Appendix A Air Quality and Greenhouse Gas Emissions Data

Appendix

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Air Quality and Greenhouse Gas Appendix

Air Quality and Greenhouse Gas Background and Modeling Data

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_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4,6]	Annual Arithmetic Mean	12 µg/m^3	9 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 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 2024a.

Notes: ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter

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

1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

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

4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

6 On February 7, 2024, the national annual $PM_{2.5}$ standard was lowered from 12 $\mu g/m^3$ to 9 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary), secondary annual $PM_{2.5}$ standard, and PM_{10} standards (primary and secondary) were retained

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_2, SO_X, PM_{10}, $PM_{2.5}$, and Pb. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_X) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone

(O_3) and NO_2 are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (South Coast AQMD 2005; US EPA 2024a). The SoCAB is designated as being in attainment under the California AAQS and attainment (serious maintenance) under the National AAQS (CARB 2024b).

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_3, South Coast AQMD has established a significance threshold (South Coast AQMD 2023a). The health effects for ozone are described later in this section.

Nitrogen Oxides (NO_X) are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). 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_X produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO_2 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_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (South Coast AQMD 2005; USEPA 2024a). 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.[1] The remainder of the SoCAB is designated in attainment (maintenance) under the National AAQS and attainment under the California AAQS (CARB 2024b).

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1 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_2 at the February 24, 2022 Board Hearing (CARB 2024e).

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, 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_2 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; USEPA 2024a). The SoCAB is designated as attainment under the California and National AAQS (CARB 2024b).

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤0.01 millimeter). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤0.002.5 millimeter). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at 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 2024e). Particulate matter can also cause environmental effects such as visibility impairment,[2] environmental damage,[3] and aesthetic damage[4] (South Coast AQMD 2005; USEPA 2024a). The SoCAB is a nonattainment area for $PM_{2.5}$ under

2 $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

3 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.

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

California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2024b).[5]

Ozone (O_3) is a key ingredient of "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (South Coast AQMD 2005; USEPA 2024a). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2024b).

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.[6] 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 2024b). 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

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[5] CARB approved the South Coast AQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to 2007. The EPA approved the State of California's request to redesignate the South Coast PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

[6] 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).

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.

Table 2, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

Table 2 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	• Cough, chest tightness • Difficulty taking a deep breath • Worsened asthma symptoms • Lung inflammation	Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	• Increased response to allergens • Aggravation of respiratory illness	Same as carbon monoxide sources
Particulate Matter (PM_{10} and $PM_{2.5}$)	• Hospitalizations for worsened heart diseases • Emergency room visits for asthma • Premature death	Cars and trucks (particularly diesels) Fireplaces and woodstoves Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	• Aggravation of respiratory disease (e.g., asthma and emphysema) • Reduced lung function	Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Lead (Pb)	• Behavioral and learning disabilities in children • Nervous system impairment	Contaminated soil

Source: CARB 2024c.

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_x 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_x 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_x emissions. The overwhelming majority of NO_x 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_x technologies and (2) developing new ZE and ultra-low NO_x 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 PM2.5 Redesignation Request and Maintenance Plan

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

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 lowest average temperature is reported at 46.4°F in December, and the highest average temperature is 84°F in August (USA.Com 2024).

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 13.92 inches per year in the vicinity of the area (USA.Com 2024).

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

Table 3 Attainment Status of Criteria Pollutants in the South Coast Air Basin

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

Source: CARB 2024b.

1 The SoCAB is pending a resignation request from nonattainment to attainment for the 24-hour federal $PM_{2.5}$ standards. The 2021 $PM_{2.5}$ Redesignation Request

Table 3 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal

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/m³ and 35 µg/m³ 24-hour $PM_{2.5}$ standards. CARB will submit the 2021 $PM_{2.5}$ Redesignation Request to the US EPA as a revision to the California SIP (CARB 2021).

2 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 for lead in the SoCAB are unclassified. 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 SIP revision was submitted to the EPA for approval.

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) 18: North Orange County Coastal. 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.[7] Data from this station includes O_3, NO_2, PM_{10}, and $PM_{2.5}$. Table 4, *Ambient Air Quality Monitoring Summary*, shows regular violations of the state and federal O_3, state PM_{10} standards, and the federal $PM_{2.5}$ standards in the last three years.

Table 4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations[1,2]		
	2021	2022	2023
Ozone (O_3)			
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	1	0
State & Federal 8-hour ≥ 0.070 ppm (days exceed threshold)	0	1	2
Max. 1-Hour Conc. (ppm)	0.089	0.102	0.089
Max. 8-Hour Conc. (ppm)	0.068	0.076	0.076
Nitrogen Dioxide (NO_2)			
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0
Max. 1-Hour Conc. (ppb)	0.0671	0.0530	0.0509
Coarse Particulates (PM_{10})			
State 24-Hour > 50 µg/m³ (days exceed threshold)	1	1	1
Federal 24-Hour > 150 µg/m³ (days exceed threshold)	0	0	0
Max. 24-Hour Conc. (µg/m³)	63.6	67.0	99.4
Fine Particulates ($PM_{2.5}$)			
Federal 24-Hour > 35 µg/m³ (days exceed threshold)	10	0	1
Max. 24-Hour Conc. (µg/m³)	54.4	33.1	45.6

Source: CARB 2024d.
Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; * = Data not available
1 Data for O_3, NO_2, $PM_{2.5}$, and PM_{10} from Anaheim-Pampas Lane Monitoring Station.
2 Most recent data available as of November 2024.

7 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.

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 2021b).

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public. The nearest sensitive receptors to the project site are the single family residences along Presidio Drive to the northeast and Davis Magnet Elementary School to the east.

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 though 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 5, *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 5 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_X)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: South Coast AQMD 2023a.

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

- Linked to increased cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)
- Increases bronchitis (O_3, $PM_{2.5}$)

- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)
- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Linked to lower birth weight in newborns ($PM_{2.5}$) (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 $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists responsible for a landmark children's health study found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (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 City with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project's mass emissions.[8] 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.

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.[9] 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 2023).

[8] 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 the proposed project 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.

[9] 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.

LOCALIZED SIGNIFICANCE THRESHOLDS

The South Coast AQMD developed LSTs for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at the project site (offsite mobile-source emissions are not included in the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS and are shown in Table 6, *South Coast AQMD Localized Significance Thresholds*.

Table 6 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_2 Standard (CAAQS)	0.18 ppm
Annual NO_2 Standard (CAAQS)	0.03 ppm
24-Hour PM_{10} Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour $PM_{2.5}$ Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour PM_{10} Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3
24-Hour $PM_{2.5}$ Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3

Source: South Coast AQMD 2023a.
ppm – parts per million; µg/m^3 – micrograms per cubic meter
1 Threshold is based on South Coast AQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

To assist lead agencies, 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 18 are shown in Table 7, *South Coast AQMD Screening-Level Localized Significance Thresholds,* for sensitive receptors within 82 feet (25 meters) for NO_X and CO and 520 feet (158 meters) for PM_{10} and $PM_{2.5}$.

Table 7 South Coast AQMD Screening-Level Localized Significance Thresholds

	Threshold (lbs/day)[1]			
Acreage Disturbed	Nitrogen Oxides (NO_X)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
≤1.00 Acre Disturbed Per Day	92	647	42.79	16.60
1.31 Acre Disturbed Per Day	104	745	45.29	17.72
3.50 Acre Disturbed Per Day	164	1,336	62.09	24.07
4.00 Acre Disturbed Per Day	175	1,461	65.85	25.36

Source: South Coast AQMD 2008, 2011, and 2023a.

[1] LSTs are based on sensitive receptors within 82 feet (25 meters) for NO_X and CO and 520 feet (158 meters) for PM_{10} and $PM_{2.5}$.

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 8, *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). As park and recreational uses do not use substantial quantities of TACs, 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 8 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 2023a.

Draft Operational Cumulative Health Risk Thresholds

South Coast AQMD initiated a Working Group to identify cumulative health risk thresholds for development projects in order to address community concerns of health risk impacts of new projects being developed in areas where there is a higher pollution burden. The cumulative health risk threshold methodology first utilizes a screening approach to identify whether projects can qualitatively address cumulative health risk or quantitatively address health risk:

- **Low Cancer Risk Project Types**: Residential, commercial, recreational, educational, and retail.
- **Medium Cancer Risk Project Types**: Truck yards, gas stations, small industrial projects, and linear projects.
- **High Cancer Risk Project Types**. Industrial, major transportation projects (airports, port, railyard, bus/train station), and major planning projects.

For projects with low and medium cancer risks, like the proposed project, a quantitative analysis is not warranted. On the other hand, for projects that result in potentially high cancer risk impacts, a quantitative is recommended. Additionally, the project-level health risk threshold of 10 in a million is adjusted based on the underlying health risk of the zip code the project is within based on South Coast AQMD's MATES V mapping. MATES V is utilized. MATES V identifies a gradient of the effects of air pollution on cancer risk in the South Coast AQMD Region, which is then used to adjust the project-level cancer risk levels as shown in Table 9, *MATES V Adjusted Cumulative Significant Cancer Risk Thresholds*.

Table 9 MATES V Adjusted Cumulative Significant Cancer Risk Thresholds

Threshold Increment	MATES V Cancer Risk	Adjusted Cumulative Cancer Risk Threshold
A	Most Stringent	≥ 1 in 1 million
B	>90th Percentile	≥ 3 in 1 million
C	90th Percentile to 50th Percentile	≥ 5 in 1 million
D	50th Percentile to 30th Percentile	≥ 7 in 1 million
E	< 30th Percentile	≥ 10 in 1 million

Source: South Coast AQMD 2023b.

South Coast AQMD has also identified that the thresholds in Table 9 should be adjusted if any of the following criteria apply:

- **Criteria #1 – Post-2018 High Volume Diesel-Fueled Mobile Sources**. If there are post-2018 high volume highways or railroad mainlines, then increase the threshold increment by 1 (e.g., from step "D" to "C").
- **Criteria #2 – Post-2018 Projects with High Volume Diesel Fueled Trucks**. Post-2018 projects are not accounted for in MATES V. Therefore, if new warehousing projects along the truck route have been constructed, then increase the threshold increment by 1 (e.g., from D to C).
- **Criteria #3 – Sensitive Receptor Population**. If the project site is within an AB 617 community or within the 80^{th} percentile of CES 4.0, then increase the threshold increment by 1(e.g., from D to C).

As mentioned previously, this type of project would be considered low to medium cancer risks; thus, an operational cancer risk analysis for the proposed project would not be warranted.

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,[10] carbon (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[11] The major GHG are briefly described below.

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

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

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

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

    - ***Chlorofluorocarbons (CFCs***) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

    - ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are

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

[11] 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 2017). 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.

emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.
- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; US EPA 2024b).

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 10, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fifth Assessment Report (AR5) GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 280 MT of CO_2.[12]

Table 10 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[1]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[1]	Sixth Assessment Report (AR6) Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	1	1	1
Methane[2] (CH_4)	25	28	30
Nitrous Oxide (N_2O)	298	265	273

Source: IPCC 2007, 2013, and 2023.
Notes: The IPCC published updated GWP values in its Sixth Assessment Report (AR6) that reflect latest information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in AR5 are used by the 2022 Scoping Plan for long-term emissions forecasting.
1 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

12 The global warming potential of a GHG is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

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 (US EPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions and, per South Coast 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_2 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).

On June 7, 2024, NHTSA announced final CAFE standards for passenger cars and light trucks built in model years 2027-2031 and final fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035. The final rules establish standards that would require an industry fleet-wide average of approximately 50.4 mpg for passenger cars and light trucks in model year 2031, by increasing fuel economy by 2 percent year over year for passenger cars (model years 2027-2031) and for light trucks (model years 2029-2031). For heavy-duty pickup trucks and vans, the final rule would increase fuel efficiency at a rate of 10 percent per year (model years 2030-2032) and 8 percent per year (model years 2033-2035) (NHTSA 2024).

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_2 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 adaption strategy, "Safeguarding California", in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

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

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_2e 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.

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).
	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)
Building Decarbonization	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 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 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018. The updated targets became effective in October2018. 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 (RTP/SCS). For the SCAG region, the 2024-2050 RTP/SCS, Connect SoCal, was adopted on April 4, 2024, and is an update to the 2020-2045 RTP/SCS. In general, the RTP/SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce VMT 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 the horizon year 2050 (SCAG 2024). 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. It also forecasts that implementation of the plan will reduce VMT per capita in year 2050 by 6.3 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 2024).

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_2e 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.

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.[13] 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. 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

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

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_4. 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 2017). 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 2017). Additionally, South Coast AQMD Rule 445 limits installation of new fireplaces in the South Coast Air Basin.

CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2023, the statewide GHG emissions inventory was updated for 2000 to 2021 emissions using the GWPs in IPCC's AR4 and reported that California produced 381.3 MMTCO2e GHG emissions in 2021 (49.7 MMTCO2e below the 2020 GHG Limit of 431 MMTCO2e). The growth in statewide emissions from 2020 to 2021 was likely due in large part to the increase of transportation and other economic activity that occurred in 2021 relative to 2020 as the California emerged from the COVID-19 pandemic (CARB 2023).

California's transportation sector was the single-largest generator of GHG emissions, producing 38.2 percent of the state's total emissions. Industrial sector emissions made up 19.4 percent, and electric power generation made up 16.4 percent of the state's emissions inventory. Other major sectors of GHG emissions include residential and commercial (10.2 percent), agriculture and forestry (8.1 percent), high GWP (5.6 percent), and recycling and waste (2.2 percent). Since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2014, statewide GHG emissions dropped below the 2020 GHG Limit (AB 32 target for year 2020) and have remained below the Limit since that time. Additionally, per capita GHG emissions have dropped from a 2001 peak of 13.8 MTCO2e per person to 9.7 MTCO2e per person in 2021, a 30 percent decrease (CARB 2023).

Transportation emissions increased from 2020, likely from passenger vehicles whose emissions rebounded after COVID-19 shelter-in-place orders were lifted. Electricity emissions also increased compared to 2020; however, there has been continued growth of in-state solar generation and imported renewable electricity. High-GWP emissions have continued to increase as high-GWP gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also continue to demonstrate that the carbon intensity of California's economy (i.e., the amount of carbon pollution per million dollars of gross domestic product) is declining. From 2000 to 2021, the carbon intensity of California's economy decreased by 50.8 percent while the gross domestic product increased by 67.9 percent (CARB 2023).

Thresholds of Significance

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

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

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

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

SOUTH COAST 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):

- **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.

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

- **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 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, or 3,000 $MTCO_2e$ for mixed-use projects. These bright-line thresholds are based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

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

  The South Coast AQMD Working Group has identified an efficiency target for projects that exceed the screening threshold of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan level projects (e.g., program-level projects such as general plans) for the year 2020.[15] The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.

The bright-line screening-level criterion of 3,000 $MTCO_2e$/yr is used as the significance threshold for this project. Therefore, if the project operation-phase emissions exceed the 3,000 $MTCO_2e$/yr threshold, GHG emissions would be considered potentially significant in the absence of mitigation measures.

[15] 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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Assumptions Worksheet

CalEEMod Inputs - Costa Mesa High School Stadium Project, Construction

Name:	Costa Mesa High School Stadium
Project Number:	NMU-22
Project Location:	2650 Fairview Road Costa Mesa, CA 92626
County/Air Basin:	South Coast
Climate Zone:	8
Land Use Setting:	Urban
Gas Utility Company:	Southern California Gas
Electric Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	South Coast AQMD
SRA:	18 - North Orange County Coastal

Project Site Acreage	10.98
Disturbed Site Acreage	10.98

Project Components	SQFT	Tons
Demolition		
Building Demolition	10,900	501
Asphalt Demolition	13,000	193
	TOTAL TONS	**694**

	Number of Stories	SQFT	Building Footprint	Acres
Construction				
Bleachers	1	20,000	20,000	0.46
Team Room Building	1	3,000	3,000	0.07
TOTAL[1]		**23,000**		**0.53**
Onsite Surface Work [1]				
Landscaping		319,292	NA	7.33
Hardscape		136,000	NA	3.12
			TOTAL ACREAGE	**10.98**

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Building Square Feet	Landscape Area Square Feet	Special Landscape Area Square Feet
Educational	High School	3.00	1000 sqft	7.86	3,000	0	319,292
Parking	Other Non-Asphalt Surfaces	136.00	1000 sqft	3.12	136,000	0	0
				10.98			

<u>Demolition</u>

Component	Amount to be Demolished (CY or Tons)	Haul Truck Capacity (CY or Tons per truck)[1]	Haul Distance (miles)[1]	Total Trip Ends	Duration (days)	Trip Ends/Day
Building Demolition Debris Haul (CY)	1003	16	20	126	14	9
Asphalt Demolition Debris Haul (Tons)	193	16	20	26	14	3

Notes:

[1] CalEEMod default used.

Architectural Coating

	Percent Painted	
Interior Painted:	100%	
Exterior Painted:	100%	
SCAQMD Rule 1113		
Interior Paint VOC content:	50	grams per liter
Exterior Paing VOC content:	50	grams per liter
Parking Paing VOC content:	100	grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
Non-Residential Structures					
Raquet Club	3,000	2.0	6,000	4,500	1,500
				4,500	**1,500**
Parking					
Other Non-Asphalt Surfaces	136,000	6%	8,160	-	8,160
					8,160

Notes

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

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

[3] CalEEmod default assumes 6% of other non-asphalt surfaces will be striped.

CalEEMod Construction Measures

SCAQMD Rule 403	Water Exposed Surfaces	Frequency per day:	2	
		PM10:	55	% Reduction
		PM2.5:	55	% Reduction
Unpaved Roads		Vehicle Speed:	25	mph
		PM10:	44	% Reduction
		PM25:	44	% Reduction
SCAQMD Rule 1186	Sweep Paved Roads	PM10:	9	% Reduction
		PM25:	9	% Reduction

Southern California Edison Carbon Intensity Factors

	Forecasted Factors 2026[1]	
CO2:	346.20	pounds per megawatt hour
CH4:	0.033	pound per megawatt hour
N2O:	0.004	pound per megawatt hour

Notes:

[1] CalEEMod default values.

Building Demolition Haul Trip Calculation

Source: CalEEMod User's Guide Version 2022.1, Appendix C

Conversion factors

0.046	ton/SF	Building Debris
2	CY/ton	Building Debris
1.2641662	tons/CY	Soil
20	tons	Truck Capacity in tons
10	CY	Truck Capacity in CY
0.5	CY/ton	Soil

Building	BSF Demo[1]	Tons/SF	Tons	CY of Building Materials	Haul Truck (CY)	Haul Truck (Ton)[2]	Round Trips	Total Trip Ends
Building Demo	10,900	0.046	501.4	1002.8	16	20	63	126

Notes:

[1] BSF provided by District.

[2] CalEEMod default haul truck capacity used.

Pavement Volume to Weight Conversion

Component	Total SF of Area[1]	Assumed Thickness (foot)[2]	Debris Volume (cu. ft)	Weight of Crushed Asphalt (lbs/cf)[3]	AC Mass (lbs)	AC Mass (tons)
Asphalt Demolition	13,000	0.333	4,333	89	385,185	192.59
Total	13,000					193

[1] Asphalt demolition SQFT provided by District.

[2] 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

[3] CalRecycle. 2019. Solid Waste Cleanup Program Weights and Volumes for Project Estimates.

Construction Activities and Schedule Assumptions

Default Construction Schedule				
Construction Activities	Phase Type	Start Date	End Date	CalEEMod Duration (Workday)
Demolition	Demolition	6/1/2025	6/29/2025	20
Site Preparation	Site Preparation	6/30/2025	7/14/2025	11
Grading	Grading	7/15/2025	8/26/2025	31
Building Construction	Building Construction	8/27/2025	10/21/2026	301
Paving	Paving	9/24/2026	10/21/2026	20
Architectural Coating	Architectural Coating	9/24/2026	10/21/2026	20

Notes:

[1] Conservatively assume building construction, paving, and architectural coating would overlap.

Normalization Calculations			
CalEEMod Defaults Construction Duration		Assumed Construction Duration	
507	days of construction	6/1/2025	6/1/2026
1.39	years of construction	365	days
16.67	months of construction	12	months
		Normalization Factor:	0.72

New CalEEMod Construction Schedule				
Construction Activities	Phase Type	Start Date	End Date	CalEEMod Duration (Workday)
Building and Asphalt Demolition	Demolition	6/1/2025	6/19/2025	14
Site Preparation	Site Preparation	6/20/2025	7/1/2025	8
Grading	Grading	7/2/2025	7/31/2025	22
Building Construction	Building Construction	8/1/2025	6/1/2026	217
Paving	Paving	5/13/2026	6/1/2026	14
Architectural Coating	Architectural Coating	5/13/2026	6/1/2026	14

Overlapping Construction Schedule			
Construction Activities	Start Date	End Date	CalEEMod Duration (Workday)
Demolition	6/1/2025	6/19/2025	14
Site Preparation	6/20/2025	7/1/2025	8
Grading	7/2/2025	7/31/2025	22
Building Construction	8/1/2025	5/12/2026	203
Building Construction, Paving, and Architectural Coating	5/13/2026	6/1/2026	14

CalEEMod Construction Off-Road Equipment Inputs

Where information has not been provided, CalEEMod default equipment, worker, and vendor trips have been used.

Construction Equipment Details[1]			
CalEEMod Equipment	**# of Equipment**	**hr/day**	**total trips per day**
Building and Asphalt Demolition			
Concrete/Industrial Saws	1	8	
Excavators	3	8	
Rubber Tired Dozers	2	8	
Worker Trips			15
Vendor Trips			2
Hauling Trips			12
Water Trucks	Acres Disturbed Per Day:	1	6
	Onsite Travel (mi/day)	0.83	
Site Preparation			
Rubber Tired Dozers	3	8	
Tractors/Loaders/Backhoes	4	8	
Worker Trips			18
Vendor Trips			1
Hauling Trips			0
Water Trucks	Acres Disturbed Per Day:	3.5	18
	Onsite Travel (mi/day)	2.89	
Grading			
Excavators	2	8	
Graders	1	8	
Rubber Tired Dozers	1	8	
Scrapers	2	8	
Tractors/Loaders/Backhoes	2	8	
Worker Trips			20
Vendor Trips			3
Hauling Trips			0
Water Trucks	Acres Disturbed Per Day:	4	20
	Onsite Travel (mi/day)	3.30	
Building Construction			
Cranes	1	7	
Forklifts	3	8	
Generator Sets	1	8	
Tractors/Loaders/Backhoes	3	7	
Welders	1	8	
Worker Trips			23
Vendor Trips			0
Hauling Trips			0

Paving			
Pavers	2	8	
Paving Equipment	2	8	
Rollers	2	8	
Worker Trips			15
Vendor Trips			2
Hauling Trips			0
Architectural Coating			
Air Compressors	1	6	
Worker Trips			5
Vendor Trips			0
Hauling Trips			0

Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day)[1]	Water Truck Capacity (gallons)[2]
10,000	4,000

Notes:

[1] *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-

[2] *Based on standard water truck capacity:*
McLellan Industries. 2024, January (access). Water Trucks.
https://www.mclellanindustries.com/trucks/water-trucks/

[3] *Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.*

CalEEMod Inputs - Costa Mesa High School Stadium Project, Operation

Name:	Costa Mesa High School Stadium
Project Number:	NMU-22
Project Location:	2650 Fairview Road Costa Mesa, CA 92626
County/Air Basin:	South Coast
Climate Zone:	8
Land Use Setting:	Urban
Gas Utility Company:	Southern California Gas
Electric Utility Company:	Southern California Edison
Air Basin:	South Coast Air Basin
Air District:	South Coast AQMD
SRA:	18 - North Orange County Coastal

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Landscape Area Square Feet	Special Landscape Area Square Feet
Educational	High School	3.00	1000 sqft	7.86	3,000	0	319,292
Parking	Other Non-Asphalt Surfaces	136.00	1000 sqft	3.12	136,000	0	0
				10.98			

Water Use (CalEEMod default)

	Indoor (gals/year)	Outdoor (gals/year)	Total
High School	99,614	5,057,731	5,157,345

Notes

[1] Assumes 100% aerobic treatment.

Solid Waste (CalEEMod default)

Land Use	Total Solid Waste (tons/year)
High School	3.90

Electricity (Buildings)

Default CalEEMod Energy Use

Land Use Subtype	Total Annual Electricity Consumption (kWh/year)	Total Annual Natural Gas Consumption (kBTU/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)
High School	18,763.03	62,939.67	**16,220.46**	**32,014.57**	2,542.57	30,925.10
Other Non-Asphalt Surfaces	0.00	0.00	**0.00**	**0.00**	0.00	0.00

Architectural Coating (see Construction Tab)

CalEEMod Construction and Operation Model

Costa Mesa High School Stadium Project Custom Report

Table of Contents

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Costa Mesa High School Stadium Project
Construction Start Date	6/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	33.6696538333872, -117.90405943790859
County	Orange
City	Costa Mesa
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5941
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
High School	3.00	1000sqft	7.86	3,000	0.00	319,292	—	—

Other Non-Asphalt Surfaces	136	1000sqft	3.12	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.18	5.79	32.4	31.5	0.07	1.37	9.13	10.5	1.26	4.15	5.41	—	7,611	7,611	0.31	0.21	3.22	7,671
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.44	1.21	10.6	14.2	0.02	0.43	0.30	0.74	0.40	0.07	0.47	—	2,704	2,704	0.10	0.03	0.03	2,716
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.87	0.73	6.62	7.55	0.01	0.27	0.66	0.93	0.25	0.22	0.47	—	1,584	1,584	0.06	0.03	0.31	1,595
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.13	1.21	1.38	< 0.005	0.05	0.12	0.17	0.05	0.04	0.09	—	262	262	0.01	0.01	0.05	264

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.06	3.39	32.4	31.5	0.07	1.37	9.13	10.5	1.26	4.15	5.41	—	7,611	7,611	0.31	0.21	3.22	7,671
2026	6.18	5.79	18.0	26.3	0.04	0.72	0.58	1.31	0.66	0.14	0.80	—	4,679	4,679	0.17	0.06	2.15	4,705
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.44	1.21	10.6	14.2	0.02	0.43	0.30	0.74	0.40	0.07	0.47	—	2,704	2,704	0.10	0.03	0.03	2,716
2026	1.36	1.15	9.95	14.0	0.02	0.38	0.30	0.68	0.35	0.07	0.42	—	2,698	2,698	0.10	0.03	0.03	2,710
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.87	0.73	6.62	7.55	0.01	0.27	0.66	0.93	0.25	0.22	0.47	—	1,584	1,584	0.06	0.03	0.31	1,595
2026	0.59	0.52	3.27	4.64	0.01	0.13	0.10	0.23	0.12	0.02	0.14	—	879	879	0.03	0.01	0.16	883
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.13	1.21	1.38	< 0.005	0.05	0.12	0.17	0.05	0.04	0.09	—	262	262	0.01	0.01	0.05	264
2026	0.11	0.09	0.60	0.85	< 0.005	0.02	0.02	0.04	0.02	< 0.005	0.03	—	145	145	0.01	< 0.005	0.03	146

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	0.11	0.02	0.14	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	2.31	64.6	66.9	0.22	< 0.005	0.01	72.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.09	0.09	0.02	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	2.31	64.1	66.4	0.22	< 0.005	0.01	72.1
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.11	0.10	0.02	0.10	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	2.31	64.4	66.8	0.22	< 0.005	0.01	72.5
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.02	< 0.005	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.38	10.7	11.1	0.04	< 0.005	< 0.005	12.0

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.11	0.11	< 0.005	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.0	38.0	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.21	26.1	26.3	< 0.005	< 0.005	—	26.6
Waste	—	—	—	—	—	—	—	—	—	—	—	2.10	0.00	2.10	0.21	0.00	—	7.35
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	0.11	0.11	0.02	0.14	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	2.31	64.6	66.9	0.22	< 0.005	0.01	72.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.0	38.0	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.21	26.1	26.3	< 0.005	< 0.005	—	26.6
Waste	—	—	—	—	—	—	—	—	—	—	—	2.10	0.00	2.10	0.21	0.00	—	7.35
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	0.09	0.09	0.02	0.01	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	2.31	64.1	66.4	0.22	< 0.005	0.01	72.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.10	0.10	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.37	0.37	< 0.005	< 0.005	—	0.37
Energy	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.0	38.0	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.21	26.1	26.3	< 0.005	< 0.005	—	26.6
Waste	—	—	—	—	—	—	—	—	—	—	—	2.10	0.00	2.10	0.21	0.00	—	7.35
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	0.11	0.10	0.02	0.10	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	2.31	64.4	66.8	0.22	< 0.005	0.01	72.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.02	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.06	0.06	< 0.005	< 0.005	—	0.06
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.29	6.29	< 0.005	< 0.005	—	6.31
Water	—	—	—	—	—	—	—	—	—	—	—	0.04	4.32	4.36	< 0.005	< 0.005	—	4.41
Waste	—	—	—	—	—	—	—	—	—	—	—	0.35	0.00	0.35	0.03	0.00	—	1.22
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	0.02	0.02	< 0.005	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.38	10.7	11.1	0.04	< 0.005	< 0.005	12.0

3. Construction Emissions Details

3.1. Building and Asphalt Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437

Demolition	—	—	—	—	—	—	0.69	0.69	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	4.44	4.44	< 0.005	< 0.005	0.01	4.69
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.85	0.76	< 0.005	0.04	—	0.04	0.03	—	0.03	—	131	131	0.01	< 0.005	—	132
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.7	21.7	< 0.005	< 0.005	—	21.8
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.84	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	199	199	< 0.005	0.01	0.75	202
Vendor	0.02	0.01	0.27	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	255	255	0.01	0.04	0.69	267
Hauling	0.08	0.02	1.02	0.45	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	837	837	0.07	0.14	1.76	881

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.37	7.37	< 0.005	< 0.005	0.01	7.46
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.78	9.78	< 0.005	< 0.005	0.01	10.2
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.1	32.1	< 0.005	0.01	0.03	33.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.22	1.22	< 0.005	< 0.005	< 0.005	1.24
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.69
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.32	5.32	< 0.005	< 0.005	< 0.005	5.59

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	1.07	1.07	< 0.005	0.11	0.11	—	11.5	11.5	< 0.005	< 0.005	0.02	12.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.69	0.66	< 0.005	0.03	—	0.03	0.03	—	0.03	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.17	0.17	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.25	0.25	< 0.005	< 0.005	< 0.005	0.26
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	19.2	19.2	< 0.005	< 0.005	—	19.3
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.98	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	232	232	< 0.005	0.01	0.88	236
Vendor	0.05	0.02	0.63	0.31	< 0.005	< 0.005	0.16	0.17	< 0.005	0.04	0.05	—	606	606	0.03	0.08	1.65	633
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.91	4.91	< 0.005	< 0.005	0.01	4.98

Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.02	13.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.20	2.20	< 0.005	< 0.005	< 0.005	2.30
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	1.22	1.22	< 0.005	0.12	0.12	—	12.9	12.9	< 0.005	< 0.005	0.02	13.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.79	1.71	< 0.005	0.07	—	0.07	0.07	—	0.07	—	398	398	0.02	< 0.005	—	399

Dust From Material Movement	—	—	—	—	—	—	0.22	0.22	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.82
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.33	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	65.9	65.9	< 0.005	< 0.005	—	66.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.14
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	1.12	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	265	265	< 0.005	0.01	1.01	269
Vendor	0.06	0.02	0.76	0.38	0.01	0.01	0.20	0.20	0.01	0.05	0.06	—	733	733	0.04	0.10	2.00	767
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.03	15.6
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.2	44.2	< 0.005	0.01	0.05	46.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.56	2.56	< 0.005	< 0.005	< 0.005	2.59

Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.32	7.32	< 0.005	< 0.005	0.01	7.64
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	3.13	3.90	0.01	0.13	—	0.13	0.12	—	0.12	—	718	718	0.03	0.01	—	720
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.07	0.06	0.57	0.71	< 0.005	0.02	—	0.02	0.02	—	0.02	—	119	119	< 0.005	< 0.005	—	119
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.29	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	305	305	< 0.005	0.01	1.16	310
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.7	15.7	< 0.005	< 0.005	0.04	16.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.09	1.11	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	291	291	< 0.005	0.01	0.03	294
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.7	15.7	< 0.005	< 0.005	< 0.005	16.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.35	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	88.2	88.2	< 0.005	< 0.005	0.15	89.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.69	4.69	< 0.005	< 0.005	0.01	4.90
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.6	14.6	< 0.005	< 0.005	0.02	14.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.81
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.32	2.93	3.86	0.01	0.11	—	0.11	0.10	—	0.10	—	713	713	0.03	0.01	—	716
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.70	< 0.005	0.02	—	0.02	0.02	—	0.02	—	118	118	< 0.005	< 0.005	—	118
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.08	0.08	0.07	1.21	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	299	299	< 0.005	0.01	1.04	304
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.04	16.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.08	1.05	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	285	285	< 0.005	0.01	0.03	288
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	< 0.005	16.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.32	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	85.9	85.9	< 0.005	< 0.005	0.13	87.1
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.59	4.59	< 0.005	< 0.005	0.01	4.79
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.4
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.79
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.27	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	57.9	57.9	< 0.005	< 0.005	—	58.1
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.59	9.59	< 0.005	< 0.005	—	9.63
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.79	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	195	195	< 0.005	0.01	0.68	198
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62.7	62.7	< 0.005	0.01	0.16	65.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.23	7.23	< 0.005	< 0.005	0.01	7.32

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.41	2.41	< 0.005	< 0.005	< 0.005	2.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.20	1.20	< 0.005	< 0.005	< 0.005	1.21
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.42
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	3.70	3.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.12	5.12	< 0.005	< 0.005	—	5.14

Architectural	0.14	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.85	0.85	< 0.005	< 0.005	—	0.85
Architectural Coatings	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.26	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	65.1	65.1	< 0.005	< 0.005	0.23	66.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.41	2.41	< 0.005	< 0.005	< 0.005	2.44
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.40
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	17.8	17.8	< 0.005	< 0.005	—	17.9
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	17.8	17.8	< 0.005	< 0.005	—	17.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	17.8	17.8	< 0.005	< 0.005	—	17.9
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	17.8	17.8	< 0.005	< 0.005	—	17.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	2.95	2.95	< 0.005	< 0.005	—	2.96
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2.95	2.95	< 0.005	< 0.005	—	2.96

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.2	20.2	< 0.005	< 0.005	—	20.2
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.2	20.2	< 0.005	< 0.005	—	20.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.2	20.2	< 0.005	< 0.005	—	20.2
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.2	20.2	< 0.005	< 0.005	—	20.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.34	3.34	< 0.005	< 0.005	—	3.35
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.34	3.34	< 0.005	< 0.005	—	3.35

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54
Total	0.11	0.11	< 0.005	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.54	0.54	< 0.005	< 0.005	—	0.54
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.06	0.06	< 0.005	< 0.005	—	0.06
Total	0.02	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.06	0.06	< 0.005	< 0.005	—	0.06

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.21	26.1	26.3	< 0.005	< 0.005	—	26.6
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.21	26.1	26.3	< 0.005	< 0.005	—	26.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.21	26.1	26.3	< 0.005	< 0.005	—	26.6
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.21	26.1	26.3	< 0.005	< 0.005	—	26.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.04	4.32	4.36	< 0.005	< 0.005	—	4.41
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	0.04	4.32	4.36	< 0.005	< 0.005	—	4.41

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	2.10	0.00	2.10	0.21	0.00	—	7.35
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.10	0.00	2.10	0.21	0.00	—	7.35
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	2.10	0.00	2.10	0.21	0.00	—	7.35
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.10	0.00	2.10	0.21	0.00	—	7.35
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	0.35	0.00	0.35	0.03	0.00	—	1.22
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.35	0.00	0.35	0.03	0.00	—	1.22

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	6/1/2025	6/19/2025	5.00	14.0	—
Site Preparation	Site Preparation	6/20/2025	7/1/2025	5.00	8.00	—
Grading	Grading	7/2/2025	7/31/2025	5.00	22.0	—
Building Construction	Building Construction	8/1/2025	6/1/2026	5.00	217	—
Paving	Paving	5/13/2026	6/1/2026	5.00	14.0	—
Architectural Coating	Architectural Coating	5/13/2026	6/1/2026	5.00	14.0	—

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	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Building and Asphalt Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Building and Asphalt Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Building and Asphalt Demolition	—	—	—	—
Building and Asphalt Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Building and Asphalt Demolition	Vendor	8.00	10.2	HHDT,MHDT
Building and Asphalt Demolition	Hauling	12.0	20.0	HHDT
Building and Asphalt Demolition	Onsite truck	1.00	0.83	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	19.0	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	1.00	2.89	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	23.0	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	1.00	3.30	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	23.0	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.49	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	2.00	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	0.00	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	5.00	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	0.00	10.2	HHDT,MHDT

Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	0.00	—	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 (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	4,500	1,500	8,160

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	0.00	0.00	0.00	694	—
Site Preparation	0.00	0.00	12.0	0.00	—
Grading	0.00	0.00	66.0	0.00	—
Paving	0.00	0.00	0.00	0.00	3.12

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
High School	0.00	0%
Other Non-Asphalt Surfaces	3.12	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
High School	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	4,500	1,500	8,160

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
High School	18,763	346	0.0330	0.0040	62,940
Other Non-Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
High School	99,614	5,057,731
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
High School	3.90	—
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

8. User Changes to Default Data

Screen	Justification
Land Use	Based on information provided by District, see assumptions file
Construction: Construction Phases	Normalized schedule based on overall construction schedule provided by District
Construction: Trips and VMT	Incorporated water truck trips as vendor trips and calculated onsite truck trip lengths, see assumptions file
Construction: Architectural Coatings	SCAQMD Rule 1113
Operations: Vehicle Data	The daily trip estimates would not be new trips generated by the proposed project, but would be redistributed trips from Jim Scott Stadium at Estancia HS to the project site.
Operations: Fleet Mix	Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.
Operations: Architectural Coatings	SCAQMD Rule 1113
Operations: Water and Waste Water	Assume 100% aerobic treatment.

Emissions Worksheet

Regional Construction Emissions Worksheet:

3.1. Building and Asphalt Demolition (2025) - Unmitigated

	ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	2.40	22.20	19.90	0.03	0.92	0.84
Demolition	0.00	0.00	0.00	0.00	0.69	0.10
Onsite truck	0.01	0.02	0.01	0.01	0.31	0.03
Total	**2.41**	**22.22**	**19.91**	**0.04**	**1.92**	**0.97**
Offsite						
Worker	0.05	0.05	0.84	0.00	0.20	0.05
Vendor	0.01	0.27	0.13	0.01	0.07	0.02
Hauling	0.02	1.02	0.45	0.01	0.23	0.07
Total	**0.08**	**1.34**	**1.42**	**0.02**	**0.50**	**0.14**
TOTAL	***2.49***	***23.56***	***21.33***	***0.05***	***2.42***	***1.11***

3.3. Site Preparation (2025) - Unmitigated

	ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	3.31	31.60	30.20	0.05	1.37	1.26
Dust From Material Movement	0.00	0.00	0.00	0.00	7.67	3.94
Onsite truck	0.01	0.02	0.01	0.01	1.07	0.11
Total	**3.32**	**31.62**	**30.21**	**0.06**	**10.11**	**5.31**
Offsite						
Worker	0.06	0.06	0.98	0.00	0.23	0.05
Vendor	0.02	0.63	0.31	0.01	0.17	0.05
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.08**	**0.69**	**1.29**	**0.01**	**0.40**	**0.10**
TOTAL	***3.40***	***32.31***	***31.50***	***0.06***	***10.51***	***5.41***

3.5. Grading (2025) - Unmitigated

	ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite	**Summer**					
Off-Road Equipment	3.20	29.70	28.30	0.06	1.23	1.14
Dust From Material Movement	0.00	0.00	0.00	0.00	3.59	1.42
Onsite truck	0.01	0.03	0.01	0.01	1.22	0.12
Total	**3.21**	**29.73**	**28.31**	**0.07**	**6.04**	**2.68**
Offsite						
Worker	0.07	0.07	1.12	0.00	0.26	0.06
Vendor	0.02	0.76	0.38	0.01	0.20	0.06
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.83**	**1.50**	**0.01**	**0.46**	**0.12**
TOTAL	***3.30***	***30.56***	***29.81***	***0.08***	***6.50***	***2.80***

3.7. Building Construction (2025) - Unmitigated

	ROG	NOx	CO	SO_2	PM10 Total	PM2.5Total
Onsite	**Summer**					
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
Total	**1.13**	**10.40**	**13.00**	**0.02**	**0.43**	**0.40**
Offsite						
Worker	0.08	0.08	1.29	0.00	0.30	0.07
Vendor	0.01	0.02	0.01	0.01	0.01	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.10**	**1.30**	**0.01**	**0.31**	**0.08**
TOTAL	***1.22***	***10.50***	***14.30***	***0.03***	***0.74***	***0.48***

3.9. Building Construction (2026) - Unmitigated

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**Summer**					
Off-Road Equipment	1.07	9.85	13.00	0.02	0.38	0.35
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.07**	**9.85**	**13.00**	**0.02**	**0.38**	**0.35**
Offsite						
Worker	0.08	0.07	1.21	0.00	0.30	0.07
Vendor	0.01	0.02	0.01	0.01	0.01	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.09**	**0.09**	**1.22**	**0.01**	**0.31**	**0.08**
TOTAL	***1.16***	***9.94***	***14.22***	***0.03***	***0.69***	***0.43***

3.11. Paving (2026) - Unmitigated

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**Summer**					
Off-Road Equipment	0.76	7.12	9.94	0.01	0.32	0.29
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
Total	**0.76**	**7.12**	**9.94**	**0.01**	**0.32**	**0.29**
Offsite						
Worker	0.05	0.05	0.79	0.00	0.20	0.05
Vendor	0.01	0.06	0.03	0.01	0.02	0.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.06**	**0.11**	**0.82**	**0.01**	**0.22**	**0.06**
TOTAL	***0.82***	***7.23***	***10.76***	***0.02***	***0.54***	***0.35***

3.13. Architectural Coating (2026) - Unmitigated

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Onsite	**Summer**					
Off-Road Equipment	0.12	0.86	1.13	0.01	0.02	0.02
Architectural Coating	3.70	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	**3.82**	**0.86**	**1.13**	**0.01**	**0.02**	**0.02**
Offsite						
Worker	0.02	0.02	0.26	0.00	0.07	0.02
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	**0.02**	**0.02**	**0.26**	**0.00**	**0.07**	**0.02**
TOTAL	***3.84***	***0.88***	***1.39***	***0.01***	***0.09***	***0.04***

	ROG	**NOx**	**CO**	**SO2**	**PM10 Total**	**PM2.5 Total**
Building and Asphalt Demolition	***2***	***24***	***21***	***0***	***2***	***1***
Site Preparation	***3***	***32***	***32***	***0***	***11***	***5***
Grading	***3***	***31***	***30***	***0***	***7***	***3***
Building Construction 2025	***1***	***11***	***14***	***0***	***1***	***0***
Building Construction 2026	***1***	***10***	***14***	***0***	***1***	***0***
Building Construction, Paving, and Architectural Coating 2026	***6***	***18***	***26***	***0***	***1***	***1***
MAX DAILY	**6**	**32**	**32**	**0**	**11**	**5**
Regional Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

Construction LST Worksheet:

3.1. Building and Asphalt Demolition (2025) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	22.20	19.90	0.92	0.84
Demolition	0.00	0.00	0.69	0.10
Onsite truck	0.02	0.01	0.31	0.03
Total	**22.22**	**19.91**	**1.92**	**0.97**

3.3. Site Preparation (2025) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	31.60	30.20	1.37	1.26
Dust From Material Movement	0.00	0.00	7.67	3.94
Onsite truck	0.02	0.01	1.07	0.11
Total	**31.62**	**30.21**	**10.11**	**5.31**

3.5. Grading (2025) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	29.70	28.30	1.23	1.14
Dust From Material Movement	0.00	0.00	3.59	1.42
Onsite truck	0.03	0.01	1.22	0.12
Total	**29.73**	**28.31**	**6.04**	**2.68**

3.7. Building Construction (2025) - Unmitigated

	NOx	CO	PM10 Total	PM2.5Total
Onsite				
Off-Road Equipment	10.40	13.00	0.43	0.40
Onsite truck	0.00	0.00	0.00	0.00
Total	**10.40**	**13.00**	**0.43**	**0.40**

3.9. Building Construction (2026) - Unmitigated

	NOx	CO	PM10 Total	PM2.5 Total
Onsite				
Off-Road Equipment	9.85	13.00	0.38	0.35
Onsite truck	0.00	0.00	0.00	0.00
Total	**9.85**	**13.00**	**0.38**	**0.35**

3.11. Paving (2026) - Unmitigated

	NOx	CO	PM10 Total	PM2.5 Total
Onsite				
Off-Road Equipment	7.12	9.94	0.32	0.29
Paving	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00
Total	**7.12**	**9.94**	**0.32**	**0.29**

3.13. Architectural Coating (2026) - Unmitigated

	NOx	CO	PM10 Total	PM2.5 Total
Onsite				
Off-Road Equipment	0.86	1.13	0.02	0.02
Architectural Coating	0.00	0.00	0.00	0.00
Onsite truck	0.00	0.00	0.00	0.00
Total	**0.86**	**1.13**	**0.02**	**0.02**

	NOx	CO	PM10 Total	PM2.5 Total
Building and Asphalt Demolition	***22***	***20***	***1.92***	***0.97***
1.00 Acre LST	***92***	***647***	***42.79***	***16.60***
Exceeds LST?	***no***	***no***	***no***	***no***
Site Preparation	***32***	***30***	***10.11***	***5.31***
3.50 Acre LST	***164***	***1,336***	***62.09***	***24.07***
Exceeds LST?	***no***	***no***	***no***	***no***
Grading	***30***	***28***	***6.04***	***2.68***
4.00 Acre LST	***175***	***1,461***	***65.85***	***25.36***
Exceeds LST?	***no***	***no***	***no***	***no***
Building Construction 2025	***10***	***13***	***0.43***	***0.40***
1.31 Acre LST	***104***	***745***	***45.29***	***17.72***
Exceeds LST?	***no***	***no***	***no***	***no***
Building Construction 2026	***10***	***13***	***0.38***	***0.35***
1.31 Acre LST	***104***	***745***	***45.29***	***17.72***
Exceeds LST?	***no***	***no***	***no***	***no***
Building Construction, Paving, and Architectural Coating 2026	***18***	***24***	***0.72***	***0.66***
1.31 Acre LST	***104***	***745***	***45.29***	***17.72***
Exceeds LST?	***no***	***no***	***no***	***no***

Regional Operation Emissions Worksheet

[1] CalEEMod, Version 2022.1.

Proposed Project

Summer

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.11	0.01	0.13	0.01	0.01	0.01
Energy	0.01	0.02	0.01	0.01	0.01	0.01
Total	**0.12**	**0.03**	**0.14**	**0.01**	**0.01**	**0.01**

Winter

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.09	0.00	0.00	0.00	0.00	0.00
Energy	0.01	0.02	0.01	0.01	0.01	0.01
Total	**0.10**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**

Max Daily

	ROG	NOx	CO	SO2	PM10 Total	PM2.5 Total
Mobile	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.11	0.01	0.13	0.01	0.01	0.01
Energy	0.01	0.02	0.01	0.01	0.01	0.01
Total	**0.12**	**0.03**	**0.14**	**0.01**	**0.01**	**0.01**
Regional Thresholds (lb/day)	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Thresholds?	No	No	No	No	No	No

GHG Emissions Inventory

Proposed Project Buildout

Construction[1]

	$MTCO_2e$
2025	264
2026	146
Total Construction	**410**
30-Year Amortization[2]	**14**

[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.

Operation[1]

	$MTCO_2e$/Year[2]	
	Operations	**%**
Mobile	0	0%
Area	0	0%
Energy	6	25%
Water	4	17%
Solid Waste	1	5%
Refrigerants	0	0%
30-Year Construction Amortization	14	53%
	26	100%

South Coast AQMD Bright-Line Screening Threshold	**3,000**
Exceed Threshold?	**No**

[1] CalEEMod, Version 2022.1.

[2] MTCO2e=metric tons of carbon dioxide equivalent.

LST Worksheets

Construction Localized Significance Thresholds: Building and Asphalt Demolition

SRA No.	Acres	*NOx & CO* Source Receptor Distance (meters)	Source Receptor Distance (Feet)	*PM10 & PM2.5* Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
18	1.00	25	82	158	520	10.98

Source Receptor	**North Coastal Orange Coun**	**Equipment**	**Acres/8-hr Day**		**Daily hours**	**Equipment Used**	**Acres**
Distance (meters)	25						
NOx	**92**	Tractors	0.5	0.0625			0
CO	**647**	Graders	0.5	0.0625			0
PM10	**42.79**	Dozers	0.5	0.0625	8	2	1
PM2.5	**16.60**	Scrapers	1	0.125			0
						Acres	1.00

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	92	93	108	140	219
	1	92	93	108	140	219
		92	93	108	140	219
CO	1	647	738	1090	2096	6841
	1	647	738	1090	2096	6841
		647	738	1090	2096	6841
PM10	1	4	13	27	54	135
	1	4	13	27	54	135
		4	13	27	54	135
PM2.5	1	3	5	9	22	76
	1	3	5	9	22	76
		3	5	9	22	76

North Coastal Orange County

1.00 Acres

	25	**50**	**100**	**200**	**500**
NOx	92	93	108	140	219
CO	647	738	1090	2096	6841
PM10	4	13	27	54	135
PM2.5	3	5	9	22	76

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
18	1	18	1
Distance Increment Below			
25			
Distance Increment Above			
25			

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

Construction Localized Significance Thresholds: Site Preparation

SRA No.	Acres	NOx & CO Source Receptor Distance (meters)	NOx & CO Source Receptor Distance (Feet)	PM10 & PM2.5 Source Receptor Distance (meters)	PM10 & PM2.5 Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
18	3.50	25	82	158	520	10.98

Source Receptor Distance (meters)	North Coastal Orange Count	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
	25						
NOx	**164**	Tractors	0.5	0.0625	8	4	2
CO	**1,336**	Graders	0.5	0.0625			0
PM10	**62.09**	Dozers	0.5	0.0625	8	3	1.5
PM2.5	**24.07**	Scrapers	1	0.125			0
						Acres	3.50

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	3	153	149	160	184	249
	4	175	169	181	204	264
		164	159	171	194	257
CO	3	1212	1347	1822	3039	8086
	4	1461	1606	2139	3464	8679
		1337	1477	1981	3252	8383
PM10	3	9	29	42	70	152
	4	12	36	50	77	159
		11	33	46	74	156
PM2.5	3	6	8	14	29	89
	4	8	10	16	32	95
		7	9	15	31	92

North Coastal Orange County

3.50 Acres

	25	**50**	**100**	**200**	**500**
NOx	164	159	171	194	257
CO	1337	1477	1981	3252	8383
PM10	11	33	46	74	156
PM2.5	7	9	15	31	92

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
18	3	18	4
Distance Increment Below			
25			
Distance Increment Above			
25			

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

Construction Localized Significance Thresholds: Grading

SRA No.	Acres	*NOx & CO* Source Receptor Distance (meters)	Source Receptor Distance (Feet)	*PM10 & PM2.5* Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
18	4.00	25	82	158	520	10.98

Source Receptor Distance (meters)	North Coastal Orange Count 25	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
NOx	**175**	Tractors	0.5	0.0625	8	2	1
CO	**1,461**	Graders	0.5	0.0625	8	1	0.5
PM10	**65.85**	Dozers	0.5	0.0625	8	1	0.5
PM2.5	**25.36**	Scrapers	1	0.125	8	2	2
						Acres	4.00

	Acres	25	50	100	200	500
NOx	4	175	169	181	204	264
	4	175	169	181	204	264
		175	169	181	204	264
CO	4	1461	1606	2139	3464	8679
	4	1461	1606	2139	3464	8679
		1461	1606	2139	3464	8679
PM10	4	12	36	50	77	159
	4	12	36	50	77	159
		12	36	50	77	159
PM2.5	4	8	10	16	32	95
	4	8	10	16	32	95
		8	10	16	32	95

North Coastal Orange County

4.00 Acres

	25	50	100	200	500
NOx	175	169	181	204	264
CO	1461	1606	2139	3464	8679
PM10	12	36	50	77	159
PM2.5	8	10	16	32	95

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
18	4	18	4
Distance Increment Below			
25			
Distance Increment Above			
25			

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

Construction Localized Significance Thresholds: Building Construction

SRA No.	Acres	NOx & CO Source Receptor Distance (meters)	NOx & CO Source Receptor Distance (Feet)	PM10 & PM2.5 Source Receptor Distance (meters)	PM10 & PM2.5 Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
18	1.31	25	82	158	520	10.98

Source Receptor Distance (meters)	North Coastal Orange Count	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
	25						
NOx	**104**	Tractors	0.5	0.0625	7	3	1.3125
CO	**745**	Graders	0.5	0.0625			0
PM10	**45.29**	Dozers	0.5	0.0625			0
PM2.5	**17.72**	Scrapers	1	0.125			0
						Acres	1.31

	Acres	25	50	100	200	500
NOx	1	92	93	108	140	219
	2	131	128	139	165	235
		104	104	118	148	224
CO	1	647	738	1090	2096	6841
	2	962	1089	1506	2615	7493
		745	848	1220	2258	7045
PM10	1	4	13	27	54	135
	2	7	21	35	62	144
		5	16	30	57	138
PM2.5	1	3	5	9	22	76
	2	5	7	12	26	83
		4	6	10	23	78

North Coastal Orange County

1.31 Acres

	25	50	100	200	500
NOx	104	104	118	148	224
CO	745	848	1220	2258	7045
PM10	5	16	30	57	138
PM2.5	4	6	10	23	78

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
18	1	18	2
Distance Increment Below			
25			
Distance Increment Above			
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 Source Receptor Distance (meters)	Source Receptor Distance (Feet)	PM10 & PM2.5 Source Receptor Distance (meters)	Source Receptor Distance (Feet)	Construction / Project Site Size (Acres)
18	1.31	25	82	158	520	10.98

Source Receptor Distance (meters)	North Coastal Orange Count	Equipment	Acres/8-hr Day		Daily hours	Equipment Used	Acres
	25						
NOx	**104**	Tractors	0.5	0.0625	7	3	1.3125
CO	**745**	Graders	0.5	0.0625			0
PM10	**45.29**	Dozers	0.5	0.0625			0
PM2.5	**17.72**	Scrapers	1	0.125			0
						Acres	1.31

	Acres	**25**	**50**	**100**	**200**	**500**
NOx	1	92	93	108	140	219
	2	131	128	139	165	235
		104	104	118	148	224
CO	1	647	738	1090	2096	6841
	2	962	1089	1506	2615	7493
		745	848	1220	2258	7045
PM10	1	4	13	27	54	135
	2	7	21	35	62	144
		5	16	30	57	138
PM2.5	1	3	5	9	22	76
	2	5	7	12	26	83
		4	6	10	23	78

North Coastal Orange County

1.31 Acres

	25	**50**	**100**	**200**	**500**
NOx	104	104	118	148	224
CO	745	848	1220	2258	7045
PM10	5	16	30	57	138
PM2.5	4	6	10	23	78

Acre Below		**Acre Above**	
SRA No.	Acres	SRA No.	Acres
18	1	18	2
Distance Increment Below			
25			
Distance Increment Above			
25			

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

Energy Calculations

Operation-Related Vehicle Fuel/Energy Usage

PROJECT LAND USE COMMUTE

Vehicle Type	Gas		Diesel		CNG		Electricity	
	VMT	Gallons	VMT	Gallons	VMT	Gallons	VMT	kWh
All Vehicles	800,596	27,877	6,780	489	114	21	57,290	21,164
Total	**800,596**	**27,877**	**6,780**	**489**	**114**	**21**	**57,290**	**21,164**

Operation - Vehicle Fuel Usage

Land Use

Vehicle type	Fleet percent	VMT[1]
	High School	High School
LDA	60.73%	525,173
LDT1	4.97%	42,990
LDT2	28.57%	247,043
MDV	2.00%	17,296
LHD1	0.46%	3,946
LHD2	0.12%	1,024
MHD	0.26%	2,206
HHD	0.09%	808
OBUS	0.00%	0
UBUS	0.00%	0
MCY	2.73%	23,630
SBUS	0.02%	138
MH	0.06%	526
	100.00%	864,779

5.9. Operational Mobile Sources							
5.9.1. Unmitigated							
Land Use Type	Trips/Satu	Trips/Sunc	Trips/Year	VMT/Wee	VMT/Satu	VMT/Sunc	VMT/Year
High School	0	0	129836	3317	0	0	864779
Other Non-Asphalt Surfaces	0	0	0	0	0	0	0

Notes:

[1] Annual VMT based on traffic generated from maximum capacity event at the stadium as conservative estimate of 498 average daily trips.

PROPOSED CONDITIONS

Vehicle type	Gas percent	Diesel percent	CNG percent	Electricity percent	
LDA	89.80%	0.17%	0.00%	10.03%	
LDT1	99.26%	0.01%	0.00%	0.73%	
LDT2	98.07%	0.40%	0.00%	1.54%	
MDV	96.45%	1.34%	0.00%	2.21%	
LHD1	61.64%	36.32%	0.00%	2.04%	
LHD2	36.24%	61.78%	0.00%	1.98%	
MHD	23.20%	74.58%	0.86%	1.36%	<< Equal to T6 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
HHD	0.04%	92.31%	6.63%	1.01%	<< Equal to T7 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
OBUS	44.00%	47.89%	7.16%	0.96%	<< Motor coach, all other buses, and OBUS (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
UBUS	27.57%	0.00%	72.38%	0.05%	
MCY	100.00%	0.00%	0.00%	0.00%	
SBUS	46.37%	22.92%	29.81%	0.89%	
MH	65.38%	34.62%	0.00%	0.00%	

PROPOSED CONDITIONS

Vehicle type	Gasoline			Diesel			CNG			Electricity		
	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	m/kWh	kWh
LDA	471,618	31.30	15,068	895	43.60	21	0	0.00	0	52,660	2.70	19,521
LDT1	42,672	26.09	1,635	5	23.95	0	0	0.00	0	313	2.78	113
LDT2	242,271	25.65	9,446	978	33.36	29	0	0.00	0	3,794	2.87	1,321
MDV	16,682	20.84	800	232	24.84	9	0	0.00	0	382	2.78	138
LHD1	2,433	14.62	166	1,433	20.94	68	0	0.00	0	81	1.78	45
LHD2	371	12.72	29	632	17.73	36	0	0.00	0	20	1.78	11
MHD	512	5.23	98	1,645	9.01	183	19	8.49	2.24	30	0.00	0
HHD	0	4.43	0	746	6.19	121	54	6.09	8.79	8	0.56	15
OBUS	0	5.30	0	0	7.78	0	0	9.14	0.00	0	0.00	0
UBUS	0	12.20	0	0	0.00	0	0	2.98	0.00	0	0.47	0
MCY	23,630	42.45	557	0	0.00	0	0	0.00	0.00	0	0.00	0
SBUS	64	8.96	7	32	7.43	4	41	4.34	9.49	1	0.86	1
MH	344	4.89	70	182	10.15	18	0	0.00	0.00	0	0.00	0
	800,596		**27,877**	**6,780**		**489**	**114**		**21**	**57,290**		**21,164**

EMFAC Fuel Usage: Year 2026

Vehicle type	GAS			DSL			NG			ELEC		
	VMT/day	Gallons/day	Miles/gallon	VMT/day	Gallons/day	Miles/gallon	VMT/day	Gallons/day	Miles/gallon	VMT/day	kWh/day	Miles/kWh
All other buses	0	0	0.00	19,790	2,075	9.54	5,486	600	9.14	0	0	0.00
LDA	42,344,311	1,352,872	31.30	80,362	1,843	43.60	0	0	0.00	4,728,130	1,752,668	2.70
LDT1	3,398,185	130,236	26.09	363	15	23.95	0	0	0.00	24,949	8,960	2.78
LDT2	21,908,058	854,165	25.65	88,467	2,652	33.36	0	0	0.00	343,057	119,437	2.87
LHD1	1,657,395	113,326	14.62	976,534	46,636	20.94	0	0	0.00	54,881	30,841	1.78
LHD2	247,700	19,476	12.72	422,249	23,820	17.73	0	0	0.00	13,513	7,601	1.78
MCY	330,192	7,779	42.45	0	0	0.00	0	0	0.00	0	0	0.00
MDV	12,768,075	612,701	20.84	177,255	7,137	24.84	0	0	0.00	292,686	105,368	2.78
MH	55,665	11,392	4.89	29,469	2,903	10.15	0	0	0.00	0	0	0.00
Motor coach	0	0	0.00	16,902	2,957	5.71	0	0	0.00	0	0	0.00
OBUS	33,711	6,364	5.30	0	0	0.00	0	0	0.00	733	765	0.96
PTO	0	0	0.00	44,948	8,862	5.07	0	0	0.00	915	1,896	0.48
SBUS	31,112	3,471	8.96	15,380	2,069	7.43	20,002	4,608	4.34	599	693	0.86
T6	361,927	69,266	5.23	1,163,540	129,172	9.01	13,433	1,582	8.49	21,163	22,201	0.95
T7	553	125	4.43	1,251,031	202,226	6.19	89,889	14,755	6.09	13,717	24,550	0.56
UBUS	42,376	3,474	12.20	0	0	0.00	111,248	37,358	2.98	78	165	0.47
Total	**83,179,262**	**3,184,647**	**26.12**	**4,286,290**	**432,369**	**9.91**	**240,059**	**58,903**	**4.08**	**5,494,420**	**2,075,146**	**2.65**

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: Orange (SC)
Calendar Year: 2026
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Fuel Consumption	Energy Consumption
Orange (SC)	2026	All Other Buses	Aggregate	Aggregate	Diesel	364.8114073	19789.95104	19789.95104	0	3246.821525	2.074966085	0
Orange (SC)	2026	All Other Buses	Aggregate	Aggregate	Natural Gas	92.91719861	5486.130001	5486.130001	0	826.9630677	0.600318324	0
Orange (SC)	2026	LDA	Aggregate	Aggregate	Gasoline	1049515.92	41577927.11	41577927.11	0	4898979.591	1326.240617	0
Orange (SC)	2026	LDA	Aggregate	Aggregate	Diesel	2742.173139	80362.1723	80362.1723	0	11498.25795	1.843101131	0
Orange (SC)	2026	LDA	Aggregate	Aggregate	Electricity	81098.87481	3862245.078	0	3862245.078	400525.9224	0	1491145.368
Orange (SC)	2026	LDA	Aggregate	Aggregate	Plug-in Hybrid	35696.79687	1632268.837	766384.0341	865884.803	147606.2551	26.63090991	261523.018
Orange (SC)	2026	LDT1	Aggregate	Aggregate	Gasoline	95040.06341	3392265.426	3392265.426	0	421984.1489	130.0301381	0
Orange (SC)	2026	LDT1	Aggregate	Aggregate	Diesel	24.49979621	362.8616544	362.8616544	0	67.50286897	0.015149993	0
Orange (SC)	2026	LDT1	Aggregate	Aggregate	Electricity	361.8710153	16951.55958	0	16951.55958	1768.990103	0	6544.701086
Orange (SC)	2026	LDT1	Aggregate	Aggregate	Plug-in Hybrid	270.687928	13917.21072	5919.6857	7997.525016	1119.294582	0.206242024	2415.490919
Orange (SC)	2026	LDT2	Aggregate	Aggregate	Gasoline	536812.5168	21784157.47	21784157.47	0	2520480.791	849.8319221	0
Orange (SC)	2026	LDT2	Aggregate	Aggregate	Diesel	2150.46559	88467.05453	88467.05453	0	10208.80139	2.651974699	0
Orange (SC)	2026	LDT2	Aggregate	Aggregate	Electricity	5257.386579	188253.2028	0	188253.2028	26659.30339	0	72681.27368
Orange (SC)	2026	LDT2	Aggregate	Aggregate	Plug-in Hybrid	5706.320321	278704.4829	123900.7496	154803.7333	23595.63453	4.332955856	46755.34134
Orange (SC)	2026	LHD1	Aggregate	Aggregate	Gasoline	41098.7832	1657395.449	1657395.449	0	612310.6325	113.3264813	0
Orange (SC)	2026	LHD1	Aggregate	Aggregate	Diesel	23010.07791	976534.0014	976534.0014	0	289437.8334	46.63641428	0
Orange (SC)	2026	LHD1	Aggregate	Aggregate	Electricity	815.1958673	54881.04636	0	54881.04636	11396.70188	0	30841.11106
Orange (SC)	2026	LHD2	Aggregate	Aggregate	Gasoline	6615.094062	247700.2283	247700.2283	0	98555.04503	19.47647629	0
Orange (SC)	2026	LHD2	Aggregate	Aggregate	Diesel	10012.14742	422248.7801	422248.7801	0	125940.2192	23.82033186	0
Orange (SC)	2026	LHD2	Aggregate	Aggregate	Electricity	211.0818991	13512.73317	0	13512.73317	2800.081371	0	7600.693106
Orange (SC)	2026	MCY	Aggregate	Aggregate	Gasoline	51778.70958	330192.3764	330192.3764	0	103557.4192	7.778574027	0
Orange (SC)	2026	MDV	Aggregate	Aggregate	Gasoline	326894.2358	12693098.03	12693098.03	0	1516229.941	610.0425653	0
Orange (SC)	2026	MDV	Aggregate	Aggregate	Diesel	4570.655518	177255.4948	177255.4948	0	21257.30604	7.136823534	0
Orange (SC)	2026	MDV	Aggregate	Aggregate	Electricity	5641.41152	201874.3361	0	201874.3361	28601.64001	0	77940.15535
Orange (SC)	2026	MDV	Aggregate	Aggregate	Plug-in Hybrid	3648.256691	165788.2556	74976.88572	90811.36993	15085.54142	2.658516014	27427.74033
Orange (SC)	2026	MH	Aggregate	Aggregate	Gasoline	5656.411647	55665.04345	55665.04345	0	565.8674212	11.39189816	0
Orange (SC)	2026	MH	Aggregate	Aggregate	Diesel	3003.794796	29469.38598	29469.38598	0	300.3794796	2.903244461	0
Orange (SC)	2026	Motor Coach	Aggregate	Aggregate	Diesel	130.9543581	16901.90221	16901.90221	0	3009.331149	2.957474151	0
Orange (SC)	2026	OBUS	Aggregate	Aggregate	Gasoline	819.5446697	33711.35172	33711.35172	0	16397.44975	6.36419335	0
Orange (SC)	2026	OBUS	Aggregate	Aggregate	Electricity	9.821208849	732.8008896	0	732.8008896	196.5027467	0	765.2842969
Orange (SC)	2026	PTO	Aggregate	Aggregate	Diesel	0	44947.88717	44947.88717	0	0	8.862128643	0
Orange (SC)	2026	PTO	Aggregate	Aggregate	Electricity	0	915.2479975	0	915.2479975	0	0	1895.953404
Orange (SC)	2026	SBUS	Aggregate	Aggregate	Gasoline	688.5633033	31112.44458	31112.44458	0	2754.253213	3.471010776	0
Orange (SC)	2026	SBUS	Aggregate	Aggregate	Diesel	756.2070806	15379.61859	15379.61859	0	10949.87853	2.069129743	0
Orange (SC)	2026	SBUS	Aggregate	Aggregate	Electricity	19.66639619	599.0783053	0	599.0783053	235.5635237	0	692.7150486
Orange (SC)	2026	SBUS	Aggregate	Aggregate	Natural Gas	808.8277787	20001.58816	20001.58816	0	11711.82624	4.607682648	0
Orange (SC)	2026	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	9.197205943	599.0064288	599.0064288	0	211.3517926	0.063878622	0
Orange (SC)	2026	T6 CAIRP Class 4	Aggregate	Aggregate	Electricity	0.197818415	15.72855393	0	15.72855393	4.545867175	0	16.56713098
Orange (SC)	2026	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	12.10786522	823.7739746	823.7739746	0	278.2387428	0.087968545	0
Orange (SC)	2026	T6 CAIRP Class 5	Aggregate	Aggregate	Electricity	0.230584554	19.53187773	0	19.53187773	5.298833061	0	20.5732312
Orange (SC)	2026	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	42.05639022	2131.583654	2131.583654	0	966.4558474	0.224017824	0
Orange (SC)	2026	T6 CAIRP Class 6	Aggregate	Aggregate	Electricity	1.26234416	71.99866557	0	71.99866557	29.00866879	0	75.83731651
Orange (SC)	2026	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	68.31950463	13570.46233	13570.46233	0	1569.982216	1.319853958	0
Orange (SC)	2026	T6 CAIRP Class 7	Aggregate	Aggregate	Electricity	1.139588869	240.578455	0	240.578455	26.18775221	0	253.4050359
Orange (SC)	2026	T6 CAIRP Class 7	Aggregate	Aggregate	Natural Gas	0.057210546	10.94132941	10.94132941	0	1.31469834	0.001079399	0
Orange (SC)	2026	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	2586.043416	86413.55772	86413.55772	0	36902.83954	9.732549568	0
Orange (SC)	2026	T6 Instate Delivery Class 4	Aggregate	Aggregate	Electricity	34.09877882	1341.796944	0	1341.796944	486.5895737	0	1406.831565
Orange (SC)	2026	T6 Instate Delivery Class 4	Aggregate	Aggregate	Natural Gas	9.539587441	334.4720394	334.4720394	0	136.1299128	0.039930021	0
Orange (SC)	2026	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	2093.730466	70452.59078	70452.59078	0	29877.53376	7.909045091	0
Orange (SC)	2026	T6 Instate Delivery Class 5	Aggregate	Aggregate	Electricity	27.52549632	1089.022643	0	1089.022643	392.7888325	0	1141.805722
Orange (SC)	2026	T6 Instate Delivery Class 5	Aggregate	Aggregate	Natural Gas	6.719672057	240.9322593	240.9322593	0	95.88972026	0.028481798	0
Orange (SC)	2026	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	6518.815314	218111.2759	218111.2759	0	93023.49453	24.59200181	0
Orange (SC)	2026	T6 Instate Delivery Class 6	Aggregate	Aggregate	Electricity	82.57837742	3203.137636	0	3203.137636	1178.393446	0	3358.388282
Orange (SC)	2026	T6 Instate Delivery Class 6	Aggregate	Aggregate	Natural Gas	20.38516577	718.6879902	718.6879902	0	290.8963155	0.085161646	0
Orange (SC)	2026	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	855.101694	46087.71776	46087.71776	0	12202.30117	4.989020257	0
Orange (SC)	2026	T6 Instate Delivery Class 7	Aggregate	Aggregate	Electricity	4.444552364	217.2036069	0	217.2036069	63.42376223	0	227.7310972
Orange (SC)	2026	T6 Instate Delivery Class 7	Aggregate	Aggregate	Natural Gas	24.61893157	1339.469696	1339.469696	0	351.3121536	0.156397681	0
Orange (SC)	2026	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	2201.786653	91362.53169	91362.53169	0	25452.6537	10.24473807	0
Orange (SC)	2026	T6 Instate Other Class 4	Aggregate	Aggregate	Electricity	33.09459871	1533.144296	0	1533.144296	382.5735611	0	1607.513196
Orange (SC)	2026	T6 Instate Other Class 4	Aggregate	Aggregate	Natural Gas	7.046790801	303.6340678	303.6340678	0	81.46090166	0.035901136	0
Orange (SC)	2026	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	5208.918376	221675.1418	221675.1418	0	60215.09643	24.89281429	0
Orange (SC)	2026	T6 Instate Other Class 5	Aggregate	Aggregate	Electricity	69.73080303	3256.159535	0	3256.159535	806.088083	0	3414.107489
Orange (SC)	2026	T6 Instate Other Class 5	Aggregate	Aggregate	Natural Gas	15.68949722	686.5475389	686.5475389	0	181.3705879	0.08003703	0
Orange (SC)	2026	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	4279.73843	180555.5027	180555.5027	0	49473.77625	20.22925291	0
Orange (SC)	2026	T6 Instate Other Class 6	Aggregate	Aggregate	Electricity	61.09648027	2814.561976	0	2814.561976	706.2753119	0	2951.089164
Orange (SC)	2026	T6 Instate Other Class 6	Aggregate	Aggregate	Natural Gas	13.69706692	591.4263383	591.4263383	0	158.3380936	0.068926053	0
Orange (SC)	2026	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	2226.508752	100470.6886	100470.6886	0	25738.44117	11.05886173	0
Orange (SC)	2026	T6 Instate Other Class 7	Aggregate	Aggregate	Electricity	22.49766136	1525.168153	0	1525.168153	260.0729654	0	1599.150151
Orange (SC)	2026	T6 Instate Other Class 7	Aggregate	Aggregate	Natural Gas	57.45540403	2607.99841	2607.99841	0	664.1844706	0.308254601	0
Orange (SC)	2026	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	32.60112683	1647.584886	1647.584886	0	376.8690261	0.181313435	0
Orange (SC)	2026	T6 Instate Tractor Class 6	Aggregate	Aggregate	Electricity	0.414170629	25.67110097	0	25.67110097	4.787812471	0	26.91634029
Orange (SC)	2026	T6 Instate Tractor Class 6	Aggregate	Aggregate	Natural Gas	0.103926738	5.628269372	5.628269372	0	1.201393091	0.000636334	0
Orange (SC)	2026	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	1359.903966	81684.61633	81684.61633	0	15720.48984	8.394129444	0
Orange (SC)	2026	T6 Instate Tractor Class 7	Aggregate	Aggregate	Electricity	9.620207738	765.1278135	0	765.1278135	111.2096014	0	802.2422029
Orange (SC)	2026	T6 Instate Tractor Class 7	Aggregate	Aggregate	Natural Gas	32.43592152	1958.173914	1958.173914	0	374.9592527	0.223204344	0
Orange (SC)	2026	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.515292358	357.0931276	357.0931276	0	126.7414184	0.037393787	0
Orange (SC)	2026	T6 OOS Class 5	Aggregate	Aggregate	Diesel	7.222760049	489.8675572	489.8675572	0	165.9790259	0.051440633	0
Orange (SC)	2026	T6 OOS Class 6	Aggregate	Aggregate	Diesel	25.33880455	1280.037942	1280.037942	0	582.2857287	0.131458628	0
Orange (SC)	2026	T6 OOS Class 7	Aggregate	Aggregate	Diesel	37.29136542	9307.467553	9307.467553	0	856.9555774	0.895965293	0
Orange (SC)	2026	T6 Public Class 4	Aggregate	Aggregate	Diesel	127.6407249	4462.049446	4462.049446	0	654.7969185	0.51813934	0
Orange (SC)	2026	T6 Public Class 4	Aggregate	Aggregate	Electricity	2.108041319	91.05022215	0	91.05022215	10.81425197	0	95.77013567
Orange (SC)	2026	T6 Public Class 4	Aggregate	Aggregate	Natural Gas	17.05443762	686.5427022	686.5427022	0	87.489265	0.083946483	0
Orange (SC)	2026	T6 Public Class 5	Aggregate	Aggregate	Diesel	114.2331315	4105.032491	4105.032491	0	586.0159644	0.471901497	0
Orange (SC)	2026	T6 Public Class 5	Aggregate	Aggregate	Electricity	1.823513214	78.51110852	0	78.51110852	9.354622786	0	82.58101229
Orange (SC)	2026	T6 Public Class 5	Aggregate	Aggregate	Natural Gas	22.69319145	897.5220176	897.5220176	0	116.4160721	0.109274792	0
Orange (SC)	2026	T6 Public Class 6	Aggregate	Aggregate	Diesel	189.2070522	6711.654597	6711.654597	0	970.6321777	0.780659218	0
Orange (SC)	2026	T6 Public Class 6	Aggregate	Aggregate	Electricity	3.314560272	138.4217734	0	138.4217734	17.0036942	0	145.5973605
Orange (SC)	2026	T6 Public Class 6	Aggregate	Aggregate	Natural Gas	26.7294115	1063.955213	1063.955213	0	137.121881	0.12986917	0
Orange (SC)	2026	T6 Public Class 7	Aggregate	Aggregate	Diesel	334.6062925	15048.05689	15048.05689	0	1716.53028	1.708580112	0

Orange (SC)	2026	T6 Public Class 7	Aggregate	Aggregate	Electricity	5.911771415	372.3812057	0	372.3812057	30.32738736	0	391.6849158
Orange (SC)	2026	T6 Public Class 7	Aggregate	Aggregate	Natural Gas	36.9534519	1944.067226	1944.067226	0	189.5712082	0.2263051	0
Orange (SC)	2026	T6 Utility Class 5	Aggregate	Aggregate	Diesel	106.0095624	4273.921218	4273.921218	0	1356.922399	0.454714375	0
Orange (SC)	2026	T6 Utility Class 5	Aggregate	Aggregate	Electricity	3.059997766	132.7708252	0	132.7708252	39.16797141	0	139.6534752
Orange (SC)	2026	T6 Utility Class 5	Aggregate	Aggregate	Natural Gas	0.619794839	24.65720309	24.65720309	0	7.933373944	0.002757746	0
Orange (SC)	2026	T6 Utility Class 6	Aggregate	Aggregate	Diesel	20.02556311	804.5898869	804.5898869	0	256.3272078	0.085267826	0
Orange (SC)	2026	T6 Utility Class 6	Aggregate	Aggregate	Electricity	0.584488904	25.36131168	0	25.36131168	7.481457971	0	26.67600587
Orange (SC)	2026	T6 Utility Class 6	Aggregate	Aggregate	Natural Gas	0.194604931	7.484106818	7.484106818	0	2.490943123	0.0008411	0
Orange (SC)	2026	T6 Utility Class 7	Aggregate	Aggregate	Diesel	22.51661068	1113.755398	1113.755398	0	288.2126167	0.117240893	0
Orange (SC)	2026	T6 Utility Class 7	Aggregate	Aggregate	Electricity	0.666881285	40.48458256	0	40.48458256	8.536080452	0	42.58324552
Orange (SC)	2026	T6 Utility Class 7	Aggregate	Aggregate	Natural Gas	0.250752597	10.91070534	10.91070534	0	3.209633247	0.001209851	0
Orange (SC)	2026	T6TS	Aggregate	Aggregate	Gasoline	7090.881325	361926.9994	361926.9994	0	141874.3536	69.26601079	0
Orange (SC)	2026	T6TS	Aggregate	Aggregate	Electricity	50.88473986	4165.412643	0	4165.412643	1018.101875	0	4374.665833
Orange (SC)	2026	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1114.634198	226467.1438	226467.1438	0	25614.29386	35.47339112	0
Orange (SC)	2026	T7 CAIRP Class 8	Aggregate	Aggregate	Electricity	23.50576537	4724.599304	0	4724.599304	540.1624882	0	8463.227113
Orange (SC)	2026	T7 CAIRP Class 8	Aggregate	Aggregate	Natural Gas	4.478118547	900.1156392	900.1156392	0	102.9071642	0.157409174	0
Orange (SC)	2026	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1013.571423	275042.7231	275042.7231	0	23291.8713	41.48072507	0
Orange (SC)	2026	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	432.115432	99868.29538	99868.29538	0	9930.012627	15.51502973	0
Orange (SC)	2026	T7 POLA Class 8	Aggregate	Aggregate	Diesel	1549.248632	196150.9589	196150.9589	0	25345.70762	32.75841219	0
Orange (SC)	2026	T7 POLA Class 8	Aggregate	Aggregate	Electricity	6.120626687	678.1897633	0	678.1897633	100.1334526	0	1214.172155
Orange (SC)	2026	T7 POLA Class 8	Aggregate	Aggregate	Natural Gas	17.88459274	2246.260266	2246.260266	0	292.5919372	0.384408237	0
Orange (SC)	2026	T7 Public Class 8	Aggregate	Aggregate	Diesel	742.6363792	29997.49481	29997.49481	0	3809.724625	5.166127011	0
Orange (SC)	2026	T7 Public Class 8	Aggregate	Aggregate	Electricity	12.26566289	774.161004	0	774.161004	62.92285064	0	1385.193355
Orange (SC)	2026	T7 Public Class 8	Aggregate	Aggregate	Natural Gas	279.7460288	13943.75429	13943.75429	0	1435.097128	2.248747782	0
Orange (SC)	2026	T7 Single Concrete/Transit Mix Cl	Aggregate	Aggregate	Diesel	284.5974388	19517.784	19517.784	0	2680.907873	3.15340163	0
Orange (SC)	2026	T7 Single Concrete/Transit Mix Cl	Aggregate	Aggregate	Electricity	8.606968028	698.3122191	0	698.3122191	81.07763882	0	1248.976512
Orange (SC)	2026	T7 Single Concrete/Transit Mix Cl	Aggregate	Aggregate	Natural Gas	18.6356686	1329.782087	1329.782087	0	175.5479982	0.216102638	0
Orange (SC)	2026	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	1055.257696	60011.47421	60011.47421	0	9940.527498	10.05507641	0
Orange (SC)	2026	T7 Single Dump Class 8	Aggregate	Aggregate	Electricity	13.02789238	1059.432647	0	1059.432647	122.7227462	0	1894.863725
Orange (SC)	2026	T7 Single Dump Class 8	Aggregate	Aggregate	Natural Gas	78.83107725	4797.263307	4797.263307	0	742.5887477	0.836972531	0
Orange (SC)	2026	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	2477.30808	130151.8167	130151.8167	0	23336.24211	21.35908998	0
Orange (SC)	2026	T7 Single Other Class 8	Aggregate	Aggregate	Electricity	42.06767996	2851.626992	0	2851.626992	396.2775452	0	5100.319081
Orange (SC)	2026	T7 Single Other Class 8	Aggregate	Aggregate	Natural Gas	192.541744	10558.4238	10558.4238	0	1813.743229	1.80231407	0
Orange (SC)	2026	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	220.5038576	14317.99521	14317.99521	0	1014.317745	5.323102856	0
Orange (SC)	2026	T7 SWCV Class 8	Aggregate	Aggregate	Electricity	12.47925415	772.6671926	0	772.6671926	57.4045691	0	1379.990823
Orange (SC)	2026	T7 SWCV Class 8	Aggregate	Aggregate	Natural Gas	766.5704393	49603.75499	49603.75499	0	3526.224021	7.946606305	0
Orange (SC)	2026	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2718.928123	196057.1286	196057.1286	0	39506.02562	31.38783257	0
Orange (SC)	2026	T7 Tractor Class 8	Aggregate	Aggregate	Electricity	25.87760544	2095.804151	0	2095.804151	376.0016071	0	3752.747068
Orange (SC)	2026	T7 Tractor Class 8	Aggregate	Aggregate	Natural Gas	89.20321661	6510.001122	6510.001122	0	1296.122737	1.16214513	0
Orange (SC)	2026	T7 Utility Class 8	Aggregate	Aggregate	Diesel	79.39724546	3448.680265	3448.680265	0	1016.284742	0.553533348	0
Orange (SC)	2026	T7 Utility Class 8	Aggregate	Aggregate	Electricity	0.801111883	50.36790436	0	50.36790436	10.2542321	0	90.12245009
Orange (SC)	2026	T7IS	Aggregate	Aggregate	Gasoline	5.642094151	552.7116358	552.7116358	0	112.8870198	0.124867026	0
Orange (SC)	2026	T7IS	Aggregate	Aggregate	Electricity	0.044825649	11.55600118	0	11.55600118	0.89687158	0	20.65592366
Orange (SC)	2026	UBUS	Aggregate	Aggregate	Gasoline	256.8740368	42376.0564	42376.0564	0	1027.496147	3.473985672	0
Orange (SC)	2026	UBUS	Aggregate	Aggregate	Electricity	4.037405551	77.72005682	0	77.72005682	16.1496222	0	165.4036891
Orange (SC)	2026	UBUS	Aggregate	Aggregate	Natural Gas	578.8563618	111248.4647	111248.4647	0	2315.425447	37.35819755	0

Appendix B Archeological Records Research

Appendix

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South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395
California Historical Resources Information System
Los Angeles, Orange, Ventura and San Bernardino Counties
sccic@fullerton.edu

4/26/2023 SCCIC File #: 24641.10788

Elizabeth Kim
PlaceWorks (PBK-01.0)
3 MacArthur Place, Suite 1100
Santa Ana, CA 92727

Re: Record Search Results for the Costa Mesa High School Stadium Expansion Project

The South Central Coastal Information Center received your records search request for the project area referenced above, located on the Newport Beach, CA USGS 7.5' quadrangle(s). The following summary reflects the results of the records search for the project area and a ½-mile radius. The search includes a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest (SPHI), the California Historical Landmarks (SHL), the California Register of Historical Resources (CAL REG), the National Register of Historic Places (NRHP), and the California State Built Environment Resources Directory (BERD) listings were reviewed for the above referenced project site and a ½-mile radius. Due to the sensitive nature of cultural resources, archaeological site locations are not released.

RECORDS SEARCH RESULTS SUMMARY

Archaeological Resources* (*see Recommendations section)	Within project area: 0 Within project radius: 0
Built-Environment Resources	Within project area: 0 Within project radius: 3
Reports and Studies	Within project area: 1 Within project radius: 7
OHP Built Environment Resources Directory (BERD) 2022	Within project area: 0 Within ½-mile radius: 3
California Points of Historical Interest (SPHI) 2022	Within project area: 0 Within ½-mile radius: 0
California Historical Landmarks (SHL) 2022	Within project area: 0 Within ½-mile radius: 0
California Register of Historical Resources (CAL REG) 2022	Within project area: 0 Within ½-mile radius: 0
National Register of Historic Places (NRHP) 2022	Within project area: 0 Within ½-mile radius: 0

HISTORIC MAP REVIEW – Santa Ana, CA (1894, 1904) 15' USGS historic maps indicate that in 1894 there was no visible development within the project area. There several roads, two buildings and the historic place name of Fairview located within the project search radius. Also of note was the Santa Ana and Newport R.R. which ran along the very southeastern most edge of the project search radius. In 1904, there was still no visible development within the project area. A few of the roads and buildings were no longer visible. Three different buildings appeared and the historic place name of Fairview and the rail road remained.

RECOMMENDATIONS

**When we report that no archaeological resources are recorded in your project area or within a specified radius around the project area; that does not necessarily mean that nothing is there. It may simply mean that the area has not been studied and/or that no information regarding the archaeological sensitivity of the property has been filed at this office. The reported records search result does not preclude the possibility that surface or buried artifacts might be found during a survey of the property or ground-disturbing activities.*

The archaeological sensitivity of the project location is unknown because there are no previous studies for the subject property. Additionally, the natural ground-surface appears to be obscured by urban development; consequently, surface artifacts would not be visible during a survey. While there are currently no recorded archaeological sites within the project area, buried resources could potentially be unearthed during project activities. Therefore, customary caution and a halt-work condition should be in place for all ground-disturbing activities. In the event that any evidence of cultural resources is discovered, all work within the vicinity of the find should stop until a qualified archaeological consultant can assess the find and make recommendations. Moving or extraction of potential cultural resources should not be attempted by anyone other than a qualified cultural resources consultant. It is also recommended that the Native American Heritage Commission be consulted to identify if any additional traditional cultural properties or other sacred sites are known to be in the area. The NAHC may also refer you to local tribes with particular knowledge of potential sensitivity. The NAHC and local tribes may offer additional recommendations to what is provided here and may request an archaeological monitor. Finally, if the built-environment resources on the property are 45 years or older, a qualified architectural historian should be retained to study the property and make recommendations regarding those structures.

For your convenience, you may find a professional consultant**at www.chrisinfo.org. Any resulting reports by the qualified consultant should be submitted to the South Central Coastal Information Center as soon as possible.

**The SCCIC does not endorse any particular consultant and makes no claims about the qualifications of any person listed. Each consultant on this list self-reports that they meet current professional standards.

If you have any questions regarding the results presented herein, please contact the office at 657.278.5395 Monday through Thursday 9:00 am to 3:30 pm. Should you require any additional information for the above referenced project, reference the SCCIC number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System,

Isabela Kot
Assistant Coordinator, GIS Program Specialist

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

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California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

July 1, 2010 SCCIC #10663.7426

Ms. Jeanette McKenna
McKenna et al.
6008 Friends Ave.
Whittier, CA 90601-3724
(562) 696-3852

RE: Records Search for McKenna et al No. 1490, Costa Mesa High School Campus, 2650 Fairview Road, Costa Mesa, CA.

Dear Ms. McKenna,

As per your request received on June 30, 2010, a records search was conducted for the above referenced project. The search includes a review of all recorded archaeological sites within a ½-mile radius of the project site as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (CR), the National Register of Historic Places (NR), and the California State Historic Resources Inventory (HRI) listings were reviewed for the above referenced project. The following is a discussion of the findings.

Newport Beach, CA. USGS 7.5' Quadrangle

ARCHAEOLOGICAL RESOURCES:

No archaeological sites have been identified within a ½-mile radius of the project site. No archaeological sites are located within the project site. No isolates have been identified within a ½-mile radius of the project site. No isolates are located within the project site.

HISTORIC RESOURCES:

Three cultural resources (30-176871, 30-176874, and 30-179852) have been identified within a ½-mile radius of the project site. No cultural resources are located within the project site.

Copies of our historic maps - NAME (YEAR) 15' USGS - are enclosed for your review.

The California Point of Historical Interest of the Office of Historic Preservation, Department of Parks and Recreation, lists one property within a ½-mile radius of the project site (see below).

ORA-002 (Site of) Former Santa Ana Army Air Base
1.4 acre, inside West entrance to Orange County
Fairgrounds, Costa Mesa #30-162281

The California Historical Landmarks of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a ½-mile radius of the project site.

The California Register of Historic Places lists no properties within a ½-mile radius of the project site. These are properties determined to have a National Register of Historic Places Status of 1 or 2, a California Historical Landmark numbering 770 and higher, or a Point of Historical Interest listed after 1/1/1998.

The National Register of Historic Places lists no properties within a ½-mile radius of the project site.

The California Historic Resources Inventory lists two properties that have been evaluated for historical significance within a ½-mile radius of the project site (see enclosed list).

PREVIOUS CULTURAL RESOURCES INVESTIGATIONS:

Six studies (OR643, OR1016*, OR1197, OR2256*, OR3407, and OR3807) have been conducted within a ½-mile radius of the project site. Of these, two are located within the project site. There are seven additional investigations located on the Newport Beach, CA. 7.5' USGS Quadrangle that are potentially within a ½-mile radius of the project site. These reports are not mapped due to insufficient locational information.
(= Located within the project site)*

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you **do not include** resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at 657.278.5395 Monday through Thursday 9:00 am to 3:30 pm.

Should you require any additional information for the above referenced project, reference the SCCIC number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Sincerely,
SCCIC

Albert Garcia
Staff Researcher

Enclosures:

(X) Maps – Newport Beach, CA. 7.5' USGS Quadrangle;
Santa Ana, CA. 15' USGS Quadrangle – 6 pages
(X) Bibliography – 2 pages
(X) Bibliography of Unmappable Reports – 2 pages
(X) National Register Status Codes – 3 pages
(X) Site Records – (30-176871, 30-176874, and 30-179852) – 5 pages
(X) Survey Reports – (OR643, OR1016*, OR1197, OR2256*, OR3407, and OR3807) – 92 pages
(X) Confidentiality Form
(X) Invoice #10663.7426

SCCIC Bibliography: SCCIC #10663

OR-00643

Author(s): Romani, John F.
Year: 1982
Title: Archaeological Survey Report for the ORA-55 Corridor
Affiliation: Caltrans
Resources: 30-000059, 30-000060, 30-000297
Quads: NEWPORT BEACH
Pages:
Notes:

OR-01016

Author(s): Leonard, Nelson N. III
Year: 1975
Title: Environmental Impact Evaluation: Route Alternates Between the Michelson Treatment Plant and Plants on the Santa Ana River, Orange County, California
Affiliation: University of California, Riverside
Resources: 30-000057, 30-000076, 30-000121, 30-000164, 30-000165, 30-000170, 30-000174, 30-000193, 30-000347, 30-000348, 30-000351
Quads: NEWPORT BEACH
Pages:
Notes:

OR-01197

Author(s): Brown, Joan C.
Year: 1992
Title: Cultural Resources Reconnaissance of Ten Miles of the Santa Ana-delhi Channel Complex, Orange County, California
Affiliation: RMW Paleo Associates, Inc.
Resources:
Quads: NEWPORT BEACH
Pages:
Notes:

OR-02256

Author(s): Demcak, Carol R.
Year: 1999
Title: Cultural Resources Assessments for Orange County Sanitation Disctricts
Affiliation: Archaeological Resource Management Corp.
Resources: 30-000083, 30-000084, 30-000085, 30-000086, 30-000087, 30-000144, 30-000277, 30-000288, 30-000289, 30-000300, 30-000352, 30-000353, 30-000381, 30-001352
Quads: ANAHEIM, LA HABRA, LOS ALAMITOS, NEWPORT BEACH, ORANGE, SEAL BEACH, TUSTIN, YORBA LINDA
Pages:
Notes:

SCCIC Bibliography: SCCIC #10663

OR-03407

Author(s): Anonymous
Year: 2007
Title: Cultural Resources Study of the Vanguard Project, Royal Street Communications, Llc Site No. La2816a, 55 Fiar Drive, Costa Mesa, Orange County, California 92626
Affiliation: Historic Resource Associates
Resources:
Quads: NEWPORT BEACH
Pages:
Notes:

OR-03807

Author(s): Bonner, Wayne and Said, Arabesque
Year: 2009
Title: Cultural Resource Records Search and Site Visit Results for T-Mobile USA Candidate LA33508A (Sunflour Bakery), 2950 Grace Lane, Costa Mesa, Orange County, California
Affiliation: MBA
Resources:
Quads: NEWPORT BEACH
Pages: 10
Notes:

NEWPORT BEACH, CA. USGS 7.5'

SCCIC Bibliography. . Unmappables

OR-01558

Author(s): Hastey, Ed
Year: 1992
Title: Proposed South Coast Resource Management Plan and Final Environmental Impact Statement
Affiliation: Bureau of Land Management
Resources:
Quads: ACTON, AGUA DULCE, ALBERHILL, BEVERLY HILLS, BLACK MTN, BLACK STAR CANYON, BURBANK, BURNT PEAK, CALABASAS, CANADA GOBERNADORA, CANOGA PARK, CHILAO FLAT, COBBLESTONE MTN, CONDOR PEAK, CORONA SOUTH, CRYSTAL LAKE, DANA POINT, EL TORO, GREEN VALLEY, HOLLYWOOD, JUNIPER HILLS, LA LIEBRE RANCH, LAGUNA BEACH, LAKE HUGHES, LEBEC, LITTLEROCK, MALIBU BEACH, MESCAL CREEK, MINT CANYON, MOUNT SAN ANTONIO, NEENACH SCHOOL, NEWHALL, NEWPORT BEACH, OAT MOUNTAIN, ORANGE, PACIFICO MOUNTAIN, PALMDALE, POINT DUME, PRADO DAM, RITTER RIDGE, SAN CLEMENTE, SAN FERNANDO, SAN JUAN CAPISTRANO, SAN PEDRO, SANTA SUSANA, SANTIAGO PEAK, SEAL BEACH, SITTON PEAK, SLEEPY VALLEY, SUNLAND, THOUSAND OAKS, TOPANGA, TORRANCE, TRIUNFO PASS, TUSTIN, VAL VERDE, VALYERMO, VAN NUYS, WARM SPRINGS MOUNTAIN, WATERMAN MTN, WHITAKER PEAK
Pages:
Notes: Indexed report. This report consists of a huge overview of Los Angeles and Orange counties and involves all Orange County quads and all except the NE quads of Los Angeles Co. All the Quad no. were entered. See report for full listing of Quad names.

OR-01889

Author(s): Bradshaw, M.F.
Year: 1936
Title: The California Vine Disease Bulletin No. 2
Affiliation: Department of Agriculture
Resources:
Quads: ANAHEIM, NEWPORT BEACH
Pages:
Notes: Unmappable

OR-02016

Author(s): Unknown
Year: 1977
Title: Newporter North Archaeology Phase I Report
Affiliation: Westec Services, Inc
Resources: 30-000050, 30-000051, 30-000052, 30-000064, 30-000099, 30-000100, 30-000518
Quads: NEWPORT BEACH
Pages:
Notes:

OR-03267

Author(s): Shepard, Richard S. and Roger D. Mason
Year: 2001
Title: Cultural Resources Records Search and Constraints Analysis Report: Lax/south (orange County) High Speed Ground Access Study, Los Angeles and Orange Counties, California
Affiliation: Chambers Group, Inc.
Resources: 19-000088, 19-000831, 19-001575, 30-000062, 30-000113, 30-000195, 30-000373, 30-001352, 30-001538
Quads: ANAHEIM, EL TORO, INGLEWOOD, LONG BEACH, LOS ALAMITOS, LOS ANGELES, NEWPORT BEACH, ORANGE, SEAL BEACH, SOUTH GATE, TORRANCE, TUSTIN, VENICE, WHITTIER
Pages:
Notes:

NEWPORT BEACH, CA. USGS 7.5'

SCCIC Bibliography: Unmappables

OR-03622

Author(s): Wesson, Alex
Year: 2002
Title: Results of Archaeological Survey Conducted at Proposed "sandalwood Network" Verizon Wireless Transmission Facility Site, Orange County, California
Affiliation: URS Corporation
Resources:
Quads: NEWPORT BEACH
Pages:
Notes:

OR-03662

Author(s): Bonner, Wayne H.
Year: 2007
Title: Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA23205A (SCE M6-T3 Barre-Ellis), Blue Bird Avenue, Fountain Valley, Orange County, California
Affiliation: Michael Brandman Associates
Resources: 30-000145, 30-000283, 30-000302, 30-000356
Quads: NEWPORT BEACH
Pages: 16
Notes:

OR-03860

Author(s): Ni Ghabhlain, Sinead and Drew Pallette
Year: 2001
Title: A Cultural Resources Inventory of the Proposed Reroute of the PF. Net/AT&T Fiber Optics Conduit, Los Angeles to Marine Corps Base Camp Pendleton, Los Angeles and Orange Counties, California
Affiliation: ASM Affiliates
Resources: 19-166921, 19-167276, 30-000392, 30-000543, 30-001304, 30-176547, 30-176548, 30-176549, 30-176550, 30-176551, 30-176552, 30-176553, 30-176554, 30-176555
Quads: ANAHEIM, HOLLYWOOD, LONG BEACH, NEWPORT BEACH, SOUTH GATE, TUSTIN
Pages: 49
Notes: Unmappable. Same as LA10429.

PROPERTY-NUMBER	PRIMARY-#	STREET.ADDRESS............	NAMES............................	CITY.NAME........	OWN	YR-C	OHP-PROG..	PRG-REFERENCE-NUMBER	STAT-DAT	NRS	CRIT
095528	30-162417		CABIN #45-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095527	30-162416		CABIN #44-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095526	30-162415		CABIN #41-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095525	30-162414		CABIN #40-TRABUCO TRACT	CLE NF		1927	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095524	30-162413		CABIN #39-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095523	30-162412		CABIN #37-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095521	30-162411		CABIN #36-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	
095519	30-162410		CABIN #29-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095518	30-162409		CABIN #20-TRABUCO TRACT	CLE NF		1980	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095517	30-162408		CABIN #22-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095516	30-162407		CABIN #15-TRABUCO TRACT	CLE NF		1927	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095515	30-162406		CABIN #14-TRABUCO TRACT	CLE NF		1927	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095513	30-162404		CABIN #11-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095512	30-162403		CABIN #10-TRABUCO TRACT	CLE NF		1924	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095511	30-162402		CABIN #9-TRABUCO TRACT	CLE NF		1982	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095510	30-162401		CABIN #8-TRABUCO TRACT	CLE NF		1965	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095509	30-162400		CABIN #3-TRABUCO TRACT	CLE NF		1920	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095514	30-162405		CABIN #12-TRABUCO TRACT	CLE NF		1924	PROJ.REVW.	USFS950130C	03/27/95	6Y	
090092	30-162275		RESIDENCE-SILVERADO RANGER STATION	CLE NF	U	1959	PROJ.REVW.	USFS940418H	07/08/94	6Y	
164410			BLUE JAY CAMPGROUND	CLE NF	F	1930	PROJ.REVW.	USFS061023A	11/01/06	6Y	
164411			EL CARISO CAMPGROUND	CLE NF	F	1930	PROJ.REVW.	USFS061023A	11/01/06	2S2	
090888	30-162280	SANTA ANA MOUNTAIN RA	OLD SADDLEBACK, OR, SANTIAGO AND M	CLE NF	F		HIST.RES.	SPHI-ORA-001	07/28/70	7L	
136564		611 HELIOTROPE AVE	CORONA DEL MAR COMMUNITY CONGREGAT	CORONA DEL MAR	P	1945	HIST.RES.	DOE-30-02-0020-0000	12/18/02	6Y	
							PROJ.REVW.	FCC020913G	12/18/02	6Y	
035879	30-156521	1900 ADAMS AVE	DIEGO SEPULVEDA ADOBE	COSTA MESA	M	1825	HIST.SURV.	2628-0002-0000		3S	
							HIST.RES.	SHL-0227-0000	06/20/35	7L	
165769		327 BOWLING GREEN		COSTA MESA	P	1957	PROJ.REVW.	HUD070323C	03/26/07	6Y	
175235		920 CEDAR PL		COSTA MESA	P	1954	PROJ.REVW.	HUD090126N	02/25/09	6Y	
162588		939 CEDAR ST		COSTA MESA	P	1954	PROJ.REVW.	HUD060616F	06/19/06	6Y	
065186	30-161802	626 CENTER ST	RESIDENCE	COSTA MESA	U		PROJ.REVW.	HUD870507B	06/02/87	6Y	
171256		768 CENTER ST		COSTA MESA	P	1955	PROJ.REVW.	HUD080425S	05/05/08	6Y	
171337		2145 COLLEGE AVE		COSTA MESA	P	1957	PROJ.REVW.	HUD080516B	05/19/08	6Y	
169925		853 CONGRESS		COSTA MESA	P	1954	PROJ.REVW.	HUD080211E	02/27/08	6Y	
167398		934 CONGRESS		COSTA MESA	P	1954	PROJ.REVW.	HUD070820C	08/30/07	6Y	
174842		2034 CONTINENTAL AVE		COSTA MESA	P	1954	PROJ.REVW.	HUD090116C	02/13/09	6Y	
169966		2248 CONTINENTAL AVE		COSTA MESA	P	1957	PROJ.REVW.	HUD080204S	02/08/08	6Y	
173142		431 COSTA MESA ST		COSTA MESA	P	1950	PROJ.REVW.	HUD080926E	10/06/08	6Y	
172963		866 DARRELL ST		COSTA MESA	P	1956	PROJ.REVW.	HUD080905C	09/11/08	6Y	
172964		940 DARRELL ST		COSTA MESA	P	1956	PROJ.REVW.	HUD080905B	09/11/08	6Y	
175236		944 DARRELL ST		COSTA MESA	P	1956	PROJ.REVW.	HUD090126P	02/25/09	6Y	
171267		956 DARRELL ST		COSTA MESA	P	1952	PROJ.REVW.	HUD080424B	05/05/08	6Y	
174195		919 DOGWOOD		COSTA MESA	P	1954	PROJ.REVW.	HUD081201B	12/09/08	6Y	
175963		140 E 20TH ST		COSTA MESA	P	1948	PROJ.REVW.	HUD090428P	05/15/09	6Y	
154977		920 EVERGREEN PL		COSTA MESA	P	1954	PROJ.REVW.	HUD050711K	07/26/05	6Y	
154008		2129 FEDERAL AVE		COSTA MESA	P	1954	PROJ.REVW.	HUD050506B	05/09/05	6Y	
163231		3002 FERNHEATH LANE		COSTA MESA	P	1955	PROJ.REVW.	HUD060914A	09/15/06	6Y	
154885		429 FLOWER ST		COSTA MESA	P	1947	PROJ.REVW.	HUD050711A	07/26/05	6Y	
168902		2541 GREENBRIAR		COSTA MESA	P	1956	PROJ.REVW.	HUD071113B	11/19/07	6Y	
171318		226 HILL PL		COSTA MESA	P	1954	PROJ.REVW.	HUD080416F	04/25/08	6Y	
167456		277 HILL PL		COSTA MESA	P	1954	PROJ.REVW.	HUD070824G	09/10/07	6Y	
175073		913 JOANN ST		COSTA MESA	P	1956	PROJ.REVW.	HUD090310A	03/30/09	6Y	
163735		2531 LEHIGH PL		COSTA MESA	P	1956	PROJ.REVW.	HUD061109C	11/09/06	6Y	
173141		974 LINDEN PL		COSTA MESA	P	1954	PROJ.REVW.	HUD081001D	10/06/08	6Y	
152769		301 MAGNOLIA ST	LIGHTHOUSE COASTAL COMMUNITY CHURC	COSTA MESA	P	1953	HIST.RES.	DOE-30-05-0003-0000	03/25/05	6Y	

PROPERTY-NUMBER	PRIMARY-#	STREET.ADDRESS.............	NAMES............................	CITY.NAME........	OWN	YR-C	OHP-PROG..	PRG-REFERENCE-NUMBER	STAT-DAT	NRS	CRIT
							PROJ.REVW.	FCC050314J	03/25/05	6Y	
069786	30-161864	MAIN ST	SAKIOKA FARMS	COSTA MESA	U	1920	PROJ.REVW.	UMTA890407A	12/19/90	6Y	
176669		1937 MAPLE AVE		COSTA MESA	P	1953	PROJ.REVW.	HUD090812F	09/09/09	6Y	
166577		2168 MEYER PL		COSTA MESA	P	1957	PROJ.REVW.	HUD070717A	07/19/07	6Y	
171355		2179 MEYER PL		COSTA MESA	P	1957	PROJ.REVW.	HUD080516A	05/19/08	6Y	
154113		1513 N HARBOR BLVD		COSTA MESA	P	1953	PROJ.REVW.	FHWA010405A	05/29/01	6Y	
171061		1726 NEWPORT BLVD	TOWER RECORDS	COSTA MESA	P	1947	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171058		1749 NEWPORT BLVD	CAFE RUBA	COSTA MESA	P	1954	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171057		1759 NEWPORT BLVD	HOUSE OF FLYS INC/FANFARE TIFFANY	COSTA MESA	P	1956	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171027		1766 NEWPORT BLVD	EL MATADOR & GLOBAL PERFORMANCE	COSTA MESA	P	1923	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171056		1780 NEWPORT BLVD	COCOCABANA AND FUTON EMPORIUM	COSTA MESA	P	1952	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171055		1781 NEWPORT BLVD	SECOND SPIN INC, AND MITHRUSH	COSTA MESA	P	1956	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171054		1784 NEWPORT BLVD	CAL'S CADDYSHACK	COSTA MESA	P	1940	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171053		1785 NEWPORT BLVD	MAINLY SECONDS-POTTERY, PLANTS AND	COSTA MESA	P	1925	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171052		1788 NEWPORT BLVD	SANDPIPER UPHOLSTERY INTERIORS AND	COSTA MESA	P	1946	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171051		1794 NEWPORT BLVD	LUBIANI II, INC	COSTA MESA	P	1922	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171050		1796 NEWPORT BLVD	NEWPORT HARBOR OPTOMETRY	COSTA MESA	P	1950	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171029		1799 NEWPORT BLVD		COSTA MESA	P	1920	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171049		1800 NEWPORT BLVD	GENX LIVING	COSTA MESA	P	1941	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171048		1804 NEWPORT BLVD	BODYWORK EMPORIUM	COSTA MESA	P	1952	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171047		1806 NEWPORT BLVD	JUSTIN RAY'S & ORIENTAL ART CONSIG	COSTA MESA	P	1924	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171046		1810 NEWPORT BLVD	VAC & SEW, COSTUME CONNECTION & PE	COSTA MESA	P	1926	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171040		1820 NEWPORT BLVD	THE TICKET SHACK	COSTA MESA	P	1929	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171039		1822 NEWPORT BLVD	CHERISHED BEGINNINGS / LISY B'S	COSTA MESA	P	1919	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171038		1824 NEWPORT BLVD	THE HELM	COSTA MESA	P	1929	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171037		1830 NEWPORT BLVD	HENRY ADN HARRY'S GOAT HILL TAVERN	COSTA MESA	P	1930	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171035		1836 NEWPORT BLVD	COAST JEWELRY / PACIFIC TIME / TER	COSTA MESA	P	1919	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171034		1840 NEWPORT BLVD	ARSEN'S EUROPEAN TAILORING/ALTERAT	COSTA MESA	P	1929	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171025		1848 NEWPORT BLVD	AIRCALL WIRELESS	COSTA MESA	P	1929	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171026		1858 NEWPORT BLVD	DIANE PSYCHIC	COSTA MESA	P	1928	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171033		1872 NEWPORT BLVD	PENGUIN PFORMALWEAR	COSTA MESA	P	1948	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171028		1901 NEWPORT BLVD	NEWPORT PLAZA/MCNALLY CONTINUATION	COSTA MESA	P	1933	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171032		1930 NEWPORT BLVD	RENT 1 EQUIPMENT RENTAL	COSTA MESA	P	1949	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171031		1934 NEWPORT BLVD	ADVANCED AUTOCARE	COSTA MESA	P	1950	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171030		1938 NEWPORT BLVD	A&G IMPORT SERVICE	COSTA MESA	P	1950	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
069497	30-161861	2150 NEWPORT BLVD	STATION MASTER'S HOUSE	COSTA MESA	P	1891	PROJ.REVW.	FHWA820804C	10/13/82	2S	AC
							HIST.RES.	DOE-30-82-0001-0000	10/13/82	2S	AC
164810		899 OAK ST		COSTA MESA	P	1954	PROJ.REVW.	HUD070209A	02/21/07	6Y	
176339		920 OAK ST		COSTA MESA	P	1954	PROJ.REVW.	HUD090126C	02/25/09	6Y	
154892		1928 ORANGE AVE		COSTA MESA	P	1909	PROJ.REVW.	HUD050711E	07/26/05	6Y	
090889	30-162281	ORANGE COUNTY FAIR GR	SANTA ANA ARMY AIR BASE SITE	COSTA MESA	C	1942	HIST.RES.	SPHI-ORA-002	07/28/70	7L	
175216		2136 PARSONS ST		COSTA MESA	P	1957	PROJ.REVW.	HUD090129E	02/26/09	6Y	
174259		830 PINE PL		COSTA MESA	P	1953	PROJ.REVW.	HUD081212D	12/23/08	6Y	
148621		2040 PLACENTIA AVE	ALANO CLUB OF COSTA MESA	COSTA MESA	P	1951	HIST.RES.	DOE-30-04-0004-0000	03/17/04	6Y	
							PROJ.REVW.	FCC040213B	03/17/04	6Y	
171268		2004 POMONA AVE		COSTA MESA	P	1951	PROJ.REVW.	HUD080424A	05/05/08	6Y	
165768		969 POST RD		COSTA MESA	P	1956	PROJ.REVW.	HUD070323D	03/26/07	6Y	
167982		2070 PRESIDENT PL		COSTA MESA	P	1954	PROJ.REVW.	HUD071011E	10/15/07	6Y	
163366		2112 PRESIDENT PL		COSTA MESA	P	1954	PROJ.REVW.	HUD060905B	09/06/06	6Y	
162366		2218 PUENTE AVE		COSTA MESA	P	1955	PROJ.REVW.	HUD080616E	07/01/08	6Y	
							PROJ.REVW.	HUD060512AA	05/12/06	6Y	
154886		3006 ROYCE LANE		COSTA MESA	P	1955	PROJ.REVW.	HUD050711C	07/26/05	6Y	
154893		3037 ROYCE LANE		COSTA MESA	P	1955	PROJ.REVW.	HUD050711F	07/26/05	6Y	
154975		2182 RURAL ST		COSTA MESA	P	1951	PROJ.REVW.	HUD050711H	07/26/05	6Y	
154092		417 S HARBOR BLVD		COSTA MESA	P	1954	PROJ.REVW.	FHWA010405A	05/29/01	6Y	
154087		3597 S HARBOR BLVD		COSTA MESA	P	1948	PROJ.REVW.	FHWA010405A	05/29/01	6Y	

McKenna et al.

History/Archaeology/Architectural History/Ethnography/Paleontology

Jeanette A. McKenna, MA
Registered Prof. Archaeologist
Owner and Principal Investigator

July 5, 2010

THE PLANNING CENTER
Attn: Elizabeth Kim
1580 Metro Drive
Costa Mesa, California 92626

RE: Archaeological Records Search, Costa Mesa High School, Orange County, CA.

Ms. Kim:

In response to your request, McKenna et al. completed a standard archaeological records search for the Costa Mesa High School, Costa Mesa, Orange County, through the California State University, Fullerton, South Central Coastal Information Center. I have attached the relevant data to support the research.

The Costa Mesa High School campus is located at 2650 Fairview Road, Costa Mesa, Orange County, California. Illustrated on the attached maps (Thomas Brothers Map and USGS Newport Beach Quadrangle; Figures 1 and 2, respectively), the school site is bounded by Fairview Road (west); Arlington Drive and the Orange County Fair and Exposition Center (south); the Costa Mesa Farm Sports Complex (north); and the Davis School and Tewinkle Park Sports Complex (east). The Costa Mesa High School building complex is located in the western portion of the property (Figure 3).

To summarize the findings, a review of historic maps showed no improvements within or near the school site in 1896 nor 1901. The community of Costa Mesa is not identified on these maps, but the community of "Fairview" is identified. In ca. 1901, there are a few residences located south of Arlington Drive (an existing roadway identified on the maps), but the area now associated with Costa Mesa High School and the Costa Mesa Farm Sports Complex is identified as a marsh or swamp (per USGS symbols). This area would have required significant alteration to accommodate the more recent development(s).

Costa Mesa High School was established in 1958 and initially identified on the 1965 version of the USGS Newport Beach Quadrangle. It was expended prior to the 1981 version of the map. The current configuration, therefore, dates between 1958-1981.

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(562) 696-3852 OFFICE and FAX (562) 754-7712 CELL (480) 664-0682 AZ

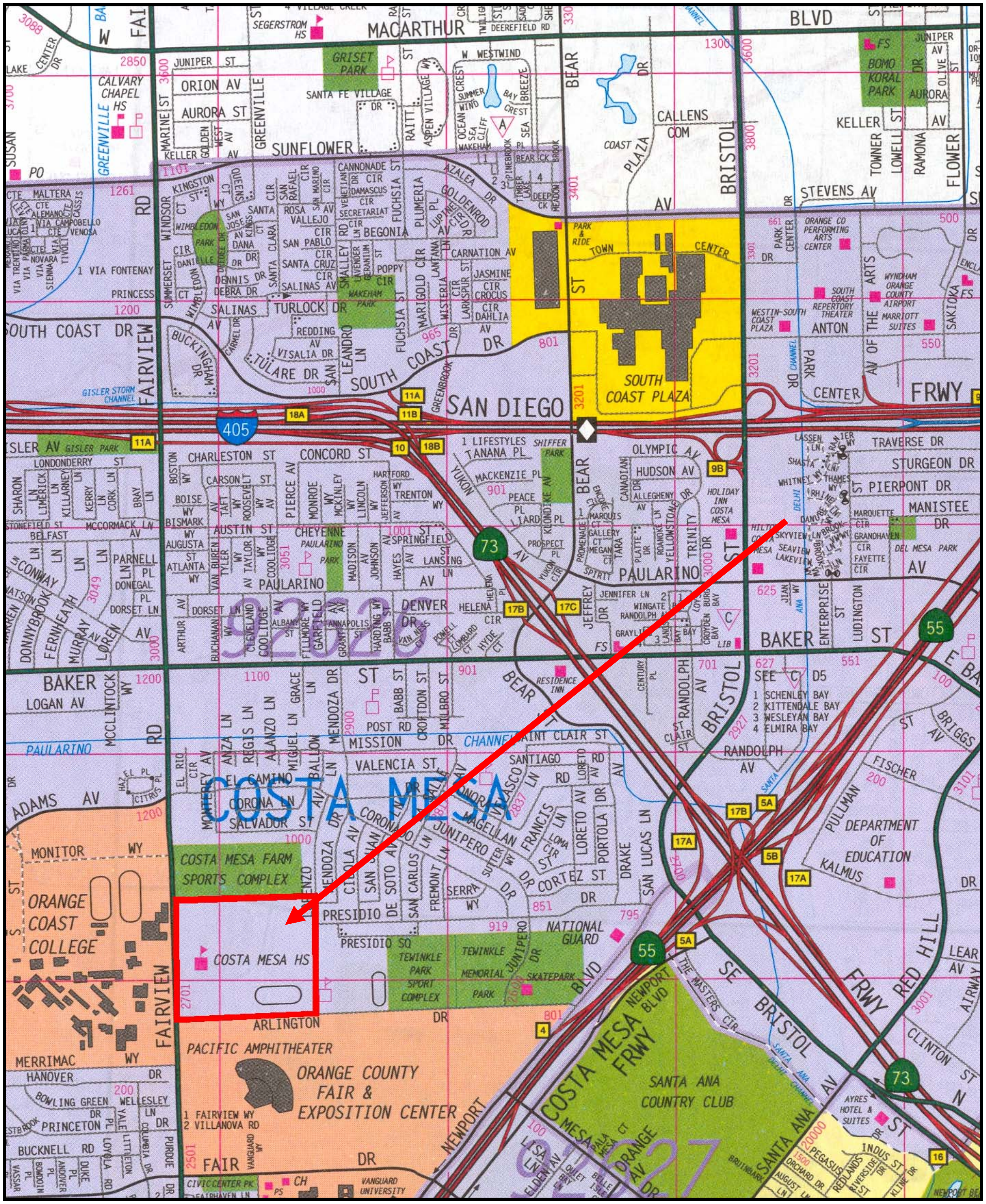

Figure 1. Location of Costa Mesa High School (Thomas Brothers Map).

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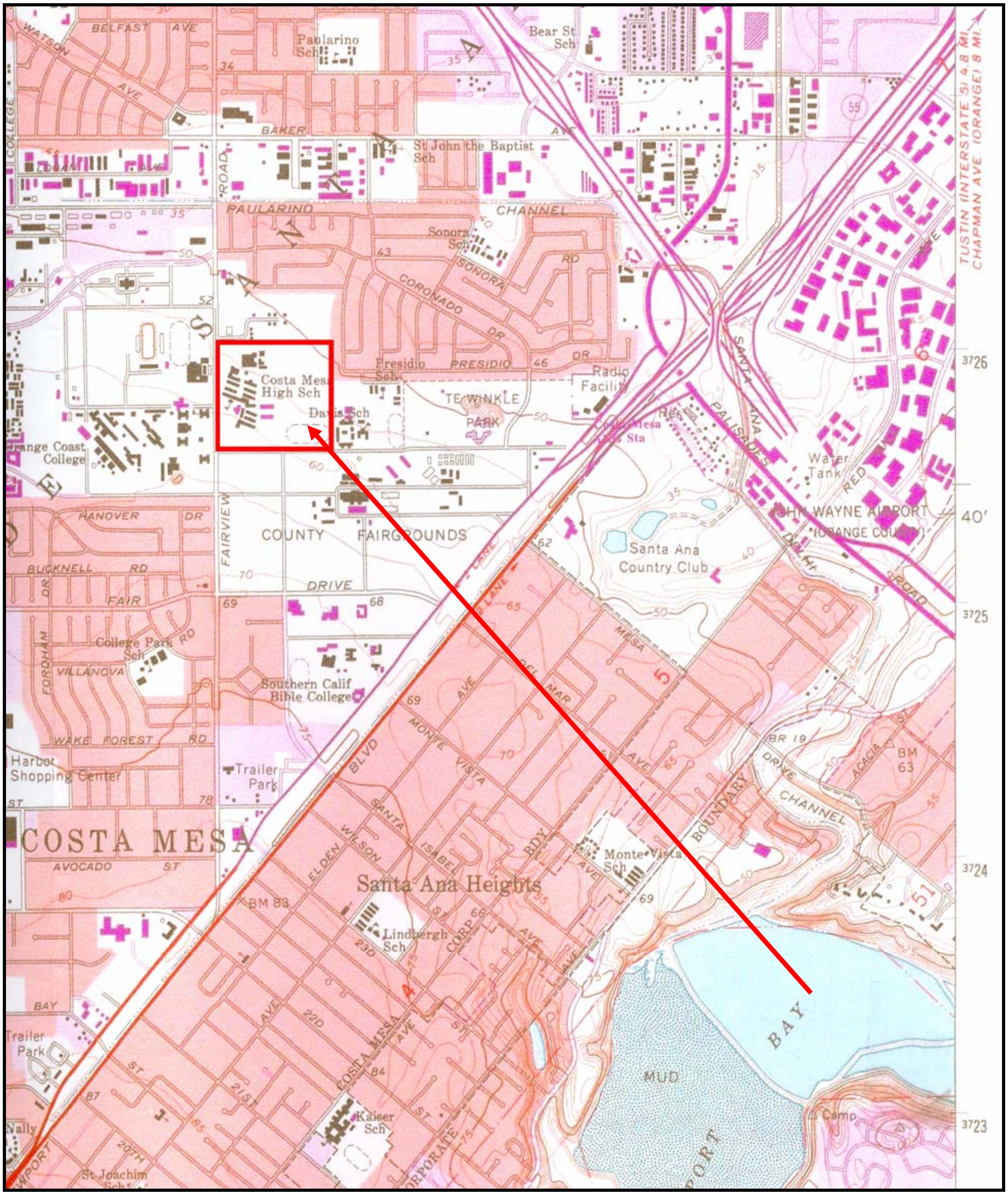

Figure 2. USGS Newport Beach Quadrangle Illustrating the Costa Mesa High School Campus (ca. 1981).

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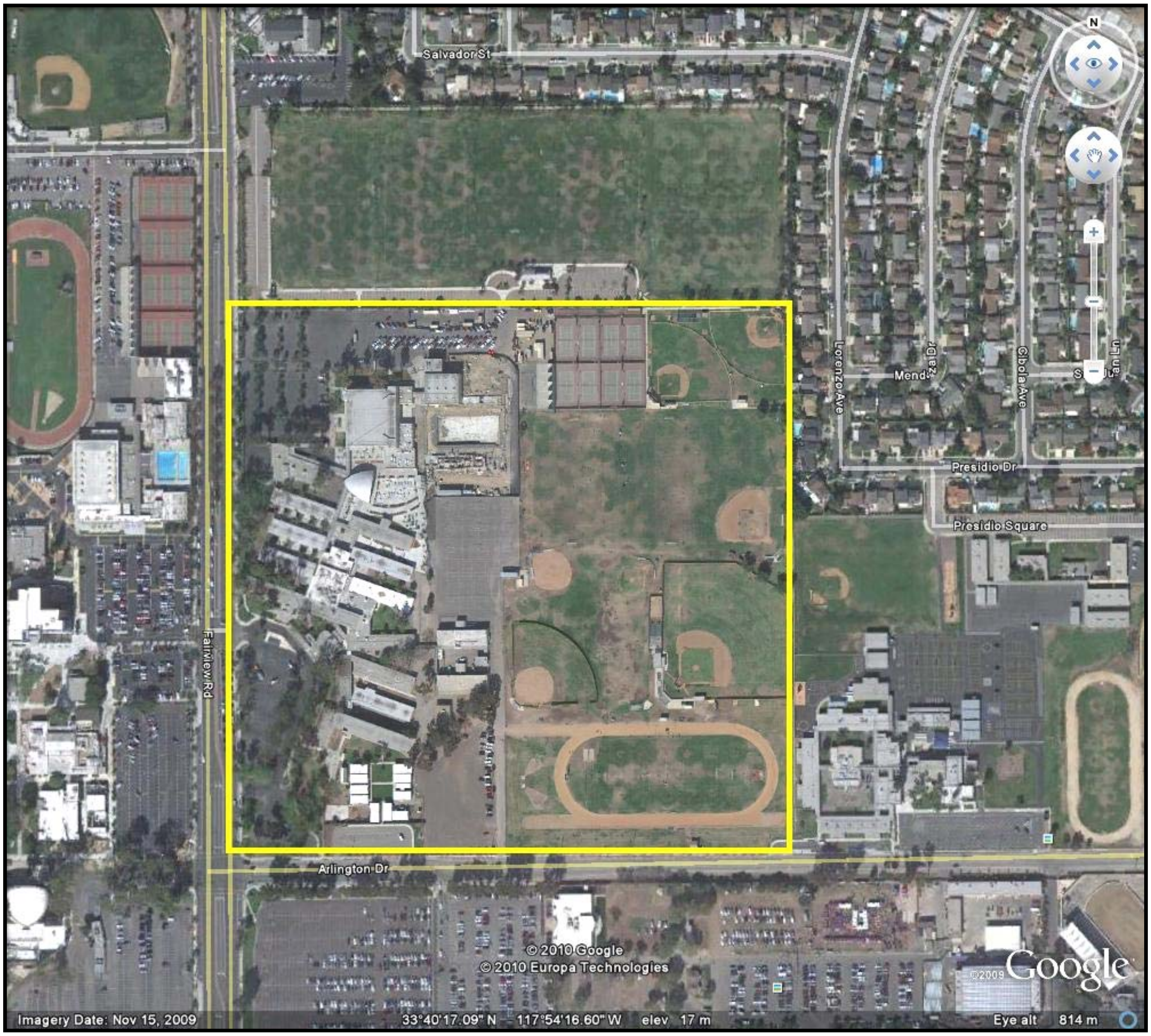

Figure 3. Aerial Photographic Illustrating the Current Costa Mesa High School Campus.

The City of Costa Mesa and the historic community of Fairview are located between the Santa Ana River and the Upper Newport Bay. This areas is also associated with the historic Rancho Santiago del Santa Ana and, therefore, not subdivided by Township/ Range/Section. Nonetheless, the area can be identified as being within the equivalent of Township 6South, Range 10 West, and the eastern had of Section 10 – had the area been subdivided in the U.S. government system.

A total of six (6) studies were identified within a one half mile radius of the Costa Mesa High School campus, including: Romani (1982; OR-643); Leonard (1975;OR-1016); Brown (1992; OR-1197); Demcak (1999; OR-2256); Anonymous (2007; OR-3407); and

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Bonner and Arabesque (2009; OR-3907). Two studies addressed cell tower sites. Another seven (7) studies were identified as “unmappable” studies, including: Hastey (1992; OR-1558); Bradshaw (1936; OR-1889); Westec Services, Inc. (1977; OR-2016); Shepard and Mason (2001; OR-3267); Wesson (2002; OR-3622); Bonner (2007; OR 3662); and Ni Ghabhlain and Pallette (2001; OR-3860).

Of the studies identified above, one study (Leonard 1975) involved alternative pipeline alignments that bordered the southern and western boundaries of the campus) – on Arlington Drive and Fairview Road. Another study (Demcak 1999) involved an Orange County Sanitation District alignment on Fairview Road. No studies definitively addressed the Costa Mesa High School campus.

Despite the extent of studies completed within this general area and the relative sensitivity for the area between the Santa Ana River Upper Newport Bay to yield evidence of prehistoric use of the area, only three historic resources have been identified within one half mile of the campus: 30-176871, 30-176874, and 30-179852.

- **30-176871** was recorded by Reeves (2007) and identified as a 1956 residential structure located at 969 Post Road. This resource was not evaluated for significance and was apparently recorded simply because of its relative age (51 years of age in 2007). This resource is approximately one half mile northeast of the campus and will not be affected by any alterations of the campus.

- **30-176874** was recorded by Baker (2006) and described as a 1955 residence located at 3002 Fernheath. This residence was deeme3d ineligible for listing as a historical resources and, like 30-176871, appears to have been recorded simply because of its age. This residence is located approximately one half mile northwest of the campus and will not be impacted by any alterations to the campus.

- **30-179852** was recorded in 2007 by Supernowicz and described as a ca. 1960s seven-story commercial structure with the Vanguard University campus (Huntington Hall). An evaluation of the building resulted in a determination by Supernowicz that the resource is eligible for listing under Criteria A, B, and C. Despite these findings, the building is not yet listed in any of the applicable registers. This building is located approximately one half mile south of the Costa Mesa High School campus (south of the Fairgrounds) and will not be affected by any alterations to the existing campus.

In addition to the three historic resources identified above, two additional properties were identified during research: 327 Bowling Green, Costa Mesa, a ca. 1957 building determined to be ineligible for listing; and, the Santa Ana Army Air Base Site (CA-ORA-

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002), a 1942+ facility identified as a California Point of Historical Interest. Neither of these will be impacted by alterations to the high school campus.

In summary, research completed to date in the vicinity of the Costa Mesa High School campus identified the school property as never having been surveyed for cultural resources. In fact, there has been a limited amount of research in the vicinity of the school, as the areas was developed prior to the initiation of required studies. The area has a general assessment as having a **LOW to MODERATE** level of sensitivity for prehistoric archaeological resources (based on its geographical location); a **LOW** level of sensitivity of historic archaeological resources (being within a historic rancho and near the historic community of Fairview); and a **LOW to NO** level of sensitivity for historic built-environment resources (e.g. buildings or structures).

Based on these findings, McKenna et al. recommends the Costa Mesa High School property be considered sensitive for archaeological resources (prehistoric or historic) and, should improvements within the campus involve extensive earthmoving, an archaeological monitor should be on-call to assess any identified resources. The District may opt to have an archaeological monitor on site on a part-time or full-time basis, at their discretion. Should any cultural resources be identified within the school property, the find(s) must be evaluated in accordance with CEQA and local guidelines and an on-site archaeological monitor should oversee the remaining earthmoving activities. If any archaeological resources are identified as being of Native American origin, a Native American of Juaneño descent monitor should also be involved in the monitoring program. If, at any time, evidence of human remains is uncovered, the County Coroner must be notified within 24 hours and all protocols followed for compliance with local and state laws.

Please feel free to review the attached materials and call if you have any questions or require any clarifications.

Sincerely,

Jeanette A. McKenna

Jeanette A. McKenna, Principal
McKenna et al.

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South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395 / FAX 657.278.5542
anthro.fullerton.edu/sccic.html - sccic@fullerton.edu
California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

July 1, 2010 SCCIC #10663.7426

Ms. Jeanette McKenna
McKenna et al.
6008 Friends Ave.
Whittier, CA 90601-3724
(562) 696-3852

RE: Records Search for McKenna et al No. 1490, Costa Mesa High School Campus, 2650 Fairview Road, Costa Mesa, CA.

Dear Ms. McKenna,

As per your request received on June 30, 2010, a records search was conducted for the above referenced project. The search includes a review of all recorded archaeological sites within a ½-mile radius of the project site as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the California Register of Historical Resources (CR), the National Register of Historic Places (NR), and the California State Historic Resources Inventory (HRI) listings were reviewed for the above referenced project. The following is a discussion of the findings.

Newport Beach, CA. USGS 7.5' Quadrangle

ARCHAEOLOGICAL RESOURCES:

No archaeological sites have been identified within a ½-mile radius of the project site. No archaeological sites are located within the project site. No isolates have been identified within a ½-mile radius of the project site. No isolates are located within the project site.

HISTORIC RESOURCES:

Three cultural resources (30-176871, 30-176874, and 30-179852) have been identified within a ½-mile radius of the project site. No cultural resources are located within the project site.

Copies of our historic maps - NAME (YEAR) 15' USGS - are enclosed for your review.

The California Point of Historical Interest of the Office of Historic Preservation, Department of Parks and Recreation, lists one property within a ½-mile radius of the project site (see below).

ORA-002 (Site of) Former Santa Ana Army Air Base
1.4 acre, inside West entrance to Orange County
Fairgrounds, Costa Mesa #30-162281

The California Historical Landmarks of the Office of Historic Preservation, Department of Parks and Recreation, lists no properties within a ½-mile radius of the project site.

The California Register of Historic Places lists no properties within a ½-mile radius of the project site. These are properties determined to have a National Register of Historic Places Status of 1 or 2, a California Historical Landmark numbering 770 and higher, or a Point of Historical Interest listed after 1/1/1998.

The National Register of Historic Places lists no properties within a ½-mile radius of the project site.

The California Historic Resources Inventory lists two properties that have been evaluated for historical significance within a ½-mile radius of the project site (see enclosed list).

PREVIOUS CULTURAL RESOURCES INVESTIGATIONS:

Six studies (OR643, OR1016*, OR1197, OR2256*, OR3407, and OR3807) have been conducted within a ½-mile radius of the project site. Of these, two are located within the project site. There are seven additional investigations located on the Newport Beach, CA. 7.5' USGS Quadrangle that are potentially within a ½-mile radius of the project site. These reports are not mapped due to insufficient locational information.
(= Located within the project site)*

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you **do not include** resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at 657.278.5395 Monday through Thursday 9:00 am to 3:30 pm.

Should you require any additional information for the above referenced project, reference the SCCIC number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Sincerely,
SCCIC

Albert Garcia
Staff Researcher

Enclosures:

(X) Maps – Newport Beach, CA. 7.5' USGS Quadrangle;
Santa Ana, CA. 15' USGS Quadrangle – 6 pages
(X) Bibliography – 2 pages
(X) Bibliography of Unmappable Reports – 2 pages
(X) National Register Status Codes – 3 pages
(X) Site Records – (30-176871, 30-176874, and 30-179852) – 5 pages
(X) Survey Reports – (OR643, OR1016*, OR1197, OR2256*, OR3407, and OR3807) – 92 pages
(X) Confidentiality Form
(X) Invoice #10663.7426

SCCIC Bibliography: SCCIC #10663

OR-00643

Author(s): Romani, John F.
Year: 1982
Title: Archaeological Survey Report for the ORA-55 Corridor
Affiliation: Caltrans
Resources: 30-000059, 30-000060, 30-000297
Quads: NEWPORT BEACH
Pages:
Notes:

OR-01016

Author(s): Leonard, Nelson N. III
Year: 1975
Title: Environmental Impact Evaluation: Route Alternates Between the Michelson Treatment Plant and Plants on the Santa Ana River, Orange County, California
Affiliation: University of California, Riverside
Resources: 30-000057, 30-000076, 30-000121, 30-000164, 30-000165, 30-000170, 30-000174, 30-000193, 30-000347, 30-000348, 30-000351
Quads: NEWPORT BEACH
Pages:
Notes:

OR-01197

Author(s): Brown, Joan C.
Year: 1992
Title: Cultural Resources Reconnaissance of Ten Miles of the Santa Ana-delhi Channel Complex, Orange County, California
Affiliation: RMW Paleo Associates, Inc.
Resources:
Quads: NEWPORT BEACH
Pages:
Notes:

OR-02256

Author(s): Demcak, Carol R.
Year: 1999
Title: Cultural Resources Assessments for Orange County Sanitation Disctricts
Affiliation: Archaeological Resource Management Corp.
Resources: 30-000083, 30-000084, 30-000085, 30-000086, 30-000087, 30-000144, 30-000277, 30-000288, 30-000289, 30-000300, 30-000352, 30-000353, 30-000381, 30-001352
Quads: ANAHEIM, LA HABRA, LOS ALAMITOS, NEWPORT BEACH, ORANGE, SEAL BEACH, TUSTIN, YORBA LINDA
Pages:
Notes:

SCCIC Bibliography: SCCIC #10663

OR-03407

Author(s): Anonymous
Year: 2007
Title: Cultural Resources Study of the Vanguard Project, Royal Street Communications, Llc Site No. La2816a, 55 Fiar Drive, Costa Mesa, Orange County, California 92626
Affiliation: Historic Resource Associates
Resources:
Quads: NEWPORT BEACH
Pages:
Notes:

OR-03807

Author(s): Bonner, Wayne and Said, Arabesque
Year: 2009
Title: Cultural Resource Records Search and Site Visit Results for T-Mobile USA Candidate LA33508A (Sunflour Bakery), 2950 Grace Lane, Costa Mesa, Orange County, California
Affiliation: MBA
Resources:
Quads: NEWPORT BEACH
Pages: 10
Notes:

NEWPORT BEACH, CA. USGS 7.5'

OR-01558

Author(s): Hastey, Ed
Year: 1992
Title: Proposed South Coast Resource Management Plan and Final Environmental Impact Statement
Affiliation: Bureau of Land Management
Resources:
Quads: ACTON, AGUA DULCE, ALBERHILL, BEVERLY HILLS, BLACK MTN, BLACK STAR CANYON, BURBANK, BURNT PEAK, CALABASAS, CANADA GOBERNADORA, CANOGA PARK, CHILAO FLAT, COBBLESTONE MTN, CONDOR PEAK, CORONA SOUTH, CRYSTAL LAKE, DANA POINT, EL TORO, GREEN VALLEY, HOLLYWOOD, JUNIPER HILLS, LA LIEBRE RANCH, LAGUNA BEACH, LAKE HUGHES, LEBEC, LITTLEROCK, MALIBU BEACH, MESCAL CREEK, MINT CANYON, MOUNT SAN ANTONIO, NEENACH SCHOOL, NEWHALL, NEWPORT BEACH, OAT MOUNTAIN, ORANGE, PACIFICO MOUNTAIN, PALMDALE, POINT DUME, PRADO DAM, RITTER RIDGE, SAN CLEMENTE, SAN FERNANDO, SAN JUAN CAPISTRANO, SAN PEDRO, SANTA SUSANA, SANTIAGO PEAK, SEAL BEACH, SITTON PEAK, SLEEPY VALLEY, SUNLAND, THOUSAND OAKS, TOPANGA, TORRANCE, TRIUNFO PASS, TUSTIN, VAL VERDE, VALYERMO, VAN NUYS, WARM SPRINGS MOUNTAIN, WATERMAN MTN, WHITAKER PEAK
Pages:
Notes: Indexed report. This report consists of a huge overview of Los Angeles and Orange counties and involves all Orange County quads and all except the NE quads of Los Angeles Co. All the Quad no. were entered. See report for full listing of Quad names.

OR-01889

Author(s): Bradshaw, M.F.
Year: 1936
Title: The California Vine Disease Bulletin No. 2
Affiliation: Department of Agriculture
Resources:
Quads: ANAHEIM, NEWPORT BEACH
Pages:
Notes: Unmappable

OR-02016

Author(s): Unknown
Year: 1977
Title: Newporter North Archaeology Phase I Report
Affiliation: Westec Services, Inc
Resources: 30-000050, 30-000051, 30-000052, 30-000064, 30-000099, 30-000100, 30-000518
Quads: NEWPORT BEACH
Pages:
Notes:

OR-03267

Author(s): Shepard, Richard S. and Roger D. Mason
Year: 2001
Title: Cultural Resources Records Search and Constraints Analysis Report: Lax/south (orange County) High Speed Ground Access Study, Los Angeles and Orange Counties, California
Affiliation: Chambers Group, Inc.
Resources: 19-000088, 19-000831, 19-001575, 30-000062, 30-000113, 30-000195, 30-000373, 30-001352, 30-001538
Quads: ANAHEIM, EL TORO, INGLEWOOD, LONG BEACH, LOS ALAMITOS, LOS ANGELES, NEWPORT BEACH, ORANGE, SEAL BEACH, SOUTH GATE, TORRANCE, TUSTIN, VENICE, WHITTIER
Pages:
Notes:

NEWPORT BEACH, CA. USGS 7.5'

OR-03622

Author(s): Wesson, Alex
Year: 2002
Title: Results of Archaeological Survey Conducted at Proposed "sandalwood Network" Verizon Wireless Transmission Facility Site, Orange County, California
Affiliation: URS Corporation
Resources:
Quads: NEWPORT BEACH
Pages:
Notes:

OR-03662

Author(s): Bonner, Wayne H.
Year: 2007
Title: Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA23205A (SCE M6-T3 Barre-Ellis), Blue Bird Avenue, Fountain Valley, Orange County, California
Affiliation: Michael Brandman Associates
Resources: 30-000145, 30-000283, 30-000302, 30-000356
Quads: NEWPORT BEACH
Pages: 16
Notes:

OR-03860

Author(s): Ni Ghabhlain, Sinead and Drew Pallette
Year: 2001
Title: A Cultural Resources Inventory of the Proposed Reroute of the PF. Net/AT&T Fiber Optics Conduit, Los Angeles to Marine Corps Base Camp Pendleton, Los Angeles and Orange Counties, California
Affiliation: ASM Affiliates
Resources: 19-166921, 19-167276, 30-000392, 30-000543, 30-001304, 30-176547, 30-176548, 30-176549, 30-176550, 30-176551, 30-176552, 30-176553, 30-176554, 30-176555
Quads: ANAHEIM, HOLLYWOOD, LONG BEACH, NEWPORT BEACH, SOUTH GATE, TUSTIN
Pages: 49
Notes: Unmappable. Same as LA10429.

PROPERTY-NUMBER	PRIMARY-#	STREET.ADDRESS............	NAMES...........................	CITY.NAME........	OWN	YR-C	OHP-PROG..	PRG-REFERENCE-NUMBER	STAT-DAT	NRS	CRIT
095528	30-162417		CABIN #45-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095527	30-162416		CABIN #44-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095526	30-162415		CABIN #41-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095525	30-162414		CABIN #40-TRABUCO TRACT	CLE NF		1927	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095524	30-162413		CABIN #39-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095523	30-162412		CABIN #37-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095521	30-162411		CABIN #36-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	
095519	30-162410		CABIN #29-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095518	30-162409		CABIN #20-TRABUCO TRACT	CLE NF		1980	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095517	30-162408		CABIN #22-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095516	30-162407		CABIN #15-TRABUCO TRACT	CLE NF		1927	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095515	30-162406		CABIN #14-TRABUCO TRACT	CLE NF		1927	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095513	30-162404		CABIN #11-TRABUCO TRACT	CLE NF		1923	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095512	30-162403		CABIN #10-TRABUCO TRACT	CLE NF		1924	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095511	30-162402		CABIN #9-TRABUCO TRACT	CLE NF		1982	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095510	30-162401		CABIN #8-TRABUCO TRACT	CLE NF		1965	PROJ.REVW.	USFS950130C	03/27/95	6Y	
095509	30-162400		CABIN #3-TRABUCO TRACT	CLE NF		1920	PROJ.REVW.	USFS950130C	03/27/95	2S2	AC
095514	30-162405		CABIN #12-TRABUCO TRACT	CLE NF		1924	PROJ.REVW.	USFS950130C	03/27/95	6Y	
090092	30-162275		RESIDENCE-SILVERADO RANGER STATION	CLE NF	U	1959	PROJ.REVW.	USFS940418H	07/08/94	6Y	
164410			BLUE JAY CAMPGROUND	CLE NF	F	1930	PROJ.REVW.	USFS061023A	11/01/06	6Y	
164411			EL CARISO CAMPGROUND	CLE NF	F	1930	PROJ.REVW.	USFS061023A	11/01/06	2S2	
090888	30-162280	SANTA ANA MOUNTAIN RA	OLD SADDLEBACK, OR, SANTIAGO AND M	CLE NF	F		HIST.RES.	SPHI-ORA-001	07/28/70	7L	
136564		611 HELIOTROPE AVE	CORONA DEL MAR COMMUNITY CONGREGAT	CORONA DEL MAR	P	1945	HIST.RES.	DOE-30-02-0020-0000	12/18/02	6Y	
							PROJ.REVW.	FCC020913G	12/18/02	6Y	
035879	30-156521	1900 ADAMS AVE	DIEGO SEPULVEDA ADOBE	COSTA MESA	M	1825	HIST.SURV.	2628-0002-0000		3S	
							HIST.RES.	SHL-0227-0000	06/20/35	7L	
165769		327 BOWLING GREEN		COSTA MESA	P	1957	PROJ.REVW.	HUD070323C	03/26/07	6Y	
175235		920 CEDAR PL		COSTA MESA	P	1954	PROJ.REVW.	HUD090126N	02/25/09	6Y	
162588		939 CEDAR ST		COSTA MESA	P	1954	PROJ.REVW.	HUD060616F	06/19/06	6Y	
065186	30-161802	626 CENTER ST	RESIDENCE	COSTA MESA	U		PROJ.REVW.	HUD870507B	06/02/87	6Y	
171256		768 CENTER ST		COSTA MESA	P	1955	PROJ.REVW.	HUD080425S	05/05/08	6Y	
171337		2145 COLLEGE AVE		COSTA MESA	P	1957	PROJ.REVW.	HUD080516B	05/19/08	6Y	
169925		853 CONGRESS		COSTA MESA	P	1954	PROJ.REVW.	HUD080211E	02/27/08	6Y	
167398		934 CONGRESS		COSTA MESA	P	1954	PROJ.REVW.	HUD070820C	08/30/07	6Y	
174842		2034 CONTINENTAL AVE		COSTA MESA	P	1954	PROJ.REVW.	HUD090116C	02/13/09	6Y	
169966		2248 CONTINENTAL AVE		COSTA MESA	P	1957	PROJ.REVW.	HUD080204S	02/08/08	6Y	
173142		431 COSTA MESA ST		COSTA MESA	P	1950	PROJ.REVW.	HUD080926E	10/06/08	6Y	
172963		866 DARRELL ST		COSTA MESA	P	1956	PROJ.REVW.	HUD080905C	09/11/08	6Y	
172964		940 DARRELL ST		COSTA MESA	P	1956	PROJ.REVW.	HUD080905B	09/11/08	6Y	
175236		944 DARRELL ST		COSTA MESA	P	1956	PROJ.REVW.	HUD090126P	02/25/09	6Y	
171267		956 DARRELL ST		COSTA MESA	P	1952	PROJ.REVW.	HUD080424B	05/05/08	6Y	
174195		919 DOGWOOD		COSTA MESA	P	1954	PROJ.REVW.	HUD081201B	12/09/08	6Y	
175963		140 E 20TH ST		COSTA MESA	P	1948	PROJ.REVW.	HUD090428P	05/15/09	6Y	
154977		920 EVERGREEN PL		COSTA MESA	P	1954	PROJ.REVW.	HUD050711K	07/26/05	6Y	
154008		2129 FEDERAL AVE		COSTA MESA	P	1954	PROJ.REVW.	HUD050506B	05/09/05	6Y	
163231		3002 FERNHEATH LANE		COSTA MESA	P	1955	PROJ.REVW.	HUD060914A	09/15/06	6Y	
154885		429 FLOWER ST		COSTA MESA	P	1947	PROJ.REVW.	HUD050711A	07/26/05	6Y	
168902		2541 GREENBRIAR		COSTA MESA	P	1956	PROJ.REVW.	HUD071113B	11/19/07	6Y	
171318		226 HILL PL		COSTA MESA	P	1954	PROJ.REVW.	HUD080416F	04/25/08	6Y	
167456		277 HILL PL		COSTA MESA	P	1954	PROJ.REVW.	HUD070824G	09/10/07	6Y	
175073		913 JOANN ST		COSTA MESA	P	1956	PROJ.REVW.	HUD090310A	03/30/09	6Y	
163735		2531 LEHIGH PL		COSTA MESA	P	1956	PROJ.REVW.	HUD061109C	11/09/06	6Y	
173141		974 LINDEN PL		COSTA MESA	P	1954	PROJ.REVW.	HUD081001D	10/06/08	6Y	
152769		301 MAGNOLIA ST	LIGHTHOUSE COASTAL COMMUNITY CHURC	COSTA MESA	P	1953	HIST.RES.	DOE-30-05-0003-0000	03/25/05	6Y	

PROPERTY-NUMBER	PRIMARY-#	STREET.ADDRESS............	NAMES............................	CITY.NAME........	OWN	YR-C	OHP-PROG..	PRG-REFERENCE-NUMBER	STAT-DAT	NRS	CRIT
							PROJ.REVW.	FCC050314J	03/25/05	6Y	
069786	30-161864	MAIN ST	SAKIOKA FARMS	COSTA MESA	U	1920	PROJ.REVW.	UMTA890407A	12/19/90	6Y	
176669		1937 MAPLE AVE		COSTA MESA	P	1953	PROJ.REVW.	HUD090812F	09/09/09	6Y	
166577		2168 MEYER PL		COSTA MESA	P	1957	PROJ.REVW.	HUD070717A	07/19/07	6Y	
171355		2179 MEYER PL		COSTA MESA	P	1957	PROJ.REVW.	HUD080516A	05/19/08	6Y	
154113		1513 N HARBOR BLVD		COSTA MESA	P	1953	PROJ.REVW.	FHWA010405A	05/29/01	6Y	
171061		1726 NEWPORT BLVD	TOWER RECORDS	COSTA MESA	P	1947	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171058		1749 NEWPORT BLVD	CAFE RUBA	COSTA MESA	P	1954	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171057		1759 NEWPORT BLVD	HOUSE OF FLYS INC/FANFARE TIFFANY	COSTA MESA	P	1956	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171027		1766 NEWPORT BLVD	EL MATADOR & GLOBAL PERFORMANCE	COSTA MESA	P	1923	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171056		1780 NEWPORT BLVD	COCOCABANA AND FUTON EMPORIUM	COSTA MESA	P	1952	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171055		1781 NEWPORT BLVD	SECOND SPIN INC, AND MITHRUSH	COSTA MESA	P	1956	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171054		1784 NEWPORT BLVD	CAL'S CADDYSHACK	COSTA MESA	P	1940	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171053		1785 NEWPORT BLVD	MAINLY SECONDS-POTTERY, PLANTS AND	COSTA MESA	P	1925	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171052		1788 NEWPORT BLVD	SANDPIPER UPHOLSTERY INTERIORS AND	COSTA MESA	P	1946	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171051		1794 NEWPORT BLVD	LUBIANI II, INC	COSTA MESA	P	1922	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171050		1796 NEWPORT BLVD	NEWPORT HARBOR OPTOMETRY	COSTA MESA	P	1950	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171029		1799 NEWPORT BLVD		COSTA MESA	P	1920	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171049		1800 NEWPORT BLVD	GENX LIVING	COSTA MESA	P	1941	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171048		1804 NEWPORT BLVD	BODYWORK EMPORIUM	COSTA MESA	P	1952	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171047		1806 NEWPORT BLVD	JUSTIN RAY'S & ORIENTAL ART CONSIG	COSTA MESA	P	1924	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171046		1810 NEWPORT BLVD	VAC & SEW, COSTUME CONNECTION & PE	COSTA MESA	P	1926	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171040		1820 NEWPORT BLVD	THE TICKET SHACK	COSTA MESA	P	1929	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171039		1822 NEWPORT BLVD	CHERISHED BEGINNINGS / LISY B'S	COSTA MESA	P	1919	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171038		1824 NEWPORT BLVD	THE HELM	COSTA MESA	P	1929	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171037		1830 NEWPORT BLVD	HENRY ADN HARRY'S GOAT HILL TAVERN	COSTA MESA	P	1930	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171035		1836 NEWPORT BLVD	COAST JEWELRY / PACIFIC TIME / TER	COSTA MESA	P	1919	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171034		1840 NEWPORT BLVD	ARSEN'S EUROPEAN TAILORING/ALTERAT	COSTA MESA	P	1929	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171025		1848 NEWPORT BLVD	AIRCALL WIRELESS	COSTA MESA	P	1929	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171026		1858 NEWPORT BLVD	DIANE PSYCHIC	COSTA MESA	P	1928	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171033		1872 NEWPORT BLVD	PENGUIN PFORMALWEAR	COSTA MESA	P	1948	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171028		1901 NEWPORT BLVD	NEWPORT PLAZA/MCNALLY CONTINUATION	COSTA MESA	P	1933	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171032		1930 NEWPORT BLVD	RENT 1 EQUIPMENT RENTAL	COSTA MESA	P	1949	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171031		1934 NEWPORT BLVD	ADVANCED AUTOCARE	COSTA MESA	P	1950	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
171030		1938 NEWPORT BLVD	A&G IMPORT SERVICE	COSTA MESA	P	1950	PROJ.REVW.	FHWA040217H	05/26/04	6Y	
069497	30-161861	2150 NEWPORT BLVD	STATION MASTER'S HOUSE	COSTA MESA	P	1891	PROJ.REVW.	FHWA820804C	10/13/82	2S	AC
							HIST.RES.	DOE-30-82-0001-0000	10/13/82	2S	AC
164810		899 OAK ST		COSTA MESA	P	1954	PROJ.REVW.	HUD070209A	02/21/07	6Y	
176339		920 OAK ST		COSTA MESA	P	1954	PROJ.REVW.	HUD090126C	02/25/09	6Y	
154892		1928 ORANGE AVE		COSTA MESA	P	1909	PROJ.REVW.	HUD050711E	07/26/05	6Y	
090889	30-162281	ORANGE COUNTY FAIR GR	SANTA ANA ARMY AIR BASE SITE	COSTA MESA	C	1942	HIST.RES.	SPHI-ORA-002	07/28/70	7L	
175216		2136 PARSONS ST		COSTA MESA	P	1957	PROJ.REVW.	HUD090129E	02/26/09	6Y	
174259		830 PINE PL		COSTA MESA	P	1953	PROJ.REVW.	HUD081212D	12/23/08	6Y	
148621		2040 PLACENTIA AVE	ALANO CLUB OF COSTA MESA	COSTA MESA	P	1951	HIST.RES.	DOE-30-04-0004-0000	03/17/04	6Y	
							PROJ.REVW.	FCC040213B	03/17/04	6Y	
171268		2004 POMONA AVE		COSTA MESA	P	1951	PROJ.REVW.	HUD080424A	05/05/08	6Y	
165768		969 POST RD		COSTA MESA	P	1956	PROJ.REVW.	HUD070323D	03/26/07	6Y	
167982		2070 PRESIDENT PL		COSTA MESA	P	1954	PROJ.REVW.	HUD071011E	10/15/07	6Y	
163366		2112 PRESIDENT PL		COSTA MESA	P	1954	PROJ.REVW.	HUD060905B	09/06/06	6Y	
162366		2218 PUENTE AVE		COSTA MESA	P	1955	PROJ.REVW.	HUD080616E	07/01/08	6Y	
							PROJ.REVW.	HUD060512AA	05/12/06	6Y	
154886		3006 ROYCE LANE		COSTA MESA	P	1955	PROJ.REVW.	HUD050711C	07/26/05	6Y	
154893		3037 ROYCE LANE		COSTA MESA	P	1955	PROJ.REVW.	HUD050711F	07/26/05	6Y	
154975		2182 RURAL ST		COSTA MESA	P	1951	PROJ.REVW.	HUD050711H	07/26/05	6Y	
154092		417 S HARBOR BLVD		COSTA MESA	P	1954	PROJ.REVW.	FHWA010405A	05/29/01	6Y	
154087		3597 S HARBOR BLVD		COSTA MESA	P	1948	PROJ.REVW.	FHWA010405A	05/29/01	6Y	

Appendix C Noise Modeling Data

Appendix

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Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00

PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual.* Prepared by ICF International.

BASELINE NOISE MONITORING DATA

Measurement Report

Report Summary

Meter's File Name	LxT_Data.005.s	Computer's File Name	LxT_0005426-20221007 205556-LxT_Data.005.ldbin
Meter	LxT1 0005426	Firmware	2.404
User	RP	Location	ST-1
Job Description	NMU-22.0		
Note			

Start Time	2022-10-07 20:55:56	Duration	0:20:36.6		
End Time	2022-10-07 21:16:33	Run Time	0:15:01.6	Pause Time	0:05:35.0
Pre-Calibration	2022-10-07 19:31:05	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	56.0 dB		
LAE	85.6 dB	SEA	--- dB
EA	39.9 µPa²h		
EA8	1.3 mPa²h		
EA40	6.4 mPa²h		
LZS_{peak}	91.0 dB	2022-10-07 21:11:30	
LAS_{max}	68.5 dB	2022-10-07 21:06:05	
LAS_{min}	44.3 dB	2022-10-07 21:16:19	
LA_{eq}	56.0 dB		
LC_{eq}	68.6 dB	LC_{eq} - LA_{eq}	12.6 dB
LAI_{eq}	59.9 dB	LAI_{eq} - LA_{eq}	3.9 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 90.0 dB	0	0:00:00.0
LZSpk > 105.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

L_{DN}	L_{Day}	L_{Night}	
--- dB	--- dB	0.0 dB	
L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
--- dB	--- dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	55.8 dB		--- dB		--- dB	
$LS_{(max)}$	68.5 dB	2022-10-07 21:06:05	--- dB	None	--- dB	None
$LS_{(min)}$	44.3 dB	2022-10-07 21:16:19	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	91.0 dB	2022-10-07 21:11:30

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 2.0	63.6 dB
LAS 8.0	60.2 dB
LAS 25.0	57.0 dB
LAS 50.0	52.6 dB
LAS 90.0	47.6 dB
LAS 100.0	44.4 dB

Measurement Report

Report Summary

Meter's File Name	LxT_Data.002.s	Computer's File Name	LxT_0005426-20221007 193438-LxT_Data.002.ldbin
Meter	LxT1 0005426	Firmware	2.404
User	LP	Location	ST-2
Job Description	NMU-22.0		
Note			

Start Time	2022-10-07 19:34:38	Duration	0:15:27.6		
End Time	2022-10-07 19:50:06	Run Time	0:15:27.6	Pause Time	0:00:00.0
Pre-Calibration	2022-10-07 19:31:05	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	74.7 dB		
LAE	104.4 dB	SEA	--- dB
EA	3.0 mPa²h		
EA8	94.4 mPa²h		
EA40	472.2 mPa²h		
LZS_{peak}	110.4 dB	2022-10-07 19:43:36	
LAS_{max}	87.5 dB	2022-10-07 19:36:22	
LAS_{min}	66.0 dB	2022-10-07 19:47:15	
LA_{eq}	74.7 dB		
LC_{eq}	79.7 dB	LC_{eq} - LA_{eq}	5.0 dB
LAI_{eq}	79.6 dB	LAI_{eq} - LA_{eq}	4.9 dB

Exceedances	Count	Duration
LAS > 85.0 dB	2	0:00:03.5
LAS > 90.0 dB	0	0:00:00.0
LZSpk > 105.0 dB	4	0:00:05.4
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise	L_{DN}	L_{Day}	L_{Night}	
	--- dB	--- dB	0.0 dB	
	L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
	--- dB	--- dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	74.7 dB		--- dB		--- dB	
$LS_{(max)}$	87.5 dB	2022-10-07 19:36:22	--- dB	None	--- dB	None
$LS_{(min)}$	66.0 dB	2022-10-07 19:47:15	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	110.4 dB	2022-10-07 19:43:36

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 2.0	79.7 dB
LAS 8.0	77.8 dB
LAS 25.0	75.6 dB
LAS 50.0	73.4 dB
LAS 90.0	69.6 dB
LAS 100.0	66.1 dB

Measurement Report

Report Summary

Meter's File Name	LxT_Data.003.s	Computer's File Name	LxT_0005426-20221007 200349-LxT_Data.003.ldbin
Meter	LxT1 0005426	Firmware	2.404
User	LP	Location	ST-3
Job Description	NMU-22.0		
Note			

Start Time	2022-10-07 20:03:49	Duration	0:21:03.7		
End Time	2022-10-07 20:24:52	Run Time	0:15:06.2	Pause Time	0:05:57.5
Pre-Calibration	2022-10-07 19:31:05	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	76.1 dB		
LAE	105.7 dB	SEA	--- dB
EA	4.1 mPa²h		
EA8	130.4 mPa²h		
EA40	651.8 mPa²h		
LZS_{peak}	109.0 dB	2022-10-07 20:04:00	
LAS_{max}	89.1 dB	2022-10-07 20:16:30	
LAS_{min}	57.6 dB	2022-10-07 20:04:13	
LA_{eq}	76.1 dB		
LC_{eq}	81.5 dB	LC_{eq} - LA_{eq}	5.4 dB
LAI_{eq}	80.8 dB	LAI_{eq} - LA_{eq}	4.7 dB

Exceedances

Exceedances	Count	Duration
LAS > 85.0 dB	6	0:00:24.5
LAS > 90.0 dB	0	0:00:00.0
LZSpk > 105.0 dB	20	0:00:14.7
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

L_{DN}	L_{Day}	L_{Night}	
--- dB	--- dB	0.0 dB	

L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
--- dB	--- dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	76.0 dB		--- dB		--- dB	
$LS_{(max)}$	89.1 dB	2022-10-07 20:16:30	--- dB	None	--- dB	None
$LS_{(min)}$	57.6 dB	2022-10-07 20:04:13	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	109.0 dB	2022-10-07 20:04:00

Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

Statistics

LAS 2.0	85.1 dB
LAS 8.0	81.0 dB
LAS 25.0	75.8 dB
LAS 50.0	70.6 dB
LAS 90.0	62.8 dB
LAS 100.0	57.7 dB

Measurement Report

Report Summary

Meter's File Name	LxT_Data.004.s	Computer's File Name	LxT_0005426-20221007 203019-LxT_Data.004.ldbin
Meter	LxT1 0005426	Firmware	2.404
User	LP	Location	ST-4
Job Description	NMU-22.0		
Note			

Start Time	2022-10-07 20:30:19	Duration	0:15:48.0		
End Time	2022-10-07 20:46:07	Run Time	0:15:00.6	Pause Time	0:00:47.4
Pre-Calibration	2022-10-07 19:31:05	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	67.1 dB			
LAE	96.6 dB		SEA	--- dB
EA	513.2 µPa²h			
EA8	16.4 mPa²h			
EA40	82.1 mPa²h			
LZS_{peak}	101.5 dB	2022-10-07 20:42:10		
LAS_{max}	78.9 dB	2022-10-07 20:34:29		
LAS_{min}	52.9 dB	2022-10-07 20:35:49		
LA_{eq}	67.1 dB			
LC_{eq}	71.9 dB		LC_{eq} - LA_{eq}	4.8 dB
LAI_{eq}	71.6 dB		LAI_{eq} - LA_{eq}	4.5 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 90.0 dB	0	0:00:00.0
LZSpk > 105.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise	L_{DN}	L_{Day}	L_{Night}	
	--- dB	--- dB	0.0 dB	
	L_{DEN}	L_{Day}	L_{Eve}	L_{Night}
	--- dB	--- dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	67.1 dB		--- dB		--- dB	
$LS_{(max)}$	78.9 dB	2022-10-07 20:34:29	--- dB	None	--- dB	None
$LS_{(min)}$	52.9 dB	2022-10-07 20:35:49	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	101.5 dB	2022-10-07 20:42:10

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 2.0	74.5 dB
LAS 8.0	72.9 dB
LAS 25.0	67.1 dB
LAS 50.0	62.2 dB
LAS 90.0	56.4 dB
LAS 100.0	52.9 dB

LOCAL REGULATIONS AND STANDARDS

CHAPTER 7
NOISE ELEMENT

The Noise Element describes existing noise levels and noise sources in the City of Costa Mesa. Federal, State, and City regulations relating to noise are outlined in this Section. Goals and supporting policies related to the control of noise levels and the maintenance of a quiet environment are described in this Section.

7.1 PURPOSE

The purpose of the Noise Element is to limit the exposure of the community to excessive noise levels. The Noise Element lists and maps current and projected noise levels for existing and planned land uses and levels for freeways, airports, and railroads. The projected noise levels are used to guide future land use decisions to limit noise and its effects on the community. The Noise Element contains policies and standards for limiting the noise generated from future projects as well as means to abate existing noise problems.

Government Code Section 65302(f) states that a general plan shall include a Noise Element which identifies and appraises noise problems in the community. The Noise Element shall recognize the guidelines established by the Office of Noise Control in the California State Department of Health Services and shall analyze and quantify, to the extent practical, current and projected noise levels for all of the following sources:

- Highways and freeways.
- Primary arterials and major local streets.
- Passenger and freight on-line railroad operations and ground rapid transit systems.
- Commercial, general aviation, heliport, and military airport operations, aircraft overflights, and jet engine test stands.
- Stationary noise sources, including local industrial plants.
- Other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

Noise contours are provided for all referenced sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours are to be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques. The noise contours are used as a guide for establishing a pattern of land uses in the Land Use Element that minimizes exposure of residents to excessive noise.

The Noise Element includes implementation measures and mitigation which addresses existing and foreseeable noise problems. The adopted Noise Element also serves as a guideline for compliance with the state's noise insulation standards.

7.2 RELATIONSHIP TO OTHER GENERAL PLAN ELEMENTS

The policies of the Noise Element are directly related to the policies within the Land Use, Circulation, Housing and Public Safety Elements. The goals, policies, standards and proposals within the Noise Element are consistent with all other elements of the Costa Mesa 2000 General Plan.

7.3 NOISE SCALES

Decibels (dB) are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). The A-weighted sound pressure level is the sound pressure level, in decibels, as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear. Examples, of various sound levels in different environments are shown in Table N-1, *Sound Levels and Human Response.*

Many methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.

Numerous methods have been developed to measure sound over a period of time. These methods include: 1) the Community Noise Equivalent Level (CNEL); 2) the Equivalent Sound Level (Leq); and 3) the Day/Night Average Sound Level (Ldn). These methods are described below.

TABLE N-1
SOUND LEVELS AND HUMAN RESPONSE

Noise Source	dB(A) Noise Level	Response
	150	
Carrier Jet Operation	140	Harmfully Loud
	130	Pain Threshold
Jet Takeoff (200 feet; thence.) Discotheque	120	
Unmuffled Motorcycle Auto Horn (3 feet; thence.) Rock'n Roll Band Riveting Machine	110	Maximum Vocal Effort Physical Discomfort
Loud Power Mower Jet Takeoff (2000 feet; thence.) Garbage Truck	100	Very Annoying Hearing Damage (Steady 8-Hour Exposure)
Heavy Truck (50 feet; thence.) Pneumatic Drill (50 feet; thence.)	90	
Alarm Clock Freight Train (50 feet; thence.) Vacuum Cleaner (10 feet; thence.)	80	Annoying
Freeway Traffic (50 feet; thence.)	70	Telephone Use Difficult
Dishwashers Air Conditioning Unit (20 feet; thence.)	60	Intrusive
Light Auto Traffic (100 feet; thence.)	50	Quiet
Living Room Bedroom	40	
Library Soft Whisper (15 feet; thence.)	30	Very Quiet
Broadcasting Studio	20	
	10	Just Audible
	0	Threshold of Hearing

Source: Melville C. Branch and R. Dale Beland, *Outdoor Noise in the Metropolitan Environment*, 1970, page 2.

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)

The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL rating represents the average of equivalent noise levels, known as Leq's, for a 24 hour period based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dBA for the evening, 7:00 p.m. to 10:00 p.m., and +10 dBA for the night, 10:00 p.m. to 7:00 a.m. CNEL may be indicated by "dBA CNEL" or just "CNEL".

LEQ

The Leq is the sound level containing the same total energy over a given sample time period. The Leq can be thought of as the steady sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. Leq is typically computed over 1, 8 and 24-hour sample periods.

DAY NIGHT AVERAGE (LDN)

Another commonly used method is the day/night average level or Ldn. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the Leq. The Ldn is calculated by averaging the Leq's for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 p.m. to 7:00 a.m.), by 10 dBA to account for the increased sensitivity of people to noises that occur at night.

OTHER NOISE METRICS

The maximum noise level recorded during a noise event is typically expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L_{90}, L_{50}, L_{10}, etc.). L_{50} equals the level exceeded 50 percent of the time, L_{10} ten percent of the time, etc.

7.4 NOISE STANDARDS

FEDERAL NOISE STANDARDS

The United States Noise Control Act of 1972 (NCA) recognized the role of the Federal government in dealing with major commercial noise sources in order to provide for uniform treatment of such sources. As Congress has the authority to regulate interstate and foreign commerce, regulation of noise generated by such commerce also falls under congressional authority. The Federal government specifically preempts local control of noise emissions from aircraft, railroad and interstate highways.

The U.S. EPA has identified acceptable noise levels for various land uses, in order to protect public welfare, allowing for an adequate margin of safety, in addition to establishing noise emission standards for interstate commerce activities.

STATE NOISE STANDARDS

The Office of Noise Control in the State Department of Health Services has developed criteria and guidelines for local governments to use when setting standards for human exposure to noise and preparing noise elements for General Plans. These guidelines include noise exposure levels for both exterior and interior environments. In addition, Title 25, Section 1092 of the California Code of Regulations sets forth requirements for the insulation of multiple-family residential dwelling units from excessive and potentially harmful noise. The State indicates that locating units in areas where exterior ambient noise levels exceed 65 CNEL is undesirable. Whenever such units are to be located in such areas, the developer must incorporate into building design construction features which reduce interior noise levels to 45 dBA CNEL. Tables N-2 and N-3, below, summarize standards adopted by various State and Federal agencies. Table N-3, *Noise and Land Use Compatibility Matrix*, presents criteria used to assess the compatibility of proposed land uses with the noise environment. Table N-4, *State Interior and Exterior Noise Standards*, indicates standards and criteria that specify acceptable limits of noise for various land uses throughout Costa Mesa. These standards and criteria will be incorporated into the land use planning process to reduce future noise and land use incompatibilities. These tables are the primary tools which allow the City to ensure integrated planning for compatibility between land uses and outdoor noise.

CITY NOISE STANDARDS

The City of Costa Mesa maintains a comprehensive Noise Ordinance within the City Code which sets standards for noise levels citywide and provides the means to enforce the reduction of obnoxious or offensive noises.

NOISE ORDINANCE

The City Noise Ordinance establishes outdoor and indoor noise standards. The ordinance is designed to control unnecessary, excessive and annoying sounds generated on one piece of property from impacting an adjacent property, and to protect residential areas from noise sources other than transportation sources. The basic noise standards contained in Table N-2, *City Noise Ordinance Standards-Residential*, below, are for the daytime period (7:00 a.m. to 11:00 p.m.) and apply to both outdoor and indoor residential areas. Between the hours of 11:00 p.m. and 7:00 a.m., the noise standards are 5 dBA more stringent for exterior areas and 10 dBA more stringent for indoor areas. The City Noise Ordinance further specifies exterior residential areas in a Mixed-Use Overlay District for live/work and multi-family residential development which are approved pursuant to a Master Plan and which are subject to these exterior noise standards.

TABLE N-2
CITY NOISE ORDINANCE STANDARDS-RESIDENTIAL

Exterior Noise Standards	Interior Noise Standards
55dBA-7:00 a.m. to 11:00 p.m.	55dBA-7:00 a.m. to 11:00 p.m.
50dBA-11:00 p.m. to 7:00 a.m.	45dBA-11:00 p.m. to 7:00 a.m.

NOTE: These represent the basic standards applicable for time periods exceeding 15 minutes each hour. Higher levels may be generated for specified shorter time periods.

TABLE N-3
NOISE AND LAND USE COMPATIBILITY MATRIX

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE Ldn or CNEL, dBA			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential-Low-Density	50-60	60-70	70-75	75-85
Residential-Multiple Family	50-65	65-70	70-75	75-85
Transient Lodging-Motel, Hotels	50-65	65-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-60	60-65	65-80	80-85
Auditoriums, Concert Halls, Amphitheaters	NA	50-70	NA	70-85
Sports Arenas, Outdoor Spectator Sports	NA	50-75	NA	75-85
Playgrounds, Neighborhood Parks	50-67.5	NA	67.5-75	75-85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-70	NA	70-80	80-85
Office Buildings, Business Commercial and Professional	50-67.5	67.5-77.5	77.5-85	NA
Industrial, Manufacturing, Utilities, Agriculture	50-70	70-80	80-85	NA

Source: Modified from U.S. Department of Housing and Urban Development Guidelines and State of California Standards.

NOTES: **NORMALLY ACCEPTABLE**
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
NORMALLY UNACCEPTABLE
New Construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

NA: Not Applicable.

TABLE N-4
STATE INTERIOR AND EXTERIOR NOISE STANDARDS

LAND USE CATEGORIES		CNEL	
Categories	**Uses**	**Interior[1]**	**Exterior[2]**
Residential	Single-Family, Duplex, Multiple-Family	45[3]	65[5]
	Mobile Home	--	65[4]
Commercial Industrial Institutional	Hotel, Motel, Transient Lodging	45	--
	Commercial Retail, Bank, Restaurant	55	--
	Office Building, Research and Development, Professional Offices, City Office Building	50	--
	Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	--
	Gymnasium (Multipurpose)	50	--
	Sports Club	55	--
	Manufacturing, Warehousing, Wholesale, Utilities	65	--
	Movie Theaters	45	--
Institutional	Hospital, Schools' Classrooms/Playgrounds	45	65
	Church, Library	45	--
OPEN SPACE	Parks	--	65

NOTES:

1. Indoor environmental including: Bathrooms, closets, corridors.
2. Outdoor environment limited to: Private yard of single family
Multi-family private patio or balcony which is served by a means of exit from inside the dwelling
Balconies 6 feet deep or less are exempt
Mobile home park
Park's picnic area
School's playground
3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.
4. Exterior noise levels should be such that interior noise levels will not exceed 45 dBA CNEL.
5. The City Noise Ordinