14.60	14.35	0.03	0.70	0.67
	Total	**1.86**	**14.60**	**14.35**	**0.03**	**0.70**	**0.67**
Offsite							
	Hauling	0.05	1.51	0.40	0.00	0.10	0.03
	Vendor	0.06	1.94	0.56	0.01	0.13	0.04
	Worker	0.24	0.16	2.01	0.01	0.56	0.15
	Total	**0.35**	**3.60**	**2.88**	**0.02**	**0.79**	**0.22**
TOTAL		***2.21***	***18.21***	***17.24***	***0.04***	***1.50***	***0.90***

Paving							
		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022**						
	Off-Road	0.94	9.33	11.70	0.02	0.49	0.45
	Paving	0.12	0.00	0.00	0.00	0.00	0.00
	Total	**1.06**	**9.33**	**11.70**	**0.02**	**0.49**	**0.45**
Offsite							
	Hauling	0.05	1.73	0.38	0.00	0.10	0.03
	Vendor	0.01	0.21	0.06	0.00	0.01	0.00
	Worker	0.07	0.04	0.51	0.00	0.16	0.04
	Total	**0.08**	**1.95**	**0.66**	**0.01**	**0.17**	**0.05**
TOTAL		***1.15***	***11.29***	***12.35***	***0.02***	***0.66***	***0.50***

Finishing/Landscaping							
		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**2022**						
	Off-Road	0.45	4.44	7.19	0.01	0.21	0.19
	Total	**0.45**	**4.44**	**7.19**	**0.01**	**0.21**	**0.19**
Offsite							
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Worker	0.04	0.02	0.30	0.00	0.08	0.02
	Total	**0.04**	**0.02**	**0.30**	**0.00**	**0.08**	**0.02**
TOTAL		***0.49***	***4.47***	***7.49***	***0.01***	***0.29***	***0.21***

MAX DAILY	**46**	**20**	**17**	**0**	**4**	**2**
Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Localized Construction Emissions Worksheet - Unmitigated

*CalEEMod, Version 2016.3.2

Construction Phase 1						
Site Preparation						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2020**				
	Fugitive Dust		0.00	0.00	0.05	0.00
	Off-Road		8.43	4.09	0.34	0.31
	Total		**8.43**	**4.09**	**0.38**	**0.31**
Site Preparation 1.00-acres LST			**46**	**231**	**4**	**3**
Exceed Threshold?			No	No	No	No
Utility Trenching						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2020**				
	Off-Road		4.52	5.55	0.25	0.23
	Total		**4.52**	**5.55**	**0.25**	**0.23**
Utility Trenching 1.00-acres LST			**46**	**231**	**4**	**3**
Exceed Threshold?			No	No	No	No

Portable Installation					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2019**				
Off-Road		8.85	7.39	0.52	0.48
Total		**8.85**	**7.39**	**0.52**	**0.48**
Portable Installation 1.00-acres LST		**46**	**231**	**4**	**3**
Exceeds Thresholds?		No	No	No	No

Construction Phase 2					
Demolition					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2021**				
Fugitive Dust		0.00	0.00	0.12	0.02
Off-Road		19.70	14.49	1.04	0.97
Total		**19.70**	**14.49**	**1.16**	**0.99**
Demolition 2.00-acres LST		**65**	**346**	**7**	**4**
Exceed Threshold?		No	No	No	No

Grading + Utility Trenching					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2021**				
Fugitive Dust		0.00	0.00	2.60	1.42
Off-Road		20.21	9.76	0.92	0.84
Total		**20.21**	**9.76**	**3.52**	**2.26**
Grading + Utility Trenching 1.88-acres LST		**63**	**332**	**7**	**4**
Exceed Threshold?		No	No	No	No

Building Construction					
		NOx	CO	PM10 Total	PM2.5 Total
Onsite	**2021-2022**				
Off-Road		16.03	14.56	0.82	0.78
Total		**16.03**	**14.56**	**0.82**	**0.78**
Building Construction 1.00-acres LST		**103**	**562**	**4**	**3**
Exceeds Thresholds?		No	No	No	No

Architectural Coating					
		NOx	CO	PM10 Total	PM2.5 Total

Onsite		**2022**				
	Architectural Coating		0.00	0.00	0.00	0.00
	Off-Road		1.41	1.81	0.08	0.08
	Total		**1.41**	**1.81**	**0.08**	**0.08**
Architectural Coating 1.00-acres LST			**103**	**562**	**4**	**3**
Exceeds Thresholds?			No	No	No	No
Portable Building Haul						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road		14.60	14.35	0.70	0.67
	Total		**14.60**	**14.35**	**0.70**	**0.67**
Portable Building Haul 1.00-acres LST			**103**	**562**	**4**	**3**
Exceeds Thresholds?			No	No	No	No
Paving						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road		9.33	11.70	0.49	0.45
	Paving		0.00	0.00	0.00	0.00
	Total		**9.33**	**11.70**	**0.49**	**0.45**
Paving 1.00-acres LST			**103**	**562**	**4**	**3**
Exceeds Thresholds?			No	No	No	No
Finishing/Landscaping						
			NOx	CO	PM10 Total	PM2.5 Total
Onsite		**2022**				
	Off-Road		4.44	7.19	0.21	0.19
	Total		**4.44**	**7.19**	**0.21**	**0.19**
Finishing/Landscaping 1.00-acres LST			**103**	**562**	**4**	**3**
Exceeds Thresholds?			No	No	No	No

