

# **Air Quality and Greenhouse Gas Appendix**

# Air Quality and Greenhouse Gas Background and Modeling Data

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## AIR QUALITY

### Air Quality Regulatory Setting

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 (South Coast AQMD). However, South Coast AQMD 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, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants include ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), coarse inhalable particulate matter (PM<sub>10</sub>), fine inhalable particulate matter (PM<sub>2.5</sub>), 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 <sup>1</sup>	Federal Primary Standard <sup>2</sup>	Major Pollutant Sources
Ozone (O <sub>3</sub> ) <sup>3</sup>	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 <sub>2</sub> )	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 <sub>2</sub> )	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 <sub>10</sub> )	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	*	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 <sup>3</sup>	150 µg/m <sup>3</sup>	
Respirable Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>4</sup>	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m <sup>3</sup>	
Lead (Pb)	30-Day Average	1.5 µg/m <sup>3</sup>	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m <sup>3</sup>	
	Rolling 3-Month Average	*	0.15 µg/m <sup>3</sup>	
Sulfates (SO <sub>4</sub> ) <sup>5</sup>	24 hours	25 µg/m <sup>3</sup>	*	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.

**Table 1 Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard <sup>1</sup>	Federal Primary Standard <sup>2</sup>	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H <sub>2</sub> S) 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 hours	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<sup>3</sup>: micrograms per cubic meter

\* Standard has not been established for this pollutant/duration by this entity.

- California standards for O<sub>3</sub>, CO (except 8-hour Lake Tahoe), SO<sub>2</sub> (1 and 24 hour), NO<sub>2</sub>, and particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equalled 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.
- National standards (other than O<sub>3</sub>, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O<sub>3</sub> 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<sub>10</sub>, 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<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, 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.
- On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- On December 14, 2012, the national annual PM<sub>2.5</sub> primary standard was lowered from 15 µg/m<sup>3</sup> to 12.0 µg/m<sup>3</sup>. The existing national 24-hour PM<sub>2.5</sub> standards (primary and secondary) were retained at 35 µg/m<sup>3</sup>, as was the annual secondary standard of 15 µg/m<sup>3</sup>. The existing 24-hour PM<sub>10</sub> standards (primary and secondary) of 150 µg/m<sup>3</sup> also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- On June 2, 2010, a new 1-hour SO<sub>2</sub> 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

## AIR POLLUTANTS OF CONCERN

### 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 and include CO, VOC, NO<sub>2</sub>, SO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and Pb. Of these, CO, SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are “criteria air pollutants,” which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO<sub>x</sub>) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O<sub>3</sub>) and NO<sub>2</sub> 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 (South Coast AQMD 2005; US EPA 2023). The SoCAB is designated as being in attainment under the California AAQS and attainment (serious maintenance) under the National AAQS (CARB 2023a).

**Volatile Organic Compounds (VOC)** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols (South Coast AQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of O<sub>3</sub>, South Coast AQMD has established a significance threshold (South Coast AQMD 2019). The health effects for ozone are described later in this section.

**Nitrogen Oxides (NO<sub>x</sub>)** are a by-product of fuel combustion and contribute to the formation of ground-level O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. The two major forms of NO<sub>x</sub> are nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO<sub>x</sub> produced by combustion is NO, but NO reacts quickly with oxygen to form NO<sub>2</sub>, creating the mixture of NO and NO<sub>2</sub> commonly called NO<sub>x</sub>. NO<sub>2</sub> is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO<sub>2</sub> is only potentially irritating. NO<sub>2</sub> absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO<sub>2</sub> exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO<sub>2</sub> exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO<sub>2</sub> concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (South Coast AQMD 2005; USEPA 2023a). On February 21, 2019, CARB's Board approved the separation of the area that runs along the State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for state nonattainment designation purposes. The Board designated this corridor as nonattainment.<sup>1</sup> The remainder of the SoCAB is designated in attainment (maintenance) under the National AAQS and attainment under the California AAQS (CARB 2023a).

**Sulfur Dioxide (SO<sub>2</sub>)** 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 chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release

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<sup>1</sup> CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for NO<sub>2</sub> at the February 24, 2022 Board Hearing (CARB 2023d).

significant quantities of SO<sub>2</sub>. When sulfur dioxide forms sulfates (SO<sub>4</sub>) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO<sub>x</sub>). Thus, SO<sub>2</sub> is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO<sub>2</sub> may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO<sub>2</sub>, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing) at lower concentrations and when combined with particulates, SO<sub>2</sub> may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (South Coast AQMD 2005; US EPA 2023). The SoCAB is designated as attainment under the California and National AAQS (CARB 2023a).

**Suspended Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)** 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<sub>10</sub>, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤0.01 millimeter). Inhalable fine particles, or PM<sub>2.5</sub>, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤0.0025 millimeter). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM<sub>10</sub> and PM<sub>2.5</sub> may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that PM<sub>2.5</sub>, which penetrates deeply into the lungs, is more likely than PM<sub>10</sub> to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (South Coast AQMD 2005). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.0001 millimeter) have human health implications because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (South Coast AQMD 2013). However, the EPA and the California Air Resources Board (CARB) have not adopted AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 2023e). Particulate matter can also cause environmental effects such as visibility impairment,<sup>2</sup> environmental damage,<sup>3</sup> and aesthetic damage<sup>4</sup> (South Coast AQMD 2005; US EPA 2023). The SoCAB is a nonattainment area for PM<sub>2.5</sub> under California and National AAQS and a nonattainment area for PM<sub>10</sub> under the California AAQS (CARB 2023a).<sup>5</sup>

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<sup>2</sup> PM<sub>2.5</sub> is the main cause of reduced visibility (haze) in parts of the United States.

<sup>3</sup> 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.

<sup>4</sup> Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

<sup>5</sup> CARB approved the South Coast AQMD's request to redesignate the SoCAB from serious nonattainment for PM<sub>10</sub> to attainment for PM<sub>10</sub> under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM<sub>10</sub>

**Ozone (O<sub>3</sub>)** is a key ingredient of “smog” and is a gas that is formed when VOCs and NO<sub>x</sub>, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O<sub>3</sub> is a secondary criteria air pollutant. O<sub>3</sub> concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O<sub>3</sub> poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O<sub>3</sub> 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<sub>3</sub> also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O<sub>3</sub> also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O<sub>3</sub> harms sensitive vegetation during the growing season (South Coast AQMD 2005; US EPA 2023). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2023a).

**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 (South Coast AQMD 2005; USEPA 2018). 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 more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.<sup>6</sup> As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (South Coast AQMD 2012; CARB 2023a). However, lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011 (South Coast AQMD 2012). CARB’s State Implementation Plan (SIP) revision was submitted to the EPA for approval. Because emissions of lead are found only in projects that are permitted by South Coast AQMD, lead is not a pollutant of concern for the proposed project.

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standards from 2004 to 2007. The EPA approved the State of California’s request to redesignate the South Coast PM<sub>10</sub> nonattainment area to attainment of the PM<sub>10</sub> National AAQS, effective on July 26, 2013.

<sup>6</sup> 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 (South Coast AQMD 2012).

## **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.

## **AIR QUALITY MANAGEMENT PLANNING**

The South Coast AQMD is the agency responsible for improving air quality in the SoCAB and ensuring that the National and California AAQS are attained and maintained. South Coast AQMD is 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.

### **2022 AQMP**

South Coast AQMD adopted the 2022 AQMP on December 2, 2022, which serves as an update to the 2017 AQMP. On October 1, 2015, the EPA strengthened the National AAQS for ground-level ozone, lowering the primary and secondary ozone standard levels to 70 parts per billion (ppb) (2015 Ozone National AAQS). The SoCAB is currently classified as an “extreme” nonattainment for the 2015 Ozone National AAQS. Meeting the 2015 federal ozone standard requires reducing NO<sub>x</sub> emissions, the key pollutant that creates ozone, by 67 percent more than is required by adopted rules and regulations in 2037. The only way to achieve the required NO<sub>x</sub> reductions is through extensive use of zero emission (ZE) technologies across all stationary and mobile sources. South Coast AQMD's primary authority is over stationary sources which account for approximately 20 percent of NO<sub>x</sub> emissions. The overwhelming majority of NO<sub>x</sub> emissions are from heavy-duty trucks, ships and other State and federally regulated mobile sources that are mostly beyond the South Coast AQMD's control. The region will not meet the standard absent significant federal action. In addition to

federal action, the 2022 AQMP requires substantial reliance on future deployment of advanced technologies to meet the standard. The control strategy for the 2022 AQMP includes aggressive new regulations and the development of incentive programs to support early deployment of advanced technologies. The two key areas for incentive programs are (1) promoting widespread deployment of available ZE and low-NO<sub>x</sub> technologies and (2) developing new ZE and ultra-low NO<sub>x</sub> technologies for use in cases where the technology is not currently available. South Coast AQMD is prioritizing distribution of incentive funding in Environmental Justice areas and seeking opportunities to focus benefits on the most disadvantaged communities (South Coast AQMD 2022).

### **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.

### **South Coast AQMD PM<sub>2.5</sub> Redesignation Request and Maintenance Plan**

In 1997, the EPA adopted the 24-hour fine PM<sub>2.5</sub> standard of 65 micrograms per cubic meter (µg/m<sup>3</sup>). In 2006, this standard was lowered to a more health-protective level of 35 µg/m<sup>3</sup>. The SoCAB is designated nonattainment for both the 65 and 35 µg/m<sup>3</sup> 24-hour PM<sub>2.5</sub> standards (24-hour PM<sub>2.5</sub> standards). In 2020, monitored data demonstrated that the SoCAB attained both 24-hour PM<sub>2.5</sub> standards. The South Coast AQMD has developed the 2021 Redesignation Request and Maintenance Plan for the 1997 and 2006 24-hour PM<sub>2.5</sub> Standards demonstrating that the SoCAB has met the requirements to be redesignated to attainment for the 24-hour PM<sub>2.5</sub> standards (South Coast AQMD 2021b).

### **AB 617, Community Air Protection Program**

Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017) requires local air districts to monitor and implement air pollution control strategies that reduce localized air pollution in communities that bear the greatest burdens. In response to AB 617, CARB has established the Community Air Protection Program.

Air districts are required to host workshops to help identify disadvantaged communities disproportionately affected by poor air quality. Once the criteria for identifying the highest priority locations have been identified and the communities have been selected, new community monitoring systems would be installed to track and monitor community-specific air pollution goals. In 2018 CARB prepared an air monitoring plan (Community Air Protection Blueprint), that evaluates the availability and effectiveness of air monitoring technologies and existing community air monitoring networks. Under AB 617, the Blueprint is required to be updated every five years.

Under AB 617, CARB is also required to prepare a statewide strategy to reduce TACs and criteria pollutants in impacted communities; provide a statewide clearinghouse for best available retrofit control technology;

adopt new rules requiring the latest best available retrofit control technology for all criteria pollutants for which an area has not achieved attainment of California AAQS; and provide uniform, statewide reporting of emissions inventories. Air districts are required to adopt a community emissions reduction program to achieve reductions for the communities impacted by air pollution that CARB identifies.

## **Existing Conditions**

### **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 (South Coast AQMD 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 with temperature data is the Anaheim, California Monitoring Station (ID No. 040192). The lowest average temperature is reported at 46.9°F in December, and the highest average temperature is 87.1°F in August (WRCC 2023).

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 14.09 inches per year in the vicinity of the area (WRCC 2023).

#### *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 (South Coast AQMD 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 (South Coast AQMD 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 (South Coast AQMD 2005).

## **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, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*.

**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 <sub>10</sub>	Serious Nonattainment	Attainment
PM <sub>2.5</sub>	Nonattainment	Nonattainment <sup>2</sup>
CO	Attainment	Attainment
NO <sub>2</sub>	Nonattainment (SR-60 Near Road only) <sup>1</sup>	Attainment/Maintenance
SO <sub>2</sub>	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only) <sup>3</sup>
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2023c.

- 1 On February 21, 2019, CARB’s Board approved the separation of the area that runs along State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for State nonattainment designation purposes. The Board designated this corridor as nonattainment. The remainder of the SoCAB remains in attainment for NO<sub>2</sub> (CARB 2019a). CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for NO<sub>2</sub> at the February 24, 2022 Board Hearing (CARB 2023c).
- 2 The SoCAB is pending a resignation request from nonattainment to attainment for the 24-hour federal PM<sub>2.5</sub> standards. The 2021 PM<sub>2.5</sub> Redesignation Request and Maintenance Plan demonstrates that the South Coast meets the requirements of the CAA to allow US EPA to redesignate the SoCAB to attainment for the 65 µg/m<sup>3</sup> and 35 µg/m<sup>3</sup> 24-hour PM<sub>2.5</sub> standards. CARB will submit the 2021 PM<sub>2.5</sub> Redesignation Request to the US EPA as a revision to the California SIP (CARB 2021).
- 3 In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new 2008 federal 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 South Coast AQMD. The project site is located within Source Receptor Area (SRA) 16: North Orange County. The air quality monitoring station closest to the proposed project is the Anaheim – Pampas Lane Monitoring Station, which is one of 31 monitoring stations South Coast AQMD operates and maintains within the SoCAB.<sup>7</sup> Data from this station includes O<sub>3</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> and is summarized in Table 3, *Ambient Air Quality Monitoring Summary*. The data show regular violations of the state and federal O<sub>3</sub>, state PM<sub>10</sub>, and federal PM<sub>2.5</sub> standards in the last five years.

<sup>7</sup> Locations of the SRAs and monitoring stations are shown here: <http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf>.

**Table 3 Ambient Air Quality Monitoring Summary**

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations <sup>1,2</sup>				
	2017	2018	2019	2020	2021
<b>Ozone (O<sub>3</sub>)</b>					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	4	1	6	0
State & Federal 8-hour ≥ 0.070 ppm (days exceed threshold)	4	1	1	15	0
Max. 1-Hour Conc. (ppm)	0.090	0.112	0.096	0.142	0.089
Max. 8-Hour Conc. (ppm)	0.076	0.071	0.082	0.097	0.068
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppb)	0.0812	0.0660	0.0594	0.0709	0.0671
<b>Coarse Particulates (PM<sub>10</sub>)</b>					
State 24-Hour > 50 µg/m <sup>3</sup> (days exceed threshold)	5	2	4	5	1
Federal 24-Hour > 150 µg/m <sup>3</sup> (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m <sup>3</sup> )	95.7	94.6	127.1	74.5	63.3
<b>Fine Particulates (PM<sub>2.5</sub>)</b>					
Federal 24-Hour > 35 µg/m <sup>3</sup> (days exceed threshold)	8	7	4	12	10
Max. 24-Hour Conc. (µg/m <sup>3</sup> )	53.9	63.1	36.1	60.2	54.4

Source: CARB 2023xx.  
 Notes: ppm = parts per million; ppb = parts per billion; µg/m<sup>3</sup> = micrograms per cubic meter; \* = Data not available  
<sup>1</sup> Data obtained from the Anaheim – Pampas Lane Monitoring Station.  
<sup>2</sup> Most recent data available as of February 2023.

## MULTIPLE AIR TOXICS EXPOSURE STUDY V

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on existing ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In April 2021, South Coast AQMD released the latest update to the MATES study, MATES V. The first MATES analysis, MATES I, began in 1986 but was limited because of the technology available at the time. Conducted in 1998, MATES II was the first MATES iteration to include a comprehensive monitoring program, an air toxics emissions inventory, and a modeling component. MATES III was conducted in 2004 to 2006, with MATES IV following in 2012 to 2013.

MATES V uses measurements taken during 2018 and 2019, with a comprehensive modeling analysis and emissions inventory based on 2018 data. The previous MATES studies quantified the cancer risks based on the inhalation pathway only. MATES V includes information on the chronic noncancer risks from inhalation and non-inhalation pathways for the first time. Cancer risks and chronic noncancer risks from MATES II through IV measurements have been re-examined using current Office of Environmental Health Hazards Assessment (OEHHA) and CalEPA risk assessment methodologies and modern statistical methods to examine the trends over time.

The MATES V study showed that cancer risk in the SoCAB decreased to 454 in a million from 997 in a million in the MATES IV study. Overall, air toxics cancer risk in the SoCAB decreased by 54 percent since 2012 when MATES IV was conducted. MATES V showed the highest risk locations near the Los Angeles International Airport and the Ports of Long Beach and Los Angeles. Diesel particulate matter continues to be

the major contributor to air toxics cancer risk (approximately 72 percent of the total cancer risk). Goods movement and transportation corridors have the highest cancer risk. Transportation sources account for 88 percent of carcinogenic air toxics emissions, and the remainder is from stationary sources, which include large industrial operations such as refineries and power plants as well as smaller businesses such as gas stations and chrome-plating facilities. (South Coast AQMD 2021a).

## **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 offsite sensitive receptors are the single- and multi-family residences along West Arlington Avenue to the north, West Brewster Avenue to the east, West Romney Drive to the south, and North Lombard Drive to the west of the project site.

## **Thresholds of Significance**

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in South Coast AQMD's *CEQA Air Quality Handbook* and the significance thresholds on South Coast AQMD's website (South Coast AQMD 1993). 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. South Coast AQMD 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 through an analysis of localized CO impacts and localized significance thresholds (LSTs).

## **REGIONAL SIGNIFICANCE THRESHOLDS**

The South Coast AQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 4, *South Coast AQMD Significance Thresholds*, lists South Coast AQMD'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, South Coast AQMD has not developed thresholds for them.

**Table 4 South Coast AQMD 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 <sub>x</sub> )	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO <sub>x</sub> )	150 lbs/day	150 lbs/day
Particulates (PM <sub>10</sub> )	150 lbs/day	150 lbs/day
Particulates (PM <sub>2.5</sub> )	55 lbs/day	55 lbs/day

Source: South Coast AQMD 2019.

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<sub>2.5</sub>, TACs)
- Aggravates respiratory disease (O<sub>3</sub>, PM<sub>2.5</sub>)
- Increases bronchitis (O<sub>3</sub>, PM<sub>2.5</sub>)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O<sub>3</sub>)
- Reduces resistance to infections and increases fatigue (O<sub>3</sub>)
- Reduces lung growth in children (PM<sub>2.5</sub>)
- Contributes to heart disease and heart attacks (PM<sub>2.5</sub>)
- Contributes to premature death (O<sub>3</sub>, PM<sub>2.5</sub>)
- Linked to lower birth weight in newborns (PM<sub>2.5</sub>) (South Coast AQMD 2015a)

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<sub>2.5</sub> 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 (South Coast AQMD 2015b).

South Coast AQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, South Coast AQMD prepares an AQMP that details regional programs to attain the AAQS. Mass emissions thresholds shown in Table 4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. These thresholds are based on the trigger levels for the federal



New Source Review Program, which was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed previously. Projects that do not exceed the South Coast AQMD regional significance thresholds in Table 4 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions levels presented in Table 4, then those emissions would cumulatively contribute to the nonattainment status of the air basin and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 4, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment, because mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited previously.

South Coast AQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health to address the issue raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978. South Coast AQMD currently does not have methodologies that would provide the District with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a Proposed Project's mass emissions.<sup>8</sup> Ozone concentrations are dependent on a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National and California AAQS, and the absence of modeling tools that could provide statistically valid data and meaningful additional information regarding health effects from criteria air pollutants generated by individual projects, it is not possible to link specific health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the SoCAB exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until the attainment standards are met in the SoCAB.

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<sup>8</sup> In April 2019, the Sacramento Metropolitan Air Quality Management District (SMAQMD) published an Interim Recommendation on implementing *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502 (“Friant Ranch”) in the review and analysis of proposed projects under CEQA in Sacramento County. Consistent with the expert opinions submitted to the court in Friant Ranch by the San Joaquin Valley Air Pollution Control District (SJVAPCD) and South Coast AQMD, the SMAQMD guidance confirms the absence of an acceptable or reliable quantitative methodology that would correlate the expected criteria air pollutant emissions of projects to likely health consequences for people from project-generated criteria air pollutant emissions. The SMAQMD guidance explains that while it is in the process of developing a methodology to assess these impacts, lead agencies should follow the Friant Court’s advice to explain in meaningful detail why this analysis is not yet feasible. Since this interim memorandum SMAQMD has provided methodology to address health impacts. However, a similar analysis is not available for projects within the South Coast AQMD region.

## 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 hotspot analysis conducted for the attainment by the South Coast AQMD for busiest intersections in Los Angeles during the peak morning and afternoon periods plan did not predict a violation of CO standards.<sup>9</sup> As identified in the South Coast AQMD'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 to 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

The South Coast AQMD developed LSTs for emissions of NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> 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, *South Coast AQMD Localized Significance Thresholds*.

**Table 5 South Coast AQMD 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 <sub>2</sub> Standard (CAAQS)	0.18 ppm
Annual NO <sub>2</sub> Standard (CAAQS)	0.03 ppm
24-Hour PM <sub>10</sub> Standard – Construction (South Coast AQMD) <sup>1</sup>	10.4 µg/m <sup>3</sup>
24-Hour PM <sub>2.5</sub> Standard – Construction (South Coast AQMD) <sup>1</sup>	10.4 µg/m <sup>3</sup>
24-Hour PM <sub>10</sub> Standard – Operation (South Coast AQMD) <sup>1</sup>	2.5 µg/m <sup>3</sup>

<sup>9</sup> 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.

24-Hour PM <sub>2.5</sub> Standard – Operation (South Coast AQMD) <sup>1</sup>	2.5 µg/m <sup>3</sup>
Source: South Coast AQMD 2019.	
ppm – parts per million; µg/m <sup>3</sup> – micrograms per cubic meter	
<sup>1</sup> Threshold is based on South Coast AQMD Rule 403. Since the SoCAB is in nonattainment for PM <sub>10</sub> and PM <sub>2.5</sub> , the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.	

To assist lead agencies, South Coast AQMD 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 South Coast AQMD’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 16 are shown in Table 6, *South Coast AQMD Screening-Level Localized Significance Thresholds*, for sensitive receptors within 82 feet (25 meters) of the project site.

**Table 6 South Coast AQMD Screening-Level Localized Significance Thresholds**

Acreage Disturbed	Threshold (lbs/day) <sup>1</sup>			
	Nitrogen Oxides (NO <sub>x</sub> )	Carbon Monoxide (CO)	Coarse Particulates (PM <sub>10</sub> )	Fine Particulates (PM <sub>2.5</sub> )
≤1.00 Acre Disturbed Per Day	103	522	4.00	3.00
1.31 Acres Disturbed Per Day	<b>117</b>	<b>597</b>	<b>4.62</b>	<b>3.31</b>
1.50 Acres Disturbed Per Day	125	642	5.00	3.50
1.81 Acres Disturbed Per Day	139	717	5.62	3.81
2.50 Acres Disturbed Per Day	159	853	6.83	4.33
4.31 Acres Disturbed Per Day	159	853	6.83	4.33

Source: South Coast AQMD 2008 and 2011.

<sup>1</sup> LSTs are based on sensitive receptors within 82 feet (25 meters) of the project site in Source Receptor Area (SRA) 16.

## HEALTH RISK

Whenever a project would require use of chemical compounds that have been identified in South Coast AQMD Rule 1401, placed on CARB’s air toxics list pursuant to AB 1807, or placed on the EPA’s National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the South Coast AQMD. Table 7, *South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk thresholds for operation of a project. The type of land uses that typically generate substantial quantities of criteria air pollutants and TACs from operations include industrial (stationary sources) and warehousing (truck idling) land uses (CARB 2005). School uses do not use substantial quantities of TACs, thus these thresholds are typically applied to new industrial projects only. Additionally, the purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478)).

**Table 7 South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds**

Maximum Incremental Cancer Risk	≥ 10 in 1 million
Hazard Index (project increment)	≥ 1.0
Cancer Burden in areas ≥ 1 in 1 million	> 0.5 excess cancer cases
Source: South Coast AQMD 2019.	

## 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,<sup>10</sup> carbon (CO<sub>2</sub>), methane (CH<sub>4</sub>), and ozone (O<sub>3</sub>)—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<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).<sup>11</sup> The major GHG are briefly described below.

- **Carbon dioxide (CO<sub>2</sub>)** 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<sub>4</sub>)** 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<sub>2</sub>O)** 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

<sup>10</sup> Water vapor (H<sub>2</sub>O) 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 rather than a primary cause of change.

<sup>11</sup> 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 2017a). 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.

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-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<sub>4</sub>] and perfluoroethane [C<sub>2</sub>F<sub>6</sub>]) 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<sub>6</sub>)** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF<sub>6</sub> 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 2022).

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 8, *GHG Emissions and Their Relative Global Warming Potential Compared to CO<sub>2</sub>*. The GWP is used to convert GHGs to CO<sub>2</sub>-equivalence (CO<sub>2</sub>e) 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<sub>4</sub>, a project that generates 10 MT of CH<sub>4</sub> would be equivalent to 250 MT of CO<sub>2</sub>.<sup>12</sup>

**Table 8 GHG Emissions and Their Relative Global Warming Potential Compared to CO<sub>2</sub>**

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO <sub>2</sub> <sup>1</sup>	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO <sub>2</sub> <sup>1</sup>	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO <sub>2</sub> <sup>1</sup>
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<sup>12</sup> The global warming potential of a GHG is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

**Table 8 GHG Emissions and Their Relative Global Warming Potential Compared to CO<sub>2</sub>**

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO <sub>2</sub> <sup>1</sup>	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO <sub>2</sub> <sup>1</sup>	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO <sub>2</sub> <sup>1</sup>
Carbon Dioxide (CO <sub>2</sub> )	1	1	1
Methane <sup>2</sup> (CH <sub>4</sub> )	21	25	28
Nitrous Oxide (N <sub>2</sub> O)	310	298	265

Source: IPCC 1995, 2007, 2013.

Notes: The IPCC published updated GWP values in its Fifth Assessment Report (AR5) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO<sub>2</sub>. However, GWP values identified in AR4 are used by South Coast AQMD to maintain consistency in statewide GHG emissions modeling. In addition, the 2017 Scoping Plan Update was based on the GWP values in AR4.

<sup>1</sup> Based on 100-year time horizon of the GWP of the air pollutant compared to CO<sub>2</sub>.

<sup>2</sup> 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<sub>2</sub> is not included.

## GHG Regulatory Setting

### REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The US 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<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, hydrofluorocarbons, perfluorocarbons, and SF<sub>6</sub>—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 AQMD 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<sub>2</sub> per year are required to submit an annual report.

### Update to Corporate Average Fuel Economy Standards (2021 to 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. On March 30, 2020, the EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026. Under SAFE, the fuel economy

standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 MPG for model year 2026 vehicles (85 Federal Register 24174 (April 30, 2020)).

On December 21, 2021, under direction of Executive Order (EO) 13990 issued by President Biden, the National Highway Traffic Safety Administration repealed Safer Affordable Fuel Efficient Vehicles Rule Part One, which had preempted state and local laws related to fuel economy standards. In addition, on March 31, 2022, the National Highway Traffic Safety Administration finalized new fuel standards in response to EO 13990. Fuel efficiency under the standards proposed will increase 8 percent annually for model years 2024 to 2025 and 10 percent annual for model year 2026. Overall, the new CAFE standards require a fleet average of 49 MPG for passenger vehicles and light trucks for model year 2026, which would be a 10 MPG increase relative to model year 2021 (NHTSA 2022).

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

Pursuant to its authority under the Clean Air Act, the EPA has developed regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule, which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump's Energy Independence EO. It officially rescinded the Clean Power Plan rule issued during the Obama Administration and set emissions guidelines for states in developing plans to limit CO<sub>2</sub> emissions from coal-fired power plants. The Affordable Clean Energy rule was vacated by the United States Court of Appeals for the District of Columbia Circuit on January 19, 2021. The Biden Administration is assessing options on potential future regulations.

### **REGULATION OF GHG EMISSIONS ON A STATE LEVEL**

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in EO S-03-05 and EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), and 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)**

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 EO S-03-05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions reduction targets of AB 32.

### **Executive Order B-30-15**

EO B-30-15, signed April 29, 2015, set a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directed 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 EO S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaptation 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.

### **Executive Order B-55-18**

Executive Order B-55-18, signed September 10, 2018, set a goal “to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.” Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning that not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO<sub>2</sub>e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

### **Assembly Bill 1279**

AB 1279, signed by Governor Newsom in September 2022, codified the carbon neutrality targets of EO B-55-18 for year 2045 and sets a new legislative target for year 2045 of 85 percent below 1990 levels for anthropogenic GHG emissions. SB 1279 also requires CARB to update the Scoping Plan to address these new targets.

### ***Draft 2022 Climate Change Scoping Plan***

CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 15, 2022, which lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the State’s anthropogenic GHG emissions (CARB 2022). The Scoping Plan provides updates to the previously adopted 2017 Scoping Plan and addresses the carbon neutrality goals of EO B-55-18 (discussed below) and the ambitious GHG reduction target as directed by AB 1279. Previous Scoping Plans focused on specific GHG reduction targets for our industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. The 2022 Scoping Plan updates the target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. Carbon neutrality takes it one



step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time.

The path forward was informed by the recent Sixth Assessment Report (AR6) of the IPCC and the measures would achieve 85 percent below 1990 levels by 2045 in accordance AB 1279. CARB’s 2022 Scoping Plan identifies strategies as shown in Table 11, *Priority Strategies for Local Government Climate Action Plans*, that would be most impactful at the local level for ensuring substantial process towards the State’s carbon neutrality goals.

**Table 11 Priority Strategies for Local Government Climate Action Plans**

Priority Area	Priority Strategies
Transportation Electrification	Convert local government fleets to zero-emission vehicles (ZEV) and provide EV charging at public sites.
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans).
VMT Reduction	Reduce or eliminate minimum parking standards.
	Implement Complete Streets policies and investments, consistent with general plan circulation element requirements.
	Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, etc.
	Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking
	Implement parking pricing or transportation demand management pricing strategies.
	Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing allowable density of the neighborhood).
Building Decarbonization	Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert “greenfield” land to urban uses (e.g., green belts, strategic conservation easements)
	Adopt all-electric new construction reach codes for residential and commercial uses.
	Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers).
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings such as appliance rebates, existing building reach codes, or time of sale electrification ordinances .
	Facilitate deployment of renewable energy production and distribution and energy storage on privately owned land uses (e.g., permit streamlining, information sharing) .
Deploy renewable energy production and energy storage directly in new public projects and on existing public facilities (e.g., solar photovoltaic systems on rooftops of municipal buildings and on canopies in public parking lots, battery storage systems in municipal buildings) .	

Source: CARB 2022

Based on Appendix D of the 2022 CARB Climate Change Scoping Plan, for residential and mixed-use development projects, CARB recommends first demonstrating that these land use development projects are aligned with State climate goals based on the attributes of land use development that reduce operational

GHG emissions while simultaneously advancing fair housing. Attributes that accommodate growth in a manner consistent with the GHG and equity goals of SB 32 have all the following attributes:

- **Transportation Electrification**
  - Provide EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standards in the California Green Building Standards Code at the time of project approval.
- **VMT Reduction**
  - Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer).
  - Does not result in the loss or conversion of the State’s natural and working lands;
  - Consists of transit-supportive densities (minimum of 20 residential dwelling units/acre), or is in proximity to existing transit stops (within a half mile), or satisfies more detailed and stringent criteria specified in the region’s Sustainable Communities Strategy (SCS);
  - Reduces parking requirements by:
    - Eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet); or
    - Providing residential parking supply at a ratio of <1 parking space per dwelling unit; or
    - For multifamily residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit.
  - At least 20 percent of the units are affordable to lower-income residents;
  - Result in no net loss of existing affordable units.
- **Building Decarbonization**
  - Use all electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking (CARB 2022).

If the first approach to demonstrating consistency is not applicable (such as in the case of this school modernization project), the second approach to project-level alignment with state climate goals is to achieve net zero GHG emissions. The third approach to demonstrating project-level alignment with state climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022).

### **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 (MPO). 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 is 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<sub>2e</sub> of reductions by 2020 and 15 MMTCO<sub>2e</sub> 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. CARB adopted revised SB 375 targets for the MPOs in March 2018. The updated targets became effective in October 2018. All SCSs adopted after October 1, 2018, are subject to these new targets. CARB's updated SB 375 targets for the SCAG region were 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 2018).

The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), 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" reductions 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 to achieve the SB 375 targets. CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies (CARB 2018).

### *SCAG's Regional Transportation Plan / Sustainable Communities Strategy*

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan. For the SCAG region, the 2020-2045 RTP/SCS (Connect SoCal) was adopted on September 3, 2020, and is an update to the 2016-2040 RTP/SCS. In general, the SCS outlines a development pattern for the region that,

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.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land use strategies in development of the SCAG region through horizon year 2045 (SCAG 2020). Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. Additionally, Connect SoCal also forecasts that implementation of the plan will reduce VMT per capita in year 2045 by 4.1 percent compared to baseline conditions for that year. Connect SoCal includes a “Core Vision” that centers on maintaining and better managing the transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit closer together and increasing investments in transit and complete streets (SCAG 2020).

## **Transportation Sector Specific Regulations**

### *Assembly Bill 1493*

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles. (See also the discussion on the update to the Corporate Average Fuel Economy standards at the beginning of this Section 5.5.2 under “Federal.”) 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 GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California’s Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG emissions and 75 percent less 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 CO<sub>2</sub>e gram per unit of fuel energy sold in California. The LCFS required 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 uses market-based mechanisms to allow these providers to choose how they reduce emissions during the “fuel cycle” using the most economically feasible methods.

### *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 ZE vehicles in major

metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE 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 ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions to 80 percent below 1990 levels.

### *Executive Order N-79-20*

On September 23, 2020, Governor Newsom signed Executive Order N-79-20, whose goal is that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The Executive Order's goal for the State is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.

## **Renewables Portfolio: Carbon Neutrality Regulations**

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

A major component of California's Renewable Energy Program is the renewables portfolio standard 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, signed in November 2008, 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 September 2015 and establishes tiered increases to the RPS—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.

### *Senate Bill 100*

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

## *Senate Bill 1020*

Senate Bill 1020 was signed into law on September 16, 2022. It requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent by 2040. Additionally, SB 1020 requires all state agencies to procure 100 percent of electricity from renewable energy and zero-carbon resources by 2035.

## **Energy Efficiency Regulations**

### *California Building Code: Building Energy Efficiency Standards*

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (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 August 11, 2021, the CEC adopted the 2022 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission in December 2021. The 2022 standards went into effect on January 1, 2023, replacing the existing 2019 standards. The 2022 standards would require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2021).

### *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.<sup>13</sup> The mandatory provisions of CALGreen became effective January 1, 2011. In 2021, the CEC approved the 2022 CALGreen, which went into effect on January 1, 2023, replacing the existing 2019 standards.

### *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.

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<sup>13</sup> The green building standards became mandatory in the 2010 edition of the code.

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 Diversion Regulations*

#### ***AB 939: Integrated Waste Management Act of 1989***

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***

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. Section 5.408 of 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.

#### ***AB 1327***

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.

#### ***AB 1826***

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 and multifamily residential dwellings with 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 with food waste.

### *Water Efficiency Regulations*

#### ***SBX7-7***

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 required 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.

***AB 1881: Water Conservation in Landscaping Act***

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an 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.

***Short-Lived Climate Pollutant Reduction Strategy***

***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<sub>4</sub>. Black carbon is the light-absorbing component of fine particulate matter produced during the incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a 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. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the 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 2017a). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. South Coast AQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these charbroilers by over 80 percent (CARB 2017a). Additionally, South Coast AQMD Rule 445 limits installation of new fireplaces in the South Coast Air Basin.

## **Existing Conditions**

### **CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION**

In 2021, the statewide GHG emissions inventory was updated for 2000 to 2019 emissions using the GWPs in IPCC's AR4 (IPCC 2013). Based on these GWPs, California produced 418.2 MMTCO<sub>2e</sub> GHG emissions in 2019. California's transportation sector was the single largest generator of GHG emissions, producing 39.7 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (10.5 percent), agriculture and forestry (7.6 percent), high GWP (4.9 percent), and recycling and waste (2.1 percent) (CARB 2021).



Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2016, California statewide GHG emissions dropped below the AB 32 target for year 2020 of 431 MMTCO<sub>2e</sub> and have remained below this target since then. In 2019, emissions from routine GHG-emitting activities statewide were almost 13 MMTCO<sub>2e</sub> lower than the AB 32 target for year 2020. Per-capita GHG emissions in California have dropped from a 2001 peak of 14.0 MTCO<sub>2e</sub> per person to 10.5 MTCO<sub>2e</sub> per person in 2019, a 25 percent decrease.

Transportation emissions continued to decline in 2019 statewide as they had done in 2018, with even more substantial reductions due to a significant increase in renewable diesel. Since 2008, California's electricity sector has followed an overall downward trend in emissions. In 2019, solar power generation continued its rapid growth since 2013. Emissions from high-GWP gases comprised 4.9 percent of California's emissions in 2019. This continues the increasing trend as the gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. 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) has declined 45 percent since the 2001 peak, though the state's gross domestic product grew 63 percent during this period (CARB 2021).

## 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.<sup>14</sup>

## SOUTH COAST AQMD WORKING GROUP

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, South Coast AQMD convened a GHG CEQA Significance Threshold Working Group (Working Group). The South Coast AQMD Working Group (Meeting No. 15) identified a tiered approach for evaluating GHG emissions for development projects where South Coast AQMD is not the lead agency (South Coast AQMD 2010):

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<sup>14</sup> 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.

- **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.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, South Coast AQMD requires an assessment of GHG emissions. The South Coast AQMD Working Group identified a screening-level threshold of 3,000 MTCO<sub>2e</sub> annually for all land use types or the following land-use-specific thresholds: 1,400 MTCO<sub>2e</sub> for commercial projects, 3,500 MTCO<sub>2e</sub> for residential projects, or 3,000 MTCO<sub>2e</sub> 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 South Coast AQMD Working Group has identified an efficiency target for projects that exceed the screening threshold of 4.8 MTCO<sub>2e</sub> per year per service population (MTCO<sub>2e</sub>/year/SP) for project-level analyses and 6.6 MTCO<sub>2e</sub>/year/SP for plan level projects (e.g., program-level projects such as general plans) for the year 2020.<sup>15</sup> 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.

The bright-line screening-level criterion of 3,000 MTCO<sub>2e</sub>/yr is used as the significance threshold for this project. Therefore, if the project operation-phase emissions exceed the 3,000 MTCO<sub>2e</sub>/yr threshold, GHG emissions would be considered potentially significant in the absence of mitigation measures.

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<sup>15</sup> It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.

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# Emissions Worksheet

## Regional Construction Emissions Worksheet:

### 3.1. Building and Asphalt Demolition (2024)

		ROG	NOx	CO	SO <sub>2</sub>	PM10 Total	PM2.5Total
Onsite		<b>Summer</b>					
	Off-Road Equipment	2.62	24.90	21.70	0.03	1.06	0.98
	Demolition	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>2.62</b>	<b>24.90</b>	<b>21.70</b>	<b>0.03</b>	<b>1.06</b>	<b>0.98</b>
Offsite							
	Worker	0.06	0.06	0.90	0.00	0.20	0.05
	Vendor	0.01	0.21	0.10	0.01	0.05	0.02
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.07</b>	<b>0.27</b>	<b>1.00</b>	<b>0.01</b>	<b>0.25</b>	<b>0.07</b>
<b>TOTAL</b>		<b>2.69</b>	<b>25.17</b>	<b>22.70</b>	<b>0.04</b>	<b>1.31</b>	<b>1.05</b>
Onsite		<b>Winter</b>					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite							
	Worker	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
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite							
	Off-Road	2.62	24.90	21.70	0.03	1.06	0.98
	Demolition	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>2.62</b>	<b>24.90</b>	<b>21.70</b>	<b>0.03</b>	<b>1.06</b>	<b>0.98</b>
Offsite							
	Worker	0.06	0.06	0.90	0.00	0.20	0.05
	Vendor	0.01	0.21	0.10	0.01	0.05	0.02
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.07</b>	<b>0.27</b>	<b>1.00</b>	<b>0.01</b>	<b>0.25</b>	<b>0.07</b>
<b>TOTAL</b>		<b>2.69</b>	<b>25.17</b>	<b>22.70</b>	<b>0.04</b>	<b>1.31</b>	<b>1.05</b>

### 3.3. Building Demolition Debris Hauling (2024)

		ROG	NOx	CO	SO <sub>2</sub>	PM10 Total	PM2.5Total
Onsite		<b>Summer</b>					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	1.49	0.23
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>
Offsite							
	Worker	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
	Hauling	0.04	2.46	1.07	0.01	0.53	0.17
	<b>Total</b>	<b>0.04</b>	<b>2.46</b>	<b>1.07</b>	<b>0.01</b>	<b>0.53</b>	<b>0.17</b>
<b>TOTAL</b>		<b>0.04</b>	<b>2.46</b>	<b>1.07</b>	<b>0.01</b>	<b>2.02</b>	<b>0.40</b>
Onsite		<b>Winter</b>					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite							
	Worker	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
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>



Onsite	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	1.49	0.23
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>
Offsite	Worker	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
	Hauling	0.04	2.46	1.07	0.01	0.53	0.17
	<b>Total</b>	<b>0.04</b>	<b>2.46</b>	<b>1.07</b>	<b>0.01</b>	<b>0.53</b>	<b>0.17</b>
<b>TOTAL</b>	<b>0.04</b>	<b>2.46</b>	<b>1.07</b>	<b>0.01</b>	<b>2.02</b>	<b>0.40</b>	

### 3.5. Asphalt Demolition Debris Haul (2024)

		ROG	NOx	CO	SO <sub>2</sub>	PM10 Total	PM2.5Total
Onsite	<b>Summer</b>						
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	1.55	0.24
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>
Offsite	Worker	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
	Hauling	0.02	1.06	0.46	0.01	0.23	0.07
	<b>Total</b>	<b>0.02</b>	<b>1.06</b>	<b>0.46</b>	<b>0.01</b>	<b>0.23</b>	<b>0.07</b>
<b>TOTAL</b>	<b>0.02</b>	<b>1.06</b>	<b>0.46</b>	<b>0.01</b>	<b>1.78</b>	<b>0.31</b>	
Onsite	<b>Winter</b>						
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite	Worker	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
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
Onsite	Off-Road	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00	1.55	0.24
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>
Offsite	Worker	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
	Hauling	0.02	1.06	0.46	0.01	0.23	0.07
	<b>Total</b>	<b>0.02</b>	<b>1.06</b>	<b>0.46</b>	<b>0.01</b>	<b>0.23</b>	<b>0.07</b>
<b>TOTAL</b>	<b>0.02</b>	<b>1.06</b>	<b>0.46</b>	<b>0.01</b>	<b>1.78</b>	<b>0.31</b>	

### 3.7. Site Preparation (2024)

		ROG	NOx	CO	SO <sub>2</sub>	PM10 Total	PM2.5Total
Onsite	<b>Summer</b>						
	Off-Road Equipment	1.19	11.20	10.10	0.02	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.19</b>	<b>11.20</b>	<b>10.10</b>	<b>0.02</b>	<b>0.86</b>	<b>0.45</b>
Offsite	Worker	0.04	0.04	0.60	0.00	0.13	0.03
	Vendor	0.01	0.28	0.14	0.01	0.07	0.02
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.05</b>	<b>0.32</b>	<b>0.74</b>	<b>0.01</b>	<b>0.20</b>	<b>0.05</b>
<b>TOTAL</b>	<b>1.24</b>	<b>11.52</b>	<b>10.84</b>	<b>0.03</b>	<b>1.06</b>	<b>0.50</b>	

Onsite		<b>Winter</b>					
	Off-Road Equipment	1.19	11.20	10.10	0.02	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.19</b>	<b>11.20</b>	<b>10.10</b>	<b>0.02</b>	<b>0.86</b>	<b>0.45</b>
Offsite							
	Worker	0.04	0.04	0.52	0.00	0.13	0.03
	Vendor	0.01	0.29	0.14	0.01	0.07	0.02
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.05</b>	<b>0.33</b>	<b>0.66</b>	<b>0.01</b>	<b>0.20</b>	<b>0.05</b>
<b>TOTAL</b>		<b>1.24</b>	<b>11.53</b>	<b>10.76</b>	<b>0.03</b>	<b>1.06</b>	<b>0.50</b>
Onsite							
	Off-Road Equipment	1.19	11.20	10.10	0.02	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.19</b>	<b>11.20</b>	<b>10.10</b>	<b>0.02</b>	<b>0.86</b>	<b>0.45</b>
Offsite							
	Worker	0.04	0.04	0.60	0.00	0.13	0.03
	Vendor	0.01	0.29	0.14	0.01	0.07	0.02
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.05</b>	<b>0.33</b>	<b>0.74</b>	<b>0.01</b>	<b>0.20</b>	<b>0.05</b>
<b>TOTAL</b>		<b>1.24</b>	<b>11.53</b>	<b>10.84</b>	<b>0.03</b>	<b>1.06</b>	<b>0.50</b>

### 3.9. Rough Grading (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		<b>Summer</b>					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Dust From Material Movement	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite							
	Worker	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
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite		<b>Winter</b>					
	Off-Road Equipment	1.90	18.20	18.80	0.03	0.84	0.77
	Dust From Material Movement	0.00	0.00	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.90</b>	<b>18.20</b>	<b>18.80</b>	<b>0.03</b>	<b>3.60</b>	<b>2.11</b>
Offsite							
	Worker	0.06	0.07	0.78	0.00	0.20	0.05
	Vendor	0.01	0.50	0.25	0.01	0.13	0.04
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.07</b>	<b>0.57</b>	<b>1.03</b>	<b>0.01</b>	<b>0.33</b>	<b>0.09</b>
<b>TOTAL</b>		<b>1.97</b>	<b>18.77</b>	<b>19.83</b>	<b>0.04</b>	<b>3.93</b>	<b>2.20</b>
Onsite							
	Off-Road Equipment	1.90	18.20	18.80	0.03	0.84	0.77
	Dust From Material Movement	0.00	0.00	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.90</b>	<b>18.20</b>	<b>18.80</b>	<b>0.03</b>	<b>3.60</b>	<b>2.11</b>
Offsite							
	Hauling	0.06	0.07	0.78	0.00	0.20	0.05
	Vendor	0.01	0.50	0.25	0.01	0.13	0.04
	Worker	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.07</b>	<b>0.57</b>	<b>1.03</b>	<b>0.01</b>	<b>0.33</b>	<b>0.09</b>
<b>TOTAL</b>		<b>1.97</b>	<b>18.77</b>	<b>19.83</b>	<b>0.04</b>	<b>3.93</b>	<b>2.20</b>

### 3.11. Rough Grading (2025)

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
<b>Summer</b>						
Onsite						
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Dust From Material Movement	0.00	0.00	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite						
Worker	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
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Winter</b>						
Onsite						
Off-Road Equipment	1.74	16.30	17.90	0.03	0.72	0.66
Dust From Material Movement	0.00	0.00	0.00	0.00	2.76	1.34
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>1.74</b>	<b>16.30</b>	<b>17.90</b>	<b>0.03</b>	<b>3.48</b>	<b>2.00</b>
Offsite						
Worker	0.05	0.06	0.73	0.00	0.20	0.05
Vendor	0.01	0.48	0.24	0.01	0.12	0.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>0.06</b>	<b>0.54</b>	<b>0.97</b>	<b>0.01</b>	<b>0.32</b>	<b>0.09</b>
<b>TOTAL</b>	<b>1.80</b>	<b>16.84</b>	<b>18.87</b>	<b>0.04</b>	<b>3.80</b>	<b>2.09</b>
<b>Winter</b>						
Onsite						
Off-Road Equipment	1.74	16.30	17.90	0.03	0.72	0.66
Dust From Material Movement	0.00	0.00	0.00	0.00	2.76	1.34
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>1.74</b>	<b>16.30</b>	<b>17.90</b>	<b>0.03</b>	<b>3.48</b>	<b>2.00</b>
Offsite						
Worker	0.05	0.06	0.73	0.00	0.20	0.05
Vendor	0.01	0.48	0.24	0.01	0.12	0.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>0.06</b>	<b>0.54</b>	<b>0.97</b>	<b>0.01</b>	<b>0.32</b>	<b>0.09</b>
<b>TOTAL</b>	<b>1.80</b>	<b>16.84</b>	<b>18.87</b>	<b>0.04</b>	<b>3.80</b>	<b>2.09</b>

### 3.13. Fine Grading (2025)

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
<b>Summer</b>						
Onsite						
Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Dust From Material Movement	0.00	0.00	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite						
Worker	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
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Winter</b>						
Onsite						
Off-Road Equipment	1.74	16.30	17.90	0.03	0.72	0.66
Dust From Material Movement	0.00	0.00	0.00	0.00	2.76	1.34
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>1.74</b>	<b>16.30</b>	<b>17.90</b>	<b>0.03</b>	<b>3.48</b>	<b>2.00</b>
Offsite						
Worker	0.05	0.06	0.73	0.00	0.20	0.05
Vendor	0.01	0.48	0.24	0.01	0.12	0.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>0.06</b>	<b>0.54</b>	<b>0.97</b>	<b>0.01</b>	<b>0.32</b>	<b>0.09</b>
<b>TOTAL</b>	<b>1.80</b>	<b>16.84</b>	<b>18.87</b>	<b>0.04</b>	<b>3.80</b>	<b>2.09</b>

Onsite	Off-Road Equipment	1.74	16.30	17.90	0.03	0.72	0.66
	Dust From Material Movement	0.00	0.00	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.74</b>	<b>16.30</b>	<b>17.90</b>	<b>0.03</b>	<b>3.48</b>	<b>2.00</b>
Offsite	Worker	0.05	0.06	0.73	0.00	0.20	0.05
	Vendor	0.01	0.48	0.24	0.01	0.12	0.04
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.06</b>	<b>0.54</b>	<b>0.97</b>	<b>0.01</b>	<b>0.32</b>	<b>0.09</b>
<b>TOTAL</b>		<b>1.80</b>	<b>16.84</b>	<b>18.87</b>	<b>0.04</b>	<b>3.80</b>	<b>2.09</b>

### 3.15. Building Construction (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		<b>Summer</b>					
	Off-Road Equipment	1.13	10.40	13.00	0.02	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.13</b>	<b>10.40</b>	<b>13.00</b>	<b>0.02</b>	<b>0.43</b>	<b>0.40</b>
Offsite	Worker	0.18	0.17	2.80	0.00	0.65	0.15
	Vendor	0.02	0.65	0.32	0.01	0.17	0.05
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.20</b>	<b>0.82</b>	<b>3.12</b>	<b>0.01</b>	<b>0.82</b>	<b>0.20</b>
<b>TOTAL</b>		<b>1.33</b>	<b>11.22</b>	<b>16.12</b>	<b>0.03</b>	<b>1.25</b>	<b>0.60</b>
Onsite		<b>Winter</b>					
	Off-Road Equipment	1.13	10.40	13.00	0.02	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.13</b>	<b>10.40</b>	<b>13.00</b>	<b>0.02</b>	<b>0.43</b>	<b>0.40</b>
Offsite	Worker	0.18	0.20	2.42	0.00	0.65	0.15
	Vendor	0.02	0.67	0.33	0.01	0.17	0.05
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.20</b>	<b>0.87</b>	<b>2.75</b>	<b>0.01</b>	<b>0.82</b>	<b>0.20</b>
<b>TOTAL</b>		<b>1.33</b>	<b>11.27</b>	<b>15.75</b>	<b>0.03</b>	<b>1.25</b>	<b>0.60</b>
Onsite		<b>Summer</b>					
	Off-Road Equipment	1.13	10.40	13.00	0.02	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.13</b>	<b>10.40</b>	<b>13.00</b>	<b>0.02</b>	<b>0.43</b>	<b>0.40</b>
Offsite	Worker	0.18	0.20	2.80	0.00	0.65	0.15
	Vendor	0.02	0.67	0.33	0.01	0.17	0.05
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.20</b>	<b>0.87</b>	<b>3.12</b>	<b>0.01</b>	<b>0.82</b>	<b>0.20</b>
<b>TOTAL</b>		<b>1.33</b>	<b>11.27</b>	<b>16.12</b>	<b>0.03</b>	<b>1.25</b>	<b>0.60</b>

### 3.17. Paving (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		<b>Summer</b>					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite	Worker	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
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite		<b>Winter</b>					
	Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	0.32
	Paving	0.21	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>1.01</b>	<b>7.45</b>	<b>9.98</b>	<b>0.01</b>	<b>0.35</b>	<b>0.32</b>

Offsite	Worker	0.05	0.06	0.73	0.00	0.20	0.05
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.05</b>	<b>0.06</b>	<b>0.73</b>	<b>0.00</b>	<b>0.20</b>	<b>0.05</b>
<b>TOTAL</b>		<b>1.06</b>	<b>7.51</b>	<b>10.71</b>	<b>0.01</b>	<b>0.55</b>	<b>0.37</b>
Onsite	Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	0.32
	Paving	0.21	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>1.01</b>	<b>7.45</b>	<b>9.98</b>	<b>0.01</b>	<b>0.35</b>	<b>0.32</b>
Offsite	Worker	0.05	0.06	0.73	0.00	0.20	0.05
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.05</b>	<b>0.06</b>	<b>0.73</b>	<b>0.00</b>	<b>0.20</b>	<b>0.05</b>
<b>TOTAL</b>		<b>1.06</b>	<b>7.51</b>	<b>10.71</b>	<b>0.01</b>	<b>0.55</b>	<b>0.37</b>

### 3.19. Architectural Coating (2025)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		<b>Summer</b>					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Architectural Coatings	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite	Worker	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
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite		<b>Winter</b>					
	Off-Road Equipment	0.13	0.88	1.14	0.01	0.03	0.03
	Architectural Coatings	50.90	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>51.03</b>	<b>0.88</b>	<b>1.14</b>	<b>0.01</b>	<b>0.03</b>	<b>0.03</b>
Offsite	Worker	0.04	0.04	0.48	0.00	0.13	0.03
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.04</b>	<b>0.04</b>	<b>0.48</b>	<b>0.00</b>	<b>0.13</b>	<b>0.03</b>
<b>TOTAL</b>		<b>51.07</b>	<b>0.92</b>	<b>1.62</b>	<b>0.01</b>	<b>0.16</b>	<b>0.06</b>
Onsite	Off-Road Equipment	0.13	0.88	1.14	0.01	0.03	0.03
	Architectural Coatings	50.90	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>51.03</b>	<b>0.88</b>	<b>1.14</b>	<b>0.01</b>	<b>0.03</b>	<b>0.03</b>
Offsite	Worker	0.04	0.04	0.48	0.00	0.13	0.03
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.04</b>	<b>0.04</b>	<b>0.48</b>	<b>0.00</b>	<b>0.13</b>	<b>0.03</b>
<b>TOTAL</b>		<b>51.07</b>	<b>0.92</b>	<b>1.62</b>	<b>0.01</b>	<b>0.16</b>	<b>0.06</b>

### 3.21. Utilities Trenching (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		<b>Summer</b>					
	Off-Road Equipment	0.29	2.65	3.76	0.01	0.09	0.08
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.29</b>	<b>2.65</b>	<b>3.76</b>	<b>0.01</b>	<b>0.09</b>	<b>0.08</b>

Offsite	Worker	0.02	0.02	0.28	0.00	0.07	0.02
	Vendor	0.01	0.07	0.03	0.01	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.03</b>	<b>0.09</b>	<b>0.31</b>	<b>0.01</b>	<b>0.09</b>	<b>0.03</b>
<b>TOTAL</b>		<b>0.32</b>	<b>2.74</b>	<b>4.07</b>	<b>0.02</b>	<b>0.18</b>	<b>0.11</b>
Onsite		<b>Winter</b>					
	Off-Road Equipment	0.29	2.65	3.76	0.01	0.09	0.08
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.29</b>	<b>2.65</b>	<b>3.76</b>	<b>0.01</b>	<b>0.09</b>	<b>0.08</b>
Offsite	Worker	0.02	0.02	0.24	0.00	0.07	0.02
	Vendor	0.01	0.07	0.03	0.01	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.03</b>	<b>0.09</b>	<b>0.27</b>	<b>0.01</b>	<b>0.09</b>	<b>0.03</b>
<b>TOTAL</b>		<b>0.32</b>	<b>2.74</b>	<b>4.03</b>	<b>0.02</b>	<b>0.18</b>	<b>0.11</b>
Onsite	Off-Road Equipment	0.29	2.65	3.76	0.01	0.09	0.08
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.29</b>	<b>2.65</b>	<b>3.76</b>	<b>0.01</b>	<b>0.09</b>	<b>0.08</b>
Offsite	Worker	0.02	0.02	0.28	0.00	0.07	0.02
	Vendor	0.01	0.07	0.03	0.01	0.02	0.01
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.03</b>	<b>0.09</b>	<b>0.31</b>	<b>0.01</b>	<b>0.09</b>	<b>0.03</b>
<b>TOTAL</b>		<b>0.32</b>	<b>2.74</b>	<b>4.07</b>	<b>0.02</b>	<b>0.18</b>	<b>0.11</b>

### 3.25. Finishing/Landscaping (2024)

		ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite		<b>Summer</b>					
	Off-Road Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Offsite	Worker	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
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite		<b>Winter</b>					
	Off-Road Equipment	0.10	0.83	1.02	0.01	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.10</b>	<b>0.83</b>	<b>1.02</b>	<b>0.01</b>	<b>0.03</b>	<b>0.02</b>
Offsite	Worker	0.01	0.01	0.12	0.00	0.03	0.01
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.01</b>	<b>0.01</b>	<b>0.12</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>
<b>TOTAL</b>		<b>0.11</b>	<b>0.84</b>	<b>1.14</b>	<b>0.01</b>	<b>0.06</b>	<b>0.03</b>
Onsite	Off-Road Equipment	0.10	0.83	1.02	0.01	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.10</b>	<b>0.83</b>	<b>1.02</b>	<b>0.01</b>	<b>0.03</b>	<b>0.02</b>
Offsite	Worker	0.01	0.01	0.12	0.00	0.03	0.01
	Vendor	0.00	0.00	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00	0.00	0.00
	Total	<b>0.01</b>	<b>0.01</b>	<b>0.12</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>
<b>TOTAL</b>		<b>0.11</b>	<b>0.84</b>	<b>1.14</b>	<b>0.01</b>	<b>0.06</b>	<b>0.03</b>

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
<i>Building and Asphalt Demolition</i>	3	25	23	0	1	1
<i>Building and Asphalt Demolition and Debris Haul</i>	3	29	24	0	5	2
<i>Building and Asphalt Demolition Debris Haul</i>	0	4	2	0	4	1
<i>Building and Asphalt Demolition Debris Haul and Site Preparation</i>	1	15	12	0	5	1
<i>Site Preparation</i>	1	12	11	0	1	1
<i>Rough Grading 2024</i>	2	19	20	0	4	2
<i>Rough Grading 2025</i>	2	17	19	0	4	2
<i>Rough Grading 2025, Utility Trenching, and Building Construction</i>	3	31	39	0	5	3
<i>Utility Trenching and Building Construction</i>	2	14	20	0	1	1
<i>Utility Trenching, Building Construction, and Fine Grading</i>	3	31	39	0	5	3
<i>Building Construction</i>	1	11	16	0	1	1
<i>Building Construction and Paving</i>	2	19	27	0	2	1
<i>Building Construction, Paving, and Architectural Coating</i>	53	20	28	0	2	1
<i>Building Construction, Architectural Coating, and Finishing and Landscaping</i>	53	13	19	0	1	1
<i>Architectural Coating and Finishing and Landscaping</i>	51	2	3	0	0	0
<i>Finishing and Landscaping</i>	0	1	1	0	0	0
<b>MAX DAILY</b>	<b>53</b>	<b>31</b>	<b>39</b>	<b>0</b>	<b>5</b>	<b>3</b>
<b>Regional Thresholds</b>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
Exceeds Thresholds?	No	No	No	No	No	No

# Construction LST Worksheet:

## 3.1. Building and Asphalt Demolition (2024)

		NOx	CO	PM10 Total	PM2.5Total
Onsite					
	Off-Road Equipment	24.90	21.70	1.06	0.98
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>24.90</b>	<b>21.70</b>	<b>1.06</b>	<b>0.98</b>
<b>TOTAL</b>		<b>24.90</b>	<b>21.70</b>	<b>1.06</b>	<b>0.98</b>

Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite					
	Off-Road	24.90	21.70	1.06	0.98
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>24.90</b>	<b>21.70</b>	<b>1.06</b>	<b>0.98</b>
<b>TOTAL</b>		<b>24.90</b>	<b>21.70</b>	<b>1.06</b>	<b>0.98</b>

## 3.3. Building Demolition Debris Hauling (2024)

		NOx	CO	PM10 Total	PM2.5Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	1.49	0.23
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>

Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite					
	Off-Road	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	1.49	0.23
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>



### 3.5. Asphalt Demolition Debris Haul (2024)

		NOx	CO	PM10 Total	PM2.5Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	1.55	0.24
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite					
	Off-Road	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	1.55	0.24
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>
Offsite					
	Worker	0.00	0.00	0.00	0.00
	Vendor	0.00	0.00	0.00	0.00
	Hauling	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>

### 3.7. Site Preparation (2024)

		NOx	CO	PM10 Total	PM2.5Total
Onsite					
	Off-Road Equipment	11.20	10.10	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
<b>TOTAL</b>		<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
Onsite					
	Off-Road Equipment	11.20	10.10	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
<b>TOTAL</b>		<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
Onsite					
	Off-Road Equipment	11.20	10.10	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
<b>TOTAL</b>		<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>

### 3.9. Rough Grading (2024)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Dust From Material Movement	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite					
	Off-Road Equipment	18.20	18.80	0.84	0.77
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>18.20</b>	<b>18.80</b>	<b>3.60</b>	<b>2.11</b>
<b>TOTAL</b>		<b>18.20</b>	<b>18.80</b>	<b>3.60</b>	<b>2.11</b>
Onsite					
	Off-Road Equipment	18.20	18.80	0.84	0.77
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>18.20</b>	<b>18.80</b>	<b>3.60</b>	<b>2.11</b>
<b>TOTAL</b>		<b>18.20</b>	<b>18.80</b>	<b>3.60</b>	<b>2.11</b>

### 3.11. Rough Grading (2025)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Dust From Material Movement	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite					
	Off-Road Equipment	16.30	17.90	0.72	0.66
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
<b>TOTAL</b>		<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
Onsite					
	Off-Road Equipment	16.30	17.90	0.72	0.66
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
<b>TOTAL</b>		<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>

### 3.13. Fine Grading (2025)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Dust From Material Movement	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite					
	Off-Road Equipment	16.30	17.90	0.72	0.66
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
<b>TOTAL</b>		<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
Onsite					
	Off-Road Equipment	16.30	17.90	0.72	0.66
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
<b>TOTAL</b>		<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>

### 3.15. Building Construction (2025)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	10.40	13.00	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>
<b>TOTAL</b>		<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>
Onsite					
	Off-Road Equipment	10.40	13.00	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>
<b>TOTAL</b>		<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>
Onsite					
	Off-Road Equipment	10.40	13.00	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>
<b>TOTAL</b>		<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>

### 3.17. Paving (2025)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Paving	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite	Off-Road Equipment	7.45	9.98	0.35	0.32
	Paving	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>7.45</b>	<b>9.98</b>	<b>0.35</b>	<b>0.32</b>
<b>TOTAL</b>		<b>7.45</b>	<b>9.98</b>	<b>0.35</b>	<b>0.32</b>

Onsite	Off-Road Equipment	7.45	9.98	0.35	0.32
	Paving	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>7.45</b>	<b>9.98</b>	<b>0.35</b>	<b>0.32</b>
<b>TOTAL</b>		<b>7.45</b>	<b>9.98</b>	<b>0.35</b>	<b>0.32</b>

### 3.19. Architectural Coating (2025)

	NOx	CO	PM10 Total	PM2.5 Total
Onsite				
	Off-Road Equipment	0.00	0.00	0.00
	Architectural Coatings	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite	Off-Road Equipment	0.88	1.14	0.03	0.03
	Architectural Coatings	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
<b>TOTAL</b>		<b>0.88</b>	<b>1.14</b>	<b>0.03</b>	<b>0.03</b>

Onsite	Off-Road Equipment	0.88	1.14	0.03	0.03
	Architectural Coatings	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.88</b>	<b>1.14</b>	<b>0.03</b>	<b>0.03</b>
<b>TOTAL</b>		<b>0.88</b>	<b>1.14</b>	<b>0.03</b>	<b>0.03</b>

### 3.21. Utilities Trenching (2024)

	NOx	CO	PM10 Total	PM2.5 Total
Onsite				
	Off-Road Equipment	2.65	3.76	0.09
	Onsite truck	0.00	0.00	0.00
	Total	<b>2.65</b>	<b>3.76</b>	<b>0.09</b>
<b>TOTAL</b>		<b>2.65</b>	<b>3.76</b>	<b>0.09</b>

Onsite	Off-Road Equipment	2.65	3.76	0.09	0.08
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>
<b>TOTAL</b>		<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>

Onsite	Off-Road Equipment	2.65	3.76	0.09	0.08
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>
<b>TOTAL</b>		<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>

### 3.25. Finishing/Landscaping (2024)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite	Off-Road Equipment	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite	Off-Road Equipment	0.83	1.02	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.83</b>	<b>1.02</b>	<b>0.03</b>	<b>0.02</b>
<b>TOTAL</b>		<b>0.83</b>	<b>1.02</b>	<b>0.03</b>	<b>0.02</b>
Onsite	Off-Road Equipment	0.83	1.02	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.83</b>	<b>1.02</b>	<b>0.03</b>	<b>0.02</b>
<b>TOTAL</b>		<b>0.83</b>	<b>1.02</b>	<b>0.03</b>	<b>0.02</b>

		NOx	CO	PM10 Total	PM2.5 Total
<b>Building and Asphalt Demolition</b>		<b>25</b>	<b>22</b>	<b>1.06</b>	<b>0.98</b>
	<b>≤1.00 Acre LST</b>	<b>103</b>	<b>522</b>	<b>4.00</b>	<b>3.00</b>
	<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Building and Asphalt Demolition and Debris Haul</b>		<b>25</b>	<b>22</b>	<b>4.10</b>	<b>1.45</b>
	<b>≤1.00 Acre LST</b>	<b>103</b>	<b>522</b>	<b>4.00</b>	<b>3.00</b>
	<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>yes</b>	<b>no</b>
<b>Building and Asphalt Demolition Debris Haul</b>		<b>0</b>	<b>0</b>	<b>3.04</b>	<b>0.47</b>
	<b>≤1.00 Acre LST</b>	<b>103</b>	<b>522</b>	<b>4.00</b>	<b>3.00</b>
	<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Building and Asphalt Demolition Debris Haul and Site Preparation</b>		<b>11</b>	<b>10</b>	<b>3.90</b>	<b>0.92</b>
	<b>1.50 Acre LST</b>	<b>125</b>	<b>642</b>	<b>5.00</b>	<b>3.50</b>
	<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Site Preparation</b>		<b>11</b>	<b>10</b>	<b>0.86</b>	<b>0.45</b>
	<b>1.50 Acre LST</b>	<b>125</b>	<b>642</b>	<b>5.00</b>	<b>3.50</b>
	<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Rough Grading 2024</b>		<b>18</b>	<b>19</b>	<b>3.60</b>	<b>2.11</b>
	<b>2.50 Acre LST</b>	<b>159</b>	<b>853</b>	<b>6.83</b>	<b>4.33</b>
	<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>

<b>Rough Grading 2025</b>	<b>16</b>	<b>18</b>	<b>3.48</b>	<b>2.00</b>
<b>2.50 Acre LST</b>	<b>159</b>	<b>853</b>	<b>6.83</b>	<b>4.33</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Rough Grading 2025, Utility Trenching, and Building Construction</b>	<b>29</b>	<b>35</b>	<b>4.00</b>	<b>2.48</b>
<b>4.31 Acre LST</b>	<b>204</b>	<b>1185</b>	<b>9.85</b>	<b>5.54</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Utility Trenching and Building Construction</b>	<b>13</b>	<b>17</b>	<b>0.52</b>	<b>0.48</b>
<b>1.81 Acre LST</b>	<b>139</b>	<b>717</b>	<b>5.62</b>	<b>3.81</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Utility Trenching, Building Construction, and Fine Grading</b>	<b>29</b>	<b>35</b>	<b>4.00</b>	<b>2.48</b>
<b>4.31 Acre LST</b>	<b>204</b>	<b>1185</b>	<b>9.85</b>	<b>5.54</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Building Construction</b>	<b>10</b>	<b>13</b>	<b>0.43</b>	<b>0.40</b>
<b>≤1.00 Acre LST</b>	<b>103</b>	<b>612</b>	<b>4.00</b>	<b>3.00</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Building Construction and Paving</b>	<b>18</b>	<b>23</b>	<b>0.78</b>	<b>0.72</b>
<b>1.31 Acre LST</b>	<b>117</b>	<b>597</b>	<b>4.62</b>	<b>3.31</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Building Construction, Paving, and Architectural Coating</b>	<b>19</b>	<b>24</b>	<b>0.81</b>	<b>0.75</b>
<b>1.31 Acre LST</b>	<b>117</b>	<b>597</b>	<b>4.62</b>	<b>3.31</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Building Construction, Architectural Coating, and Finishing and Landscaping</b>	<b>12</b>	<b>15</b>	<b>0.49</b>	<b>0.45</b>
<b>≤1.00 Acre LST</b>	<b>117</b>	<b>597</b>	<b>4.62</b>	<b>3.31</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Architectural Coating and Finishing and Landscaping</b>	<b>2</b>	<b>2</b>	<b>0.06</b>	<b>0.05</b>
<b>≤1.00 Acre LST</b>	<b>103</b>	<b>522</b>	<b>4.00</b>	<b>3.00</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>
<b>Finishing and Landscaping</b>	<b>1</b>	<b>1</b>	<b>0.03</b>	<b>0.02</b>
<b>≤1.00 Acre LST</b>	<b>103</b>	<b>522</b>	<b>4.00</b>	<b>3.00</b>
<b>Exceeds LST?</b>	<b>no</b>	<b>no</b>	<b>no</b>	<b>no</b>

# Construction LST Worksheet:

## 3.1. Building and Asphalt Demolition (2024)

		NOx	CO	PM10 Total	PM2.5Total
Onsite					
	Off-Road Equipment	11.90	18.20	0.20	0.19
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>11.90</b>	<b>18.20</b>	<b>0.20</b>	<b>0.19</b>
<b>TOTAL</b>		<b>11.90</b>	<b>18.20</b>	<b>0.20</b>	<b>0.19</b>

Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite					
	Off-Road	11.90	18.20	0.20	0.19
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>11.90</b>	<b>18.20</b>	<b>0.20</b>	<b>0.19</b>
<b>TOTAL</b>		<b>11.90</b>	<b>18.20</b>	<b>0.20</b>	<b>0.19</b>

## 3.3. Building Demolition Debris Hauling (2024)

		NOx	CO	PM10 Total	PM2.5Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	1.49	0.23
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>

Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite					
	Off-Road	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	1.49	0.23
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>1.49</b>	<b>0.23</b>

### 3.5. Asphalt Demolition Debris Haul (2024)

		NOx	CO	PM10 Total	PM2.5Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	1.55	0.24
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite					
	Off-Road	0.00	0.00	0.00	0.00
	Demolition	0.00	0.00	1.55	0.24
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>1.55</b>	<b>0.24</b>

### 3.7. Site Preparation (2024)

		NOx	CO	PM10 Total	PM2.5Total
Onsite					
	Off-Road Equipment	11.20	10.10	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
<b>TOTAL</b>		<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
Onsite					
	Off-Road Equipment	11.20	10.10	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
<b>TOTAL</b>		<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
Onsite					
	Off-Road Equipment	11.20	10.10	0.45	0.41
	Dust From Material Movement	0.00	0.00	0.41	0.04
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>
<b>TOTAL</b>		<b>11.20</b>	<b>10.10</b>	<b>0.86</b>	<b>0.45</b>

### 3.9. Rough Grading (2024)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Dust From Material Movement	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>



Onsite	Off-Road Equipment	18.20	18.80	0.84	0.77
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>18.20</b>	<b>18.80</b>	<b>3.60</b>	<b>2.11</b>
<b>TOTAL</b>		<b>18.20</b>	<b>18.80</b>	<b>3.60</b>	<b>2.11</b>

Onsite	Off-Road Equipment	18.20	18.80	0.84	0.77
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>18.20</b>	<b>18.80</b>	<b>3.60</b>	<b>2.11</b>
<b>TOTAL</b>		<b>18.20</b>	<b>18.80</b>	<b>3.60</b>	<b>2.11</b>

### 3.11. Rough Grading (2025)

	NOx	CO	PM10 Total	PM2.5 Total
Onsite				
	Off-Road Equipment	0.00	0.00	0.00
	Dust From Material Movement	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite	Off-Road Equipment	16.30	17.90	0.72	0.66
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
<b>TOTAL</b>		<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>

Onsite	Off-Road Equipment	16.30	17.90	0.72	0.66
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
<b>TOTAL</b>		<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>

### 3.13. Fine Grading (2025)

	NOx	CO	PM10 Total	PM2.5 Total
Onsite				
	Off-Road Equipment	0.00	0.00	0.00
	Dust From Material Movement	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite	Off-Road Equipment	16.30	17.90	0.72	0.66
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
<b>TOTAL</b>		<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>

Onsite					
	Off-Road Equipment	16.30	17.90	0.72	0.66
	Dust From Material Movement	0.00	0.00	2.76	1.34
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>
<b>TOTAL</b>		<b>16.30</b>	<b>17.90</b>	<b>3.48</b>	<b>2.00</b>

### 3.15. Building Construction (2025)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	10.40	13.00	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>
<b>TOTAL</b>		<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>

Onsite					
	Off-Road Equipment	10.40	13.00	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>
<b>TOTAL</b>		<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>

Onsite					
	Off-Road Equipment	10.40	13.00	0.43	0.40
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>
<b>TOTAL</b>		<b>10.40</b>	<b>13.00</b>	<b>0.43</b>	<b>0.40</b>

### 3.17. Paving (2025)

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Paving	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite					
	Off-Road Equipment	7.45	9.98	0.35	0.32
	Paving	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>7.45</b>	<b>9.98</b>	<b>0.35</b>	<b>0.32</b>
<b>TOTAL</b>		<b>7.45</b>	<b>9.98</b>	<b>0.35</b>	<b>0.32</b>

Onsite					
	Off-Road Equipment	7.45	9.98	0.35	0.32
	Paving	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>7.45</b>	<b>9.98</b>	<b>0.35</b>	<b>0.32</b>
<b>TOTAL</b>		<b>7.45</b>	<b>9.98</b>	<b>0.35</b>	<b>0.32</b>

**3.19. Architectural Coating (2025)**

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Architectural Coatings	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Onsite					
	Off-Road Equipment	0.88	1.14	0.03	0.03
	Architectural Coatings	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.88</b>	<b>1.14</b>	<b>0.03</b>	<b>0.03</b>
<b>TOTAL</b>		<b>0.88</b>	<b>1.14</b>	<b>0.03</b>	<b>0.03</b>
Onsite					
	Off-Road Equipment	0.88	1.14	0.03	0.03
	Architectural Coatings	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.88</b>	<b>1.14</b>	<b>0.03</b>	<b>0.03</b>
<b>TOTAL</b>		<b>0.88</b>	<b>1.14</b>	<b>0.03</b>	<b>0.03</b>

**3.21. Utilities Trenching (2024)**

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	2.65	3.76	0.09	0.08
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>
<b>TOTAL</b>		<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>
Onsite					
	Off-Road Equipment	2.65	3.76	0.09	0.08
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>
<b>TOTAL</b>		<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>
Onsite					
	Off-Road Equipment	2.65	3.76	0.09	0.08
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>
<b>TOTAL</b>		<b>2.65</b>	<b>3.76</b>	<b>0.09</b>	<b>0.08</b>

**3.25. Finishing/Landscaping (2024)**

		NOx	CO	PM10 Total	PM2.5 Total
Onsite					
	Off-Road Equipment	0.00	0.00	0.00	0.00
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>TOTAL</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Onsite	Off-Road Equipment	0.83	1.02	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.83</b>	<b>1.02</b>	<b>0.03</b>	<b>0.02</b>
<b>TOTAL</b>		<b>0.83</b>	<b>1.02</b>	<b>0.03</b>	<b>0.02</b>

Onsite	Off-Road Equipment	0.83	1.02	0.03	0.02
	Onsite truck	0.00	0.00	0.00	0.00
	Total	<b>0.83</b>	<b>1.02</b>	<b>0.03</b>	<b>0.02</b>
<b>TOTAL</b>		<b>0.83</b>	<b>1.02</b>	<b>0.03</b>	<b>0.02</b>

	NOx	CO	PM10 Total	PM2.5 Total
<b>Building and Asphalt Demolition</b>	<b>12</b>	<b>18</b>	<b>0.20</b>	<b>0.19</b>
≤1.00 Acre LST	103	522	4.00	3.00
Exceeds LST?	no	no	no	no
<b>Building and Asphalt Demolition and Debris Haul</b>	<b>12</b>	<b>18</b>	<b>3.24</b>	<b>0.66</b>
≤1.00 Acre LST	103	522	4.00	3.00
Exceeds LST?	no	no	no	no
<b>Building and Asphalt Demolition Debris Haul</b>	<b>0</b>	<b>0</b>	<b>3.04</b>	<b>0.47</b>
≤1.00 Acre LST	103	522	4.00	3.00
Exceeds LST?	no	no	no	no
<b>Building and Asphalt Demolition Debris Haul and Site Preparation</b>	<b>11</b>	<b>10</b>	<b>3.90</b>	<b>0.92</b>
1.50 Acre LST	125	642	5.00	3.50
Exceeds LST?	no	no	no	no
<b>Site Preparation</b>	<b>11</b>	<b>10</b>	<b>0.86</b>	<b>0.45</b>
1.50 Acre LST	125	642	5.00	3.50
Exceeds LST?	no	no	no	no
<b>Rough Grading 2024</b>	<b>18</b>	<b>19</b>	<b>3.60</b>	<b>2.11</b>
2.50 Acre LST	159	853	6.83	4.33
Exceeds LST?	no	no	no	no
<b>Rough Grading 2025</b>	<b>16</b>	<b>18</b>	<b>3.48</b>	<b>2.00</b>
2.50 Acre LST	159	853	6.83	4.33
Exceeds LST?	no	no	no	no

<b>Rough Grading 2025, Utility Trenching, and Building Construction</b>	29	35	4.00	2.48
4.31 Acre LST	204	1185	9.85	5.54
Exceeds LST?	no	no	no	no
<b>Utility Trenching and Building Construction</b>	13	17	0.52	0.48
1.81 Acre LST	139	717	5.62	3.81
Exceeds LST?	no	no	no	no
<b>Utility Trenching, Building Construction, and Fine Grading</b>	29	35	4.00	2.48
4.31 Acre LST	204	1185	9.85	5.54
Exceeds LST?	no	no	no	no
<b>Building Construction</b>	10	13	0.43	0.40
≤1.00 Acre LST	103	612	4.00	3.00
Exceeds LST?	no	no	no	no
<b>Building Construction and Paving</b>	18	23	0.78	0.72
1.31 Acre LST	117	597	4.62	3.31
Exceeds LST?	no	no	no	no
<b>Building Construction, Paving, and Architectural Coating</b>	19	24	0.81	0.75
1.31 Acre LST	117	597	4.62	3.31
Exceeds LST?	no	no	no	no
<b>Building Construction, Architectural Coating, and Finishing and Landscaping</b>	12	15	0.49	0.45
≤1.00 Acre LST	117	597	4.62	3.31
Exceeds LST?	no	no	no	no
<b>Architectural Coating and Finishing and Landscaping</b>	2	2	0.06	0.05
≤1.00 Acre LST	103	522	4.00	3.00
Exceeds LST?	no	no	no	no
<b>Finishing and Landscaping</b>	1	1	0.03	0.02
≤1.00 Acre LST	103	522	4.00	3.00
Exceeds LST?	no	no	no	no

# GHG Emissions Inventory

## Proposed Project Buildout

### Construction<sup>1</sup>

	<b>MTCO<sub>2</sub>e</b>
2024	212
2025	436
<b>Total Construction</b>	<b>648</b>
<b>30-Year Amortization</b> <sup>2</sup>	<b>22</b>

#### Notes

1 CalEEMod, Version 2022.1

2 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](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).

# **Assumptions Worksheet**

# CalEEMod Inputs- Patrick Henry Elementary School Master Plan Project, Construction

**Name:** Patrick Henry Elementary School Master Plan Project, Construction  
**Project Number:** ASD-11  
**Project Location:** 1123 W Romneya Dr, Anaheim, CA 92801  
**County/Air Basin:** Orange County  
**Climate Zone:** 8  
**Land Use Setting:** Urban  
**Operational Year:** 2025  
**Utility Company:** Anaheim Public Utilities  
**Air Basin:** South Coast Air Basin  
**Air District:** South Coast AQMD  
**SRA:** 16 - North Orange County

Project Site Acreage	7.30
Disturbed Site Acreage	7.30

Project Components	SQFT	Amount of Debris			
<b>Demolition</b>					
Building Demolition (CY)	50,335	4,631			
Asphalt Demolition (Tons)	162,870	2,413			
Project Components	Number of Stories	SQFT	Building Footprint	Acres	
<b>Construction</b>					
<b>Building Area</b>					
Building A (Admin, MPR, Library, Food Service)	1	37,478	37,478	0.86	
Building B (Classrooms)	2	39,510	19,755	0.45	
Building C (Classrooms)	2	40,105	20,053	0.46	
Exterior Shade at Stage	1	846	846	0.02	
Kindergarten Lunch Shelter	1	1,200	1,200	0.03	
<b>TOTAL</b>		<b>119,139</b>	<b>79,332</b>	<b>1.82</b>	
<b>Surface Work</b>					
Parking Lot		21,558		0.49	
Asphalt Surfaces		56,656		1.30	
Playfields		40,205		0.92	
Landscaping		42,050		0.97	
Hardscape		78,125		1.79	
Remaining Area		63		0.00	
<b>TOTAL ACREAGE</b>				<b>7.30</b>	



**CalEEMod Land Use Inputs**

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet
School Building	Elementary School	119.139	1000 sqft	1.8212006	119,139
Parking	Parking Lot	21.558	1000 sqft	0.49	21,558
Parking	Other Asphalt Surfaces	56.656	1001 sqft	1.30	56,656
Parking	Other Non-Asphalt Surfaces (Landscaping)	42.050	1002 sqft	0.97	42,050
	Other Non-Asphalt Surfaces	118.393	1003 sqft	2.72	118,393
				<b>7.30</b>	

**Demolition**

Component	Amount to be Demolished	Haul Truck Capacity	Haul Distance (miles)	Total Trip Ends	Duration (days)	Trip Ends Per Day
Building (CY)	4,631	16	20	586	21	28
Asphalt (tons)	2,413	20	20	242	21	12
<b>Total</b>				<b>828</b>		

**Architectural Coating**

	Percent Painted
Interior Painted:	100%
Exterior Painted:	100%

**Rule 1113**

Interior Paint VOC content:	50	grams per liter
Exterior Paing VOC content:	50	grams per liter

Structures	Land Use Square Feet	CalEEMod Factor <sup>2</sup>	Total Paintable Surface Area	Paintable Interior Area <sup>1</sup>	Paintable Exterior Area <sup>1</sup>
<b>Non-Residential Structures</b>					
Elementary School	119,139	2.0	238,278	178,709	59,570
			238,278	<b>178,709</b>	<b>59,570</b>
<b>Parking</b>					
Parking Lot	21,558	6%	1,293	-	1,293
Asphalt Surfaces	56,656	6%	3,399	-	3,399
			3,399		<b>3,399</b>

**Notes**

- <sup>1</sup> CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.
- <sup>2</sup> 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.
- <sup>3</sup> Assumes that all parking and non-parking asphalt will be striped. CalEEMod methodology assumes 6% of surface area is striped.

**Construction Mitigation**

*SCAQMD Rule 403*

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

Water Exposed Area	Frequency:	2	per day
	PM10:	61	% Reduction
	PM25:	61	% Reduction

Unpaved Roads	Vehicle Speed:	25	mph
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*SCAQMD Rule 1186*

Clean Paved Road	9	% PM Reduction
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**Anaheim Public Utilities Carbon Intensity Factors**

CO <sub>2</sub> :	1,039.94	pounds per megawatt hour
CH <sub>4</sub> :	0.09	pound per megawatt hour
N <sub>2</sub> O:	0.01	pound per megawatt hour

Notes:

<sup>1</sup> CalEEMod default values.

## Pavement Volume to Weight Conversion

<b>Component</b>	<b>Total SF of Area<sup>1</sup></b>	<b>Assumed Thickness (foot)<sup>2</sup></b>	<b>Debris Volume (cu. ft)</b>	<b>Weight of Crushed Asphalt (lbs/cf)<sup>3</sup></b>	<b>AC Mass (lbs)</b>	<b>AC Mass (tons)</b>
Asphalt Demolition	162,870	0.333	54,290	89	4,825,778	2412.89
<b>Total</b>	162,870					2,413

<sup>1</sup> Based on aerial image of existing project site.

<sup>2</sup> Gibbons, Jim. 1999. Pavements and Surface Materials. Nonpoint Education for Municipal Officials, Technical Paper Number 8. University of Connecticut Cooperative Extension System. [https://www.uni-groupusa.org/PDF/NEMO\\_tech\\_8.pdf](https://www.uni-groupusa.org/PDF/NEMO_tech_8.pdf)

<sup>3</sup> CalRecycle. 2019. Solid Waste Cleanup Program Weights and Volumes for Project Estimates. <https://www.delmar.ca.us/DocumentCenter/View/5668/CalRecycle-Conversion-Table>

## Building Demolition Haul Trip Calculation

Conversion factors\*

0.046 ton/SF	Building Debris
2.0 CY/ton	Building Debris
1.2641662 tons/cy	Soil
20 tons	Truck Capacity in tons
16 CY	Truck Capacity in CY
0.791035229 CY/ton	Soil

<b>Building</b>	<b>BSF Demo</b>	<b>Tons/SF</b>	<b>Tons</b>	<b>CY of Building Materials</b>	<b>Haul Truck (CY)</b>	<b>Round Trips</b>	<b>Total Trip Ends</b>
Building Demolition	50,335	0.046	2,315	4,631	16	293	586
	50,335						

\*CalEEMod User's Guide Version 2022, Appendix C

**Construction Activities and Schedule Assumptions**

\* based on schedule provided by the District

Construction Activities	Phase Type	Construction Schedule		CalEEMod Duration (Workday)
		Start Date	End Date	
Building Demolition	Demolition	6/1/2024	9/1/2024	65
Building Demolition Debris Haul	Demolition	9/1/2024	9/30/2024	21
Asphalt Demolition Debris Haul	Demolition	9/1/2024	9/30/2024	21
Site Preparation	Site Preparation	9/30/2024	11/1/2024	25
Rough Grading	Grading	11/30/2024	1/30/2025	44
Fine Grading	Grading	2/1/2025	3/1/2025	20
Utility Trenching	Trenching	1/30/2025	4/1/2025	44
Building Construction	Building Construction	1/30/2025	11/1/2025	197
Paving	Paving	10/1/2025	10/30/2025	22
Architectural Coating	Architectural Coating	10/30/2025	11/30/2025	22
Finishing/Landscaping	Trenching	11/1/2025	12/30/2025	42
<b>Total Days</b>				<b>577</b>

**Overlapping Construction Schedule (CalEEMod)**

Construction Activities	Start Date	End Date	CalEEMod Duration (Workday)
Building and Asphalt Demolition	6/1/2024	8/31/2024	65
Building and Asphalt Demolition and Debris Haul	9/1/2024	9/1/2024	0
Building and Asphalt Demolition Debris Haul	9/2/2024	9/29/2024	20
Building and Asphalt Demolition Debris Haul and Site Preparation	9/30/2024	9/30/2024	1
Site Preparation	10/1/2024	11/1/2024	24
Rough Grading 2024	11/30/2024	12/31/2024	22
Rough Grading 2025	1/1/2025	1/30/2025	22
Rough Grading 2025, Utility Trenching, and Building Construction	1/30/2025	1/30/2025	1
Utility Trenching and Building Construction	1/31/2025	1/31/2025	1
Utility Trenching, Building Construction, and Fine Grading	2/1/2025	3/1/2025	20
Utility Trenching and Building Construction	3/2/2025	4/1/2025	22
Building Construction	4/2/2025	9/30/2025	130
Building Construction and Paving	10/1/2025	10/29/2025	21
Building Construction, Paving, and Architectural Coating	10/30/2025	10/30/2025	1
Building Construction, Architectural Coating, and Finishing and Landscaping	11/1/2025	11/1/2025	0
Architectural Coating and Finishing and Landscaping	11/2/2025	11/30/2025	20
Finishing and Landscaping	12/1/2025	12/30/2025	22

## CalEEMod Construction Off-Road Equipment Inputs

Based on information from District where indicated. CalEEMod default worker and vendor trips have been used for all construction activities. Where information has not been provided by the District, CalEEMod defaults have been used.

Construction Equipment Details					
Equipment	# of Equipment	hr/day	hp	load factor*	total trips per day
<b>Demolition</b>					
Concrete/Industrial Saws	1	8	33	0.73	
Excavators	3	8	36	0.38	
Rubber Tired Dozers	2	8	367	0.4	
Worker Trips					15
Vendor Trips					0
Hauling Trips					0
Water Trucks		Acres Disturbed:	1		6
<b>Building Demolition Debris Haul</b>					
no additional equipment required for demolition debris haul					
Worker Trips					0
Vendor Trips					0
Hauling Trips					28
<b>Asphalt Demolition Debris Haul</b>					
no additional equipment required for demolition debris haul					
Worker Trips					0
Vendor Trips					0
Hauling Trips					12
<b>Site Preparation<sup>1</sup></b>					
Tractors/Loaders/Backhoes	1	8	84	0.37	
Excavators	1	8	36	0.38	
Rollers	1	8	36	0.38	
Scraper	1	8	423	0.48	
Worker Trips					10
Vendor Trips					0
Hauling Trips					0
Water Trucks		Acres Disturbed:	1.5		8
<b>Rough Grading</b>					
Excavators	1	8	36	0.38	
Graders	1	8	148	0.41	
Rubber Tired Dozers	1	8	367	0.4	
Tractors/Loaders/Backhoes	3	8	84	0.37	
Worker Trips					15
Vendor Trips					0
Hauling Trips					0
Water Trucks		Acres Disturbed:	2.5		14
<b>Fine Grading</b>					
Excavators	1	8	36	0.38	
Graders	1	8	148	0.41	
Rubber Tired Dozers	1	8	367	0.4	
Tractors/Loaders/Backhoes	3	8	84	0.37	
Worker Trips					15
Vendor Trips					0
Hauling Trips					0
Water Trucks		Acres Disturbed:	2.5		14
<b>Utilities Trenching<sup>1</sup></b>					
Concrete/Industrial Saws	1	8	33	0.73	
Tractors/Loaders/Backhoes	1	8	84	0.37	
Worker Trips					5
Vendor Trips <sup>1</sup>					2
Hauling Trips					0

Building Construction					
Cranes	1	7	367	0.29	
Forklifts	3	8	82	0.2	
Generator Sets	1	8	14	0.74	
Tractors/Loaders/Backhoes	3	7	84	0.37	
Welders	1	8	46	0.45	
Worker Trips					50
Vendor Trips					20
Hauling Trips					0
Paving					
Pavers	2	8	81	0.42	
Paving Equipment	2	8	89	0.36	
Rollers	2	8	36	0.38	
Worker Trips					15
Vendor Trips					0
Hauling Trips					0
Architectural Coating					
Air Compressors	1	6	37	0.48	
Worker Trips					10
Vendor Trips					0
Hauling Trips					0
Finishing and Landscaping					
Excavators	1	8	36	0.38	
Worker Trips					3
Vendor Trips					0
Hauling Trips					0

Notes:

<sup>1</sup> Construction equipment and concrete truck data provided by District

#### Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day) <sup>1</sup>	Water Truck Capacity (gallons) <sup>2</sup>
10,000	4,000

Notes:

<sup>1</sup> Based on data provided in Guidance for Application for Dust Control Permit

Maricopa County Air Quality Department. 2005, June. Guidance for Application of Dust Control Permit. [https://www.epa.gov/sites/default/files/2019-04/documents/mr\\_guidanceforapplicationfordustcontrolpermit.pdf](https://www.epa.gov/sites/default/files/2019-04/documents/mr_guidanceforapplicationfordustcontrolpermit.pdf)

<sup>2</sup> Based on standard water truck capacity:

McLellan Industries. 2022, January (access). Water Trucks. <https://www.mclellanindustries.com/trucks/water-trucks/>

<sup>3</sup> Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.

Phase Name	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Total Trip Ends Per Day	Start Date	End Date	Workdays
Building and Asphalt Demolition	15	6	0	21	6/1/2024	9/1/2024	65
Building Demolition Debris Haul	0	0	28	28	9/1/2024	9/30/2024	21
Asphalt Demolition Debris Haul	0	0	12	12	9/1/2024	9/30/2024	21
Site Preparation	10	8	0	18	9/30/2024	11/1/2024	25
Rough Grading	15	14	0	29	11/30/2024	1/30/2025	44
Fine Grading	15	14	0	29	2/1/2025	3/1/2025	20
Utility Trenching	5	2	0	7	1/30/2025	4/1/2025	44
Building Construction	50	20	0	70	1/30/2025	11/1/2025	197
Paving	15	0	0	15	10/1/2025	10/30/2025	22
Architectural Coating	10	0	0	10	10/30/2025	11/30/2025	22
Finishing/Landscaping	3	0	0	3	11/1/2025	12/30/2025	42

Construction Activity (Overlapping)	Worker Trip Ends Per Day	Vendor Trip Ends Per Day	Haul Truck Trip Ends Per Day	Total Trip Ends Per Day	Start Date	End Date	Workdays
Building and Asphalt Demolition	15	6	0	21	6/1/2024	8/31/2024	65
Building and Asphalt Demolition and Debris Haul	15	6	40	61	9/1/2024	9/1/2024	0
Building and Asphalt Demolition Debris Haul	0	0	40	40	9/2/2024	9/29/2024	20
Building and Asphalt Demolition Debris Haul and Site Preparation	10	8	40	58	9/30/2024	9/30/2024	1
Site Preparation	10	8	0	18	10/1/2024	11/1/2024	24
Rough Grading 2024	15	14	0	29	11/30/2024	12/31/2024	22
Rough Grading 2025	15	14	0	29	1/1/2025	1/30/2025	22
Rough Grading 2025, Utility Trenching, and Building Construction	70	36	0	106	1/30/2025	1/30/2025	1
Utility Trenching and Building Construction	55	22	0	77	1/31/2025	1/31/2025	1
Utility Trenching, Building Construction, and Fine Grading	70	36	0	106	2/1/2025	3/1/2025	20
Utility Trenching and Building Construction	55	22	0	77	3/2/2025	4/1/2025	22
Building Construction	50	20	0	70	4/2/2025	9/30/2025	130
Building Construction and Paving	65	20	0	85	10/1/2025	10/29/2025	21
Building Construction, Paving, and Architectural Coating	75	20	0	95	10/30/2025	10/30/2025	1
Building Construction, Architectural Coating, and Finishing and	63	20	0	83	11/1/2025	11/1/2025	0
Architectural Coating and Finishing and Landscaping	13	0	0	13	11/2/2025	11/30/2025	20
Finishing and Landscaping	3	0	0	3	12/1/2025	12/30/2025	22
	<b>75</b>	<b>36</b>	<b>40</b>	<b>106</b>			



## Energy Use

**Name:** Patrick Henry Elementary School Master Plan Project  
**Project Number:** ASD-11  
**Project Location:** 1123 W Romneya Dr, Anaheim, CA 92801  
**County/Air Basin:** Orange County  
**Operational Year:** 2025  
**Utility Company:** Anaheim Public Utilities

	Existing	Project
	SQFT	SQFT
Existing Patrick Henry ES	50,335	119,139
Parking Lot	34,000	21,558

Proposed Project	SQFT
Project Components	New Construction
Building A (Admin, MPR, Library, Food Service)	37,478
Building B (Classrooms)	39,510
Building C (Classrooms)	40,105
Exterior Shade at Stage	846
Kindergarten Lunch Shelter	1,200
<b>TOTAL BUILDING SQFT</b>	<b>119,139</b>
Parking Lot	21,558
Asphalt Surfaces <sup>1</sup>	56,656
Playfields	40,205
Landscaping	42,050
Hardscape	78,125
Remaining Area	63

Operational Energy Use

Land Use Subtype <sup>1</sup>	Total Annual Electricity Consumption (kWh/size/year)	Total Annual Natural Gas Consumption (kBTU/size/year)	Title-24 Electricity Energy Intensity (kWhr/size/year)	Title-24 Natural Gas Energy Intensity (kBTU/size/year)	Nontitle-24 Electricity Energy Intensity (kWhr/size/year)	Nontitle-24 Natural Gas Energy Intensity (kBTU/size/year)
Elementary School Rates	6,254.30	20,979.90	5,406.80	10,671.50	847.50	10,308.40
Parking Lot Rates	876.00	0.00	876.00	0.00	0.00	0.00
Existing - Patrick Henry ES	314,810	1,056,023	272,151	537,150	42,659	518,873
Existing - Parking	29,784	0	29,784	0	0	0
<b>TOTAL EXISTING</b>	<b>344,594</b>	<b>1,056,023</b>				
Buildout - Patrick Henry ES	745,131	2,499,524	644,161	1,271,392	100,970	1,228,132
Building - Parking	18,885	0	18,885	0	0	0
<b>TOTAL PROPOSED PROJECT</b>	<b>764,016</b>	<b>2,499,524</b>				
	<b>Total Annual Electricity Consumption (kWh/year)</b>	<b>Total Annual Natural Gas Consumption (kBTU/year)</b>				
Elementary School	430,321	1,443,501				
Parking Lot	-10,899	NA				
<b>Net Change</b>	<b>419,422</b>	<b>1,443,501</b>				

# **CalEEMod Construction Model**

















5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per	
					Phase	Phase Description
Building and Asphalt Demolition	Demolition	6/1/2024	9/1/2024	5	65	
Building Demolition Debris Haul	Demolition	9/1/2024	9/30/2024	5	21	
Asphalt Demolition Debris Haul	Demolition	9/1/2024	9/30/2024	5	21	
Site Preparation	Site Preparation	9/30/2024	11/1/2024	5	25	
Rough Grading	Grading	11/30/2024	1/30/2025	5	44	
Fine Grading	Grading	2/1/2025	3/1/2025	5	20	
Building Construction	Building Construction	1/30/2025	11/1/2025	5	197	
Paving	Paving	10/1/2025	10/30/2025	5	22	
Architectural Coating	Architectural Coating	10/30/2025	11/30/2025	5	22	
Utilities Trenching	Trenching	1/30/2025	4/1/2025	5	44	
Finishing/Landscaping	Trenching	11/1/2025	12/30/2025	5	42	

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Building and Asphalt Demolition	Concrete/Industrial Saws	Diesel	Average	1	8	33	0.73
Building and Asphalt Demolition	Excavators	Diesel	Average	3	8	36	0.38
Building and Asphalt Demolition	Rubber Tired Dozers	Diesel	Average	2	8	367	0.4
Site Preparation	Rubber Tired Dozers	Diesel	Average	0	8	367	0.4
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1	8	84	0.37
Rough Grading	Excavators	Diesel	Average	1	8	36	0.38
Rough Grading	Graders	Diesel	Average	1	8	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4
Rough Grading	Tractors/Loaders/Backhoes	Diesel	Average	3	8	84	0.37
Building Construction	Cranes	Diesel	Average	1	7	367	0.29
Building Construction	Forklifts	Diesel	Average	3	8	82	0.2
Building Construction	Generator Sets	Diesel	Average	1	8	14	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3	7	84	0.37
Building Construction	Welders	Diesel	Average	1	8	46	0.45
Paving	Pavers	Diesel	Average	2	8	81	0.42
Paving	Paving Equipment	Diesel	Average	2	8	89	0.36
Paving	Rollers	Diesel	Average	2	8	36	0.38
Architectural Coating	Air Compressors	Diesel	Average	1	6	37	0.48
Building Demolition Debris Haul	Concrete/Industrial Saws	Diesel	Average	0	8	33	0.73
Building Demolition Debris Haul	Excavators	Diesel	Average	0	8	36	0.38
Building Demolition Debris Haul	Rubber Tired Dozers	Diesel	Average	0	8	367	0.4
Asphalt Demolition Debris Haul	Concrete/Industrial Saws	Diesel	Average	0	8	33	0.73
Asphalt Demolition Debris Haul	Excavators	Diesel	Average	0	8	36	0.38
Asphalt Demolition Debris Haul	Rubber Tired Dozers	Diesel	Average	0	8	367	0.4
Fine Grading	Excavators	Diesel	Average	1	8	36	0.38
Fine Grading	Graders	Diesel	Average	1	8	148	0.41
Fine Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4
Fine Grading	Tractors/Loaders/Backhoes	Diesel	Average	3	8	84	0.37
Site Preparation	Excavators	Diesel	Average	1	8	36	0.38
Site Preparation	Rollers	Diesel	Average	1	8	36	0.38
Site Preparation	Scrapers	Diesel	Average	1	8	423	0.48
Utilities Trenching	Concrete/Industrial Saws	Diesel	Average	1	8	33	0.73
Utilities Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1	8	84	0.37
Finishing/Landscaping	Excavators	Diesel	Average	1	8	36	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Building and Asphalt Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1	8	33	0.73
Building and Asphalt Demolition	Excavators	Diesel	Tier 4 Interim	3	8	36	0.38
Building and Asphalt Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	2	8	367	0.4
Site Preparation	Rubber Tired Dozers	Diesel	Average	0	8	367	0.4
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1	8	84	0.37
Rough Grading	Excavators	Diesel	Average	1	8	36	0.38
Rough Grading	Graders	Diesel	Average	1	8	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4
Rough Grading	Tractors/Loaders/Backhoes	Diesel	Average	3	8	84	0.37
Building Construction	Cranes	Diesel	Average	1	7	367	0.29
Building Construction	Forklifts	Diesel	Average	3	8	82	0.2
Building Construction	Generator Sets	Diesel	Average	1	8	14	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3	7	84	0.37
Building Construction	Welders	Diesel	Average	1	8	46	0.45
Paving	Pavers	Diesel	Average	2	8	81	0.42
Paving	Paving Equipment	Diesel	Average	2	8	89	0.36
Paving	Rollers	Diesel	Average	2	8	36	0.38
Architectural Coating	Air Compressors	Diesel	Average	1	6	37	0.48
Building Demolition Debris Haul	Concrete/Industrial Saws	Diesel	Average	0	8	33	0.73
Building Demolition Debris Haul	Excavators	Diesel	Average	0	8	36	0.38
Building Demolition Debris Haul	Rubber Tired Dozers	Diesel	Average	0	8	367	0.4
Asphalt Demolition Debris Haul	Concrete/Industrial Saws	Diesel	Average	0	8	33	0.73
Asphalt Demolition Debris Haul	Excavators	Diesel	Average	0	8	36	0.38
Asphalt Demolition Debris Haul	Rubber Tired Dozers	Diesel	Average	0	8	367	0.4
Fine Grading	Excavators	Diesel	Average	1	8	36	0.38
Fine Grading	Graders	Diesel	Average	1	8	148	0.41
Fine Grading	Rubber Tired Dozers	Diesel	Average	1	8	367	0.4
Fine Grading	Tractors/Loaders/Backhoes	Diesel	Average	3	8	84	0.37
Site Preparation	Excavators	Diesel	Average	1	8	36	0.38
Site Preparation	Rollers	Diesel	Average	1	8	36	0.38
Site Preparation	Scrapers	Diesel	Average	1	8	423	0.48
Utilities Trenching	Concrete/Industrial Saws	Diesel	Average	1	8	33	0.73
Utilities Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1	8	84	0.37
Finishing/Landscaping	Excavators	Diesel	Average	1	8	36	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per		Vehicle Mix
		Day	Miles per Trip	
Building and Asphalt Demolition				
Building and Asphalt Demolition	Worker	15	18.5	LDA,LDT1,LDT2
Building and Asphalt Demolition	Vendor	6	10.2	HHDT,MHDT
Building and Asphalt Demolition	Hauling	0	20	HHDT
Building and Asphalt Demolition	Onsite truck	0		HHDT
Site Preparation				
Site Preparation	Worker	10	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	8	10.2	HHDT,MHDT
Site Preparation	Hauling	0	20	HHDT
Site Preparation	Onsite truck	0		HHDT
Rough Grading				
Rough Grading	Worker	15	18.5	LDA,LDT1,LDT2
Rough Grading	Vendor	14	10.2	HHDT,MHDT
Rough Grading	Hauling	0	20	HHDT
Rough Grading	Onsite truck	0		HHDT
Building Construction				
Building Construction	Worker	50	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	19.5	10.2	HHDT,MHDT
Building Construction	Hauling	0	20	HHDT
Building Construction	Onsite truck	0		HHDT
Paving				
Paving	Worker	15	18.5	LDA,LDT1,LDT2
Paving	Vendor	0	10.2	HHDT,MHDT
Paving	Hauling	0	20	HHDT
Paving	Onsite truck	0		HHDT
Architectural Coating				
Architectural Coating	Worker	10	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	0	10.2	HHDT,MHDT
Architectural Coating	Hauling	0	20	HHDT
Architectural Coating	Onsite truck	0		HHDT
Building Demolition Debris Haul				
Building Demolition Debris Haul	Worker	0	18.5	LDA,LDT1,LDT2
Building Demolition Debris Haul	Vendor	0	10.2	HHDT,MHDT
Building Demolition Debris Haul	Hauling	28	20	HHDT
Building Demolition Debris Haul	Onsite truck	0		HHDT
Asphalt Demolition Debris Haul				
Asphalt Demolition Debris Haul	Worker	0	18.5	LDA,LDT1,LDT2
Asphalt Demolition Debris Haul	Vendor	0	10.2	HHDT,MHDT
Asphalt Demolition Debris Haul	Hauling	12	20	HHDT
Asphalt Demolition Debris Haul	Onsite truck	0		HHDT
Fine Grading				
Fine Grading	Worker	15	18.5	LDA,LDT1,LDT2
Fine Grading	Vendor	14	10.2	HHDT,MHDT
Fine Grading	Hauling	0	20	HHDT
Fine Grading	Onsite truck	0		HHDT
Utilities Trenching				
Utilities Trenching	Worker	5	18.5	LDA,LDT1,LDT2
Utilities Trenching	Vendor	2	10.2	HHDT,MHDT
Utilities Trenching	Hauling	0	20	HHDT
Utilities Trenching	Onsite truck	0		HHDT
Finishing/Landscaping				
Finishing/Landscaping	Worker	2.5	18.5	LDA,LDT1,LDT2
Finishing/Landscaping	Vendor	0	10.2	HHDT,MHDT
Finishing/Landscaping	Hauling	0	20	HHDT
Finishing/Landscaping	Onsite truck	0		HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per		Vehicle Mix
		Day	Miles per Trip	
Building and Asphalt Demolition				
Building and Asphalt Demolition	Worker	15	18.5	LDA,LDT1,LDT2
Building and Asphalt Demolition	Vendor	6	10.2	HHDT,MHDT
Building and Asphalt Demolition	Hauling	0	20	HHDT
Building and Asphalt Demolition	Onsite truck	0		HHDT
Site Preparation				
Site Preparation	Worker	10	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	8	10.2	HHDT,MHDT
Site Preparation	Hauling	0	20	HHDT
Site Preparation	Onsite truck	0		HHDT
Rough Grading				
Rough Grading	Worker	15	18.5	LDA,LDT1,LDT2
Rough Grading	Vendor	14	10.2	HHDT,MHDT
Rough Grading	Hauling	0	20	HHDT
Rough Grading	Onsite truck	0		HHDT
Building Construction				
Building Construction	Worker	50	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	19.5	10.2	HHDT,MHDT
Building Construction	Hauling	0	20	HHDT
Building Construction	Onsite truck	0		HHDT
Paving				
Paving	Worker	15	18.5	LDA,LDT1,LDT2
Paving	Vendor	0	10.2	HHDT,MHDT
Paving	Hauling	0	20	HHDT
Paving	Onsite truck	0		HHDT

Architectural Coating					
Architectural Coating	Worker	10	18.5	LDA,LDT1,LDT2	
Architectural Coating	Vendor	0	10.2	HHDT,MHDT	
Architectural Coating	Hauling	0	20	HHDT	
Architectural Coating	Onsite truck	0		HHDT	
Building Demolition Debris Haul					
Building Demolition Debris Haul	Worker	0	18.5	LDA,LDT1,LDT2	
Building Demolition Debris Haul	Vendor	0	10.2	HHDT,MHDT	
Building Demolition Debris Haul	Hauling	28	20	HHDT	
Building Demolition Debris Haul	Onsite truck	0		HHDT	
Asphalt Demolition Debris Haul					
Asphalt Demolition Debris Haul	Worker	0	18.5	LDA,LDT1,LDT2	
Asphalt Demolition Debris Haul	Vendor	0	10.2	HHDT,MHDT	
Asphalt Demolition Debris Haul	Hauling	12	20	HHDT	
Asphalt Demolition Debris Haul	Onsite truck	0		HHDT	
Fine Grading					
Fine Grading	Worker	15	18.5	LDA,LDT1,LDT2	
Fine Grading	Vendor	14	10.2	HHDT,MHDT	
Fine Grading	Hauling	0	20	HHDT	
Fine Grading	Onsite truck	0		HHDT	
Utilities Trenching					
Utilities Trenching	Worker	5	18.5	LDA,LDT1,LDT2	
Utilities Trenching	Vendor	2	10.2	HHDT,MHDT	
Utilities Trenching	Hauling	0	20	HHDT	
Utilities Trenching	Onsite truck	0		HHDT	
Finishing/Landscaping					
Finishing/Landscaping	Worker	2.5	18.5	LDA,LDT1,LDT2	
Finishing/Landscaping	Vendor	0	10.2	HHDT,MHDT	
Finishing/Landscaping	Hauling	0	20	HHDT	
Finishing/Landscaping	Onsite truck	0		HHDT	

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55	55
Limit vehicle speeds on unpaved roads to 25 mph	44	44
Sweep paved roads once per month	9	9

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated	Non-Residential Exterior Area Coated	Parking Area Coated (sq ft)
Architectural Coating	0	0	178709	59570	3399

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Building and Asphalt Demolition	0	0	0	0	
Building Demolition Debris Haul	0	0	0	50335	
Asphalt Demolition Debris Haul	0	0	0	2413	
Site Preparation	0	0	25	0	
Rough Grading	0	0	44	0	
Fine Grading	0	0	20	0	
Paving	0	0	0	0	5.48

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61	61
Water Demolished Area	2	36	36

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Elementary School	0	0
Parking Lot	0.49	100
Other Asphalt Surfaces	1.3	100
Other Non-Asphalt Surfaces	0.97	0
Other Non-Asphalt Surfaces	2.72	0

5.8. Construction Electricity Consumption and Emissions Factors

Year	kWh per Year	CO2	CH4	N2O
2024	0	1040	0.09	0.01
2025	0	1040	0.09	0.01

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	
Land Use	based on information provided by District
Construction: Construction Phases	based on information from District
Construction: Off-Road Equipment	based on construction equipment information from District
Construction: Trips and VMT	see assumptions file for water truck and demolition volume calculations
Construction: Architectural Coatings	SCAQMD Rule 1113, parking area accounts only for parking area to be striped

# **LST Worksheets**

**Construction Localized Significance Thresholds: Building and Asphalt Demolition**

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	1.00	25	82	25	82	7.00

Source Receptor Distance (meters)	North Orange County	Equipment	Acres/8-hr Day	Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625		0
NOx	103	Tractors	0.5	0.0625		0
CO	522	Graders	0.5	0.0625		0
PM10	4.00	Dozers	0.5	0.0625	8	2
PM2.5	3.00	Scrapers	1	0.125		0
<b>Acres</b>						1.00

	Acres	25	50	100	200	500
NOx	1	103	104	121	159	252
	1	103	104	121	159	252
CO	1	103	104	121	159	252
	1	522	685	1014	1975	6531
PM10	1	522	685	1014	1975	6531
	1	4	10	24	53	137
PM2.5	1	4	10	24	53	137
	1	3	4	9	20	74
	1	3	4	9	20	74
		3	4	9	20	74

North Orange County

	1.00 Acres	25	50	100	200	500
NOx	103	104	121	159	252	
CO	522	685	1014	1975	6531	
PM10	4	10	24	53	137	
PM2.5	3	4	9	20	74	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	1
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

**Construction Localized Significance Thresholds: Building and Asphalt Demolition Debris Haul**

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	0.00	25	82	25	82	7.00

Source Receptor Distance (meters)	North Orange County	Equipment	Acres/8-hr Day	Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625		0
NOx	103	Tractors	0.5	0.0625		0
CO	522	Graders	0.5	0.0625		0
PM10	4.00	Dozers	0.5	0.0625		0
PM2.5	3.00	Scrapers	1	0.125		0
					<b>Acres</b>	<b>0.00</b>

	Acres	25	50	100	200	500
NOx	1	103	104	121	159	252
	1	103	104	121	159	252
CO	1	103	104	121	159	252
	1	522	685	1014	1975	6531
PM10	1	522	685	1014	1975	6531
	1	522	685	1014	1975	6531
PM2.5	1	4	10	24	53	137
	1	4	10	24	53	137
PM2.5	1	4	10	24	53	137
	1	3	4	9	20	74
PM2.5	1	3	4	9	20	74
	1	3	4	9	20	74

North Orange County

**0.00 Acres**

	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
NOx	103	104	121	159	252
CO	522	685	1014	1975	6531
PM10	4	10	24	53	137
PM2.5	3	4	9	20	74

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	1
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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



**Construction Localized Significance Thresholds: Building and Asphalt Demolition Debris Haul and Site Preparation**

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	1.50	25	82	25	82	7.00

Source Receptor Distance (meters)	North Orange County	Equipment	Acres/8-hr Day	Daily hours	Equipment Used	Acres	
	25	Tractors	0.5	0.0625	8	1	0.5
NOx	125	Tractors	0.5	0.0625			0
CO	642	Graders	0.5	0.0625			0
PM10	5.00	Dozers	0.5	0.0625			0
PM2.5	3.50	Scrapers	1	0.125	8	1	1
						<b>Acres</b>	<b>1.50</b>

	Acres	25	50	100	200	500
NOx	1	103	104	121	159	252
	2	147	143	156	186	269
CO	1	125	124	139	173	261
	2	522	685	1014	1975	6531
PM10	1	762	1010	1395	2444	7121
	2	642	848	1205	2210	6826
PM2.5	1	4	10	24	53	137
	2	6	17	31	60	145
PM2.5	1	5	14	28	57	141
	2	3	4	9	20	74
North Orange County	1	4	6	11	24	79
	2	4	5	10	22	77

North Orange County		1.50 Acres	25	50	100	200	500
NOx	125	124	139	173	261	261	261
CO	642	848	1205	2210	6826	6826	6826
PM10	5	14	28	57	141	141	141
PM2.5	4	5	10	22	77	77	77

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	2
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

## Construction Localized Significance Thresholds: Site Preparation

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	1.50	25	82	25	82	7.00

Source Receptor Distance (meters)	North Orange County	Equipment	Acres/8-hr Day	Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625	8	1
<b>NOx</b>	<b>125</b>	Tractors	0.5	0.0625		0
<b>CO</b>	<b>642</b>	Graders	0.5	0.0625		0
<b>PM10</b>	<b>5.00</b>	Dozers	0.5	0.0625		0
<b>PM2.5</b>	<b>3.50</b>	Scrapers	1	0.125	8	1
					<b>Acres</b>	<b>1.50</b>

	Acres	25	50	100	200	500
NOx	1	103	104	121	159	252
	2	147	143	156	186	269
CO	1	125	124	139	173	261
	2	522	685	1014	1975	6531
PM10	1	762	1010	1395	2444	7121
	2	642	848	1205	2210	6826
PM2.5	1	4	10	24	53	137
	2	6	17	31	60	145
PM2.5	1	5	14	28	57	141
	2	3	4	9	20	74
North Orange County	1	4	6	11	24	79
	2	4	5	10	22	77

North Orange County		25	50	100	200	500
<b>1.50 Acres</b>						
	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	
NOx	125	124	139	173	261	
CO	642	848	1205	2210	6826	
PM10	5	14	28	57	141	
PM2.5	4	5	10	22	77	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	2
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

## Construction Localized Significance Thresholds: Rough Grading

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	2.50	25	82	25	82	7.00
<b>Source Receptor Distance (meters)</b>	<b>North Orange County</b>	<b>Equipment</b>	<b>Acres/8-hr Day</b>	<b>Daily hours</b>	<b>Equipment Used</b>	<b>Acres</b>
	25	Tractors	0.5	0.0625	8	3
	159	Tractors	0.5	0.0625		
<b>NOx</b>	<b>853</b>	Graders	0.5	0.0625	8	1
<b>CO</b>	<b>6.83</b>	Dozers	0.5	0.0625	8	1
<b>PM10</b>	<b>4.33</b>	Scrapers	1	0.125		
<b>PM2.5</b>						
					<b>Acres</b>	<b>2.50</b>
	<b>Acres</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
NOx	2	147	143	156	186	269
	3	172	166	179	207	285
CO	2	159	155	168	197	277
	3	762	1010	1395	2444	7121
PM10	2	945	1250	1688	2831	7665
	3	854	1130	1542	2638	7393
PM2.5	2	6	17	31	60	145
	3	8	23	37	66	152
PM2.5	2	7	20	34	63	148
	3	4	6	11	24	79
North Orange County	2	5	7	12	27	84
	3	4	7	12	26	82
<b>2.50 Acres</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	
NOx	159	155	168	197	277	
CO	854	1130	1542	2638	7393	
PM10	7	20	34	63	148	
PM2.5	4	7	12	26	82	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	2	16	3
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

**Construction Localized Significance Thresholds: Rough Grading, Utilities Trenching, and Building Construction**

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	4.31	25	82	25	82	7.00
<b>Source Receptor Distance (meters)</b>	<b>North Orange County</b>	<b>Equipment</b>	<b>Acres/8-hr Day</b>	<b>Daily hours</b>	<b>Equipment Used</b>	<b>Acres</b>
	25	Tractors	0.5	0.0625	8	4
<b>NOx</b>	<b>204</b>	Tractors	0.5	0.0625	7	3
<b>CO</b>	<b>1,185</b>	Graders	0.5	0.0625	8	1
<b>PM10</b>	<b>9.85</b>	Dozers	0.5	0.0625	8	1
<b>PM2.5</b>	<b>5.54</b>	Scrapers	1	0.125		
					<b>Acres</b>	<b>4.31</b>
	Acres	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
NOx	4	196	189	203	228	301
	5	221	212	226	249	317
CO	4	204	196	210	235	306
	5	1128	1491	1981	3218	8210
PM10	4	1311	1731	2274	3605	8754
	5	1185	1566	2073	3339	8380
PM2.5	4	9	28	43	72	158
	5	11	34	49	78	165
PM2.5	4	10	30	45	74	160
	5	5	8	14	31	90
North Orange County	6	6	9	15	34	95
	6	6	8	14	32	91
<b>4.31 Acres</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	
NOx	204	196	210	235	306	
CO	1185	1566	2073	3339	8380	
PM10	10	30	45	74	160	
PM2.5	6	8	14	32	91	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	4	16	5
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

## Construction Localized Significance Thresholds: Utilities Trenching and Building Construction

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	1.81	25	82	25	82	7.00
<b>Source Receptor Distance (meters)</b>	<b>North Orange County</b>	<b>Equipment</b>	<b>Acres/8-hr Day</b>	<b>Daily hours</b>	<b>Equipment Used</b>	<b>Acres</b>
	25	Tractors	0.5	0.0625	8	1
<b>NOx</b>	<b>139</b>	Tractors	0.5	0.0625	7	3
<b>CO</b>	<b>717</b>	Graders	0.5	0.0625		
<b>PM10</b>	<b>5.62</b>	Dozers	0.5	0.0625		
<b>PM2.5</b>	<b>3.81</b>	Scrapers	1	0.125		
						<b>Acres</b>
						1.81
	<b>Acres</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
NOx	1	103	104	121	159	252
	2	147	143	156	186	269
CO	1	139	136	149	181	266
	2	522	685	1014	1975	6531
PM10	1	762	1010	1395	2444	7121
	2	717	949	1324	2356	7010
PM2.5	1	4	10	24	53	137
	2	6	17	31	60	145
PM2.5	1	6	16	30	59	144
	2	3	4	9	20	74
North Orange County	1	4	6	11	24	79
	2	4	6	11	23	78
	<b>1.81 Acres</b>					
		<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
NOx	139	136	149	181	266	
CO	717	949	1324	2356	7010	
PM10	6	16	30	59	144	
PM2.5	4	6	11	23	78	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	2
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

**Construction Localized Significance Thresholds: Utilities Trenching, and Building Construction, Fine Grading**

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	4.31	25	82	25	82	7.00

Source Receptor Distance (meters)	North Orange County	Equipment	Acres/8-hr Day	Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625	8	4
NOx	204	Tractors	0.5	0.0625	7	3
CO	1,185	Graders	0.5	0.0625	8	1
PM10	9.85	Dozers	0.5	0.0625	8	1
PM2.5	5.54	Scrapers	1	0.125		
						Acres
						4.31

	Acres	25	50	100	200	500
NOx	4	196	189	203	228	301
	5	221	212	226	249	317
CO	4	204	196	210	235	306
	5	1128	1491	1981	3218	8210
PM10	4	1311	1731	2274	3605	8754
	5	1185	1566	2073	3339	8380
PM2.5	4	9	28	43	72	158
	5	11	34	49	78	165
PM2.5	4	10	30	45	74	160
	5	5	8	14	31	90
North Orange County	6	6	9	15	34	95
		6	8	14	32	91

North Orange County	4.31 Acres	25	50	100	200	500
NOx	204	196	210	235	306	
CO	1185	1566	2073	3339	8380	
PM10	10	30	45	74	160	
PM2.5	6	8	14	32	91	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	4	16	5
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

## Construction Localized Significance Thresholds: Building Construction and Paving

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	1.31	25	82	25	82	7.00

Source Receptor Distance (meters)	North Orange County	Equipment	Acres/8-hr Day	Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625		0
<b>NOx</b>	<b>117</b>	Tractors	0.5	0.0625	7	3
<b>CO</b>	<b>597</b>	Graders	0.5	0.0625		0
<b>PM10</b>	<b>4.62</b>	Dozers	0.5	0.0625		0
<b>PM2.5</b>	<b>3.31</b>	Scrapers	1	0.125		0
					<b>Acres</b>	<b>1.31</b>

	Acres	25	50	100	200	500
NOx	1	103	104	121	159	252
	2	147	143	156	186	269
CO	1	117	116	132	167	257
	2	522	685	1014	1975	6531
PM10	1	762	1010	1395	2444	7121
	2	597	787	1133	2122	6715
PM2.5	1	4	10	24	53	137
	2	6	17	31	60	145
PM2.5	1	5	12	26	55	140
	2	3	4	9	20	74
North Orange County	1	4	6	11	24	79
	2	3	5	10	21	76

North Orange County		25	50	100	200	500
<b>1.31 Acres</b>						
NOx	117	116	132	167	257	257
CO	597	787	1133	2122	6715	6715
PM10	5	12	26	55	140	140
PM2.5	3	5	10	21	76	76

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	2
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

**Construction Localized Significance Thresholds: Building Construction, Paving, and Architectural Coating**

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	1.31	25	82	25	82	7.00

  

Source Receptor Distance (meters)	North Orange County	Equipment	Acres/8-hr Day	Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625		0
NOx	117	Tractors	0.5	0.0625	7	1.3125
CO	597	Graders	0.5	0.0625		0
PM10	4.62	Dozers	0.5	0.0625		0
PM2.5	3.31	Scrapers	1	0.125		0
					<b>Acres</b>	<b>1.31</b>

	Acres	25	50	100	200	500
NOx	1	103	104	121	159	252
	2	147	143	156	186	269
CO	1	117	116	132	167	257
	2	522	685	1014	1975	6531
PM10	1	762	1010	1395	2444	7121
	2	597	787	1133	2122	6715
PM2.5	1	4	10	24	53	137
	2	6	17	31	60	145
PM2.5	1	5	12	26	55	140
	2	3	4	9	20	74
North Orange County	1	4	6	11	24	79
	2	3	5	10	21	76
<b>1.31 Acres</b>						
NOx	25	50	100	200	500	
CO	117	116	132	167	257	
PM10	597	787	1133	2122	6715	
PM2.5	5	12	26	55	140	
PM2.5	3	5	10	21	76	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	2
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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



**Construction Localized Significance Thresholds: Building Construction, Architectural Coating, and Finishing and Landscaping**

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	1.31	25	82	25	82	7.00
<b>Source Receptor Distance (meters)</b>	<b>North Orange County</b>	<b>Equipment</b>	<b>Acres/8-hr Day</b>	<b>Daily hours</b>	<b>Equipment Used</b>	<b>Acres</b>
	25	Tractors	0.5	0.0625		0
<b>NOx</b>	<b>117</b>	Tractors	0.5	0.0625	7	3
<b>CO</b>	<b>597</b>	Graders	0.5	0.0625		0
<b>PM10</b>	<b>4.62</b>	Dozers	0.5	0.0625		0
<b>PM2.5</b>	<b>3.31</b>	Scrapers	1	0.125		0
					<b>Acres</b>	<b>1.31</b>
	<b>Acres</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
NOx	1	103	104	121	159	252
	2	147	143	156	186	269
		117	116	132	167	257
CO	1	522	685	1014	1975	6531
	2	762	1010	1395	2444	7121
		597	787	1133	2122	6715
PM10	1	4	10	24	53	137
	2	6	17	31	60	145
		5	12	26	55	140
PM2.5	1	3	4	9	20	74
	2	4	6	11	24	79
		3	5	10	21	76
North Orange County	<b>1.31 Acres</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
		117	116	132	167	257
		597	787	1133	2122	6715
		5	12	26	55	140
		3	5	10	21	76

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	2
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

**Construction Localized Significance Thresholds: Architectural Coating and Finishing and Landscaping**

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	0.00	25	82	25	82	7.00

Source Receptor Distance (meters)	North Orange County	Equipment	Acres/8-hr Day	Daily hours	Equipment Used	Acres
	25	Tractors	0.5	0.0625		0
NOx	103	Tractors	0.5	0.0625		0
CO	522	Graders	0.5	0.0625		0
PM10	4.00	Dozers	0.5	0.0625		0
PM2.5	3.00	Scrapers	1	0.125		0
<b>Acres</b>						0.00

	Acres	25	50	100	200	500
NOx	1	103	104	121	159	252
	1	103	104	121	159	252
CO	1	522	685	1014	1975	6531
	1	522	685	1014	1975	6531
PM10	1	4	10	24	53	137
	1	4	10	24	53	137
PM2.5	1	3	4	9	20	74
	1	3	4	9	20	74
North Orange County						
	0.00 Acres					
	25	50	100	200	500	
NOx	103	104	121	159	252	
CO	522	685	1014	1975	6531	
PM10	4	10	24	53	137	
PM2.5	3	4	9	20	74	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	1
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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

## Construction Localized Significance Thresholds: Finishing and Landscaping

SRA No.	Acres	NOx & CO		PM10 & PM2.5		Construction / Project Site Size (Acres)
		Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Source Receptor Distance (meters)	Source Receptor Distance (Feet)	
16	0.00	25	82	25	82	7.00
<b>Source Receptor Distance (meters)</b>	<b>North Orange County</b>	<b>Equipment</b>	<b>Acres/8-hr Day</b>	<b>Daily hours</b>	<b>Equipment Used</b>	<b>Acres</b>
	25	Tractors	0.5	0.0625		0
<b>NOx</b>	<b>103</b>	Tractors	0.5	0.0625		0
<b>CO</b>	<b>522</b>	Graders	0.5	0.0625		0
<b>PM10</b>	<b>4.00</b>	Dozers	0.5	0.0625		0
<b>PM2.5</b>	<b>3.00</b>	Scrapers	1	0.125		0
					<b>Acres</b>	0.00
	<b>Acres</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
NOx	1	103	104	121	159	252
	1	103	104	121	159	252
		103	104	121	159	252
CO	1	522	685	1014	1975	6531
	1	522	685	1014	1975	6531
		522	685	1014	1975	6531
PM10	1	4	10	24	53	137
	1	4	10	24	53	137
		4	10	24	53	137
PM2.5	1	3	4	9	20	74
	1	3	4	9	20	74
		3	4	9	20	74
North Orange County						
	<b>0.00 Acres</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>
NOx	103	104	121	159	252	
CO	522	685	1014	1975	6531	
PM10	4	10	24	53	137	
PM2.5	3	4	9	20	74	

Acre Below		Acre Above	
SRA No.	Acres	SRA No.	Acres
16	1	16	1
<b>Distance Increment Below</b>			
25			
<b>Distance Increment Above</b>			
25			

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