GHG Emissions Inventory

Construction

	$MTCO_2e$ Total**
2020	27.7786
2021	212.6424
2022	274.4419
Total Construction	**515**

Amortized Construction Emissions***	**17**	$MTCO_2e$/Year
Total	**17**	**$MTCO_2e$/Year**

*CalEEMod, Version 2016.3.2.

** $MTCO_2e$=metric tons of carbon dioxide equivalent.

*** Total construction emissions are amortized over 30 years per SCAQMD methodology; SCAQMD. 2009, November 19. Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting 14. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-14/ghg-meeting-14-main-presentation.pdf?sfvrsn=2.

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

2020 Scoping Plan Emissions Inventory

Source: CARB 1990 Inventory. California Air Resources Board. 2007, November. California Greenhouse Gas Inventory (millions of metric tonnes of CO2 equivalent) — Summary by Economic Sector. https://www.arb.ca.gov/cc/inventory/1990level/1990data.htm

1990 End Use Sector	MTCO2e	MMTCO2e	Notes
Electricity	94,754,207	94.8	Removed Industrial
Transportation	137,901,182	137.9	On-Road Only
Landfills	7,447,544	7.4	Landfill
Wastewater	3,183,648	3.2	Domestic Wastewater Treatment
Commercial	13,848,597	13.8	Removed National Security
Residential	29,740,487	29.7	Includes all
TOTAL LAND USE	286,875,666	286.9	

2017 Scoping Plan Emissions Inventory

Source: Pathways Main Outputs Final (Dec 2017). California Air Resources Board. 2017, December. The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

End Use Sector 2030	MMTCO2e				
	Reference Scenario	Scoping Plan Scenario	Change	Percent Change	Sector Definition
Residential	46.5	41.4	-5.1	-11.0%	Residential final energy consumption
Commercial	36.00	30.1	-5.90	-16.4%	Commercial final energy consumption
Transportation	123.1	105.1	-18	-14.6%	Transportation energy consumption
Industrial*	33.8	30.7	-3.1	-9.2%	Industrial manufacturing final energy consumption,
Oil & Gas Extraction*	19.5	19.4	-0.1	-0.5%	Energy used in the extraction of oil and gas
Petroleum Refining*	32.6	32.5	-0.1	-0.3%	Energy used in petroleum Refining
Agriculture	7.7	6.8	-0.9	-11.7%	Energy use of physical infrastructure of agriculture, like buildings and pumps
Transportation Communications and Utilities	5.5	5.00	-0.5	-9.1%	Transportation Communications and Utilities (TCU) energy supports public infrastructure, like street lighting and waste treatment facilities
Non-Energy GHGs*	84.3	49.4	-34.9	-41.40%	Examples of non-energy GHG emissions include methane and N2O emissions from agriculture and waste, refrigerant F-gases, and emissions from cement production
Solid Waste Non-Energy GHGs	10.7	9.1	-1.6	-14.95%	Isolated the Solid Waste Subsector
Unspecified	0	0	0	n/a	
	389	320.4	-68.6	-17.63%	
Target	260	260			
Gap	-129	-60.4			

CARB 2017 Scoping Plan Assumes GAP from the Scoping Plan Scenario is closed by the Cap-and-Trade

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

STATEWIDE SERVICE POPULATION CALCULATIONS

Population	
2020	40,639,392
2021	40,980,939
2022	41,321,565
2023	41,659,526
2024	41,994,283
2025	42,326,397
2026	42,655,695
2027	42,981,484
2028	43,304,691
2029	43,624,393
2030	43,939,250
2031	44,250,503
2032	44,556,617
2033	44,856,079
2034	45,150,800
2035	45,440,735
2036	45,726,459
2037	46,006,009
2038	46,277,743
2039	46,544,307
2040	46,804,202
2050	49,077,801

California Department of Finance. 2018, March 8. Report P-1 (County): State and County Total Population Projections, 2010-2060 (1 -year increments).http://www.dof.ca.gov/Forecasting/Demographics/Projections/

CALIFORNIA SERVICE POPULATION (ESTIMATE)

Employment

	Total Employment	Farm Employment	Natural Resources and Mining Employment	Manufacturing + Durable Manufacturing Employment	Employment w/o Industrial and Agricultural Sectors
2020	17,630,930	418,171	22,268	2,177,747	15,012,744
2021	17,787,640	417,961	22,388	2,184,418	15,162,873

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

2022	17,939,780	418,291	22,578	2,190,008	15,308,902
2023	18,083,910	418,582	22,538	2,192,829	15,449,961
2024	18,224,870	418,862	22,398	2,195,081	15,588,529
2025	18,370,230	419,122	22,188	2,204,979	15,723,941
2026	18,511,920	419,372	22,198	2,215,447	15,854,903
2027	18,648,200	419,612	22,408	2,224,416	15,981,764
2028	18,808,150	419,872	22,438	2,229,397	16,136,443
2029	18,971,340	420,142	22,478	2,234,398	16,294,322
2030	19,137,080	420,402	22,508	2,239,408	16,454,761
2031	19,299,670	420,673	22,538	2,244,399	16,612,060
2032	19,458,160	420,933	22,578	2,249,420	16,765,229
2033	19,615,470	421,203	22,608	2,254,441	16,917,218
2034	19,770,890	421,463	22,648	2,259,502	17,067,277
2035	19,924,140	421,733	22,678	2,264,562	17,215,166
2036	20,078,780	421,993	22,718	2,269,643	17,364,425
2037	20,235,200	422,263	22,748	2,274,724	17,515,465
2038	20,395,030	422,523	22,788	2,279,835	17,669,884
2039	20,551,830	422,794	22,818	2,284,955	17,821,263
2040	20,709,630	423,054	22,859	2,290,086	17,973,632
2050	22,371,010	425,715	23,209	2,342,246	19,579,840

California Department of Transportation. 2017. Long-Term Socio-Economic Forecasts by County.
http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic.html

Service Population (SP)

	Total Employment	Employment w/o Industrial and Agricultural Sectors
2020	58,270,322	55,652,136
2021	58,768,579	56,143,812
2022	59,261,345	56,630,467
2023	59,743,436	57,109,487
2024	60,219,153	57,582,812
2025	60,696,627	58,050,338
2026	61,167,615	58,510,598
2027	61,629,684	58,963,248
2028	62,112,841	59,441,134
2029	62,595,733	59,918,715
2030	63,076,330	60,394,011
2031	63,550,173	60,862,563
2032	64,014,777	61,321,846
2033	64,471,549	61,773,297
2034	64,921,690	62,218,077
2035	65,364,875	62,655,901

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

	2036	65,805,239	63,090,884
	2037	66,241,209	63,521,474
	2038	66,672,773	63,947,627
	2039	67,096,137	64,365,570
	2040	67,513,832	64,777,834
	2050	71,448,811	68,657,641

Project Horizon Year Estimate	2024
2024 population	41,994,283
2024 employment (w/o industrial & Ag)	15,588,529
2024 SP	57,582,812

2030 Scoping Plan - Efficiency Metric

Year 2020 Plan-Level		
2020 Target (Plan-Level)	MMTCO2e	431
2020 Per Capita Target	MTCO2e/pc	10.6
2020 Per Service Population Target (Plan-Level)	MTCO2e/sp	7.7
Year 2020 Project-Level		
2020 Target (Project-Level)	MMTCO2e	286.9
2020 Per Capita Target	MTCO2e/pc	7.1
2020 Per Service Population Target (Project-Level)	MTCO2e/sp	5.2
Year 2030 Plan-Level		
2030 Target (Plan-Level)	MMTCO2e	260
2030 Per Capita Target	MTCO2e/pc	5.9
2030 Per Service Population Target (Plan-Level)	MTCO2e/sp	4.3
Year 2030 Project-Level		
Land Use Inventory (Project-Level)	MMTCO2e	190.7
2030 Per Capita Target	MTCO2e/pc	4.3
2030 Per Service Population Target (Project-Level)	MTCO2e/sp	3.2
Year 2050 Plan-Level		
2050 Target estimated (Plan-Level)	MMTCO2e	86
2050 Per Capita Target	MTCO2e/pc	1.8
2050 Per Service Population Target (Plan-Level)	MTCO2e/sp	1.3
Year 2050 Project-Level		
2050 Target estimated (Plan-Level)	MMTCO2e	57
2050 Per Capita Target	MTCO2e/pc	1.2
2050 Per Service Population Target (Plan-Level)	MTCO2e/sp	0.8

GHG Emissions Target Setting - Forecasting the 2030 Efficiency Target

Project Horizon Year Estimate	2024		
Land Use Inventory (Project-Level)	MMTCO2e	248	-13%
2024 Per Service Population Target (Project-Level)	MTCO2e/sp	4.3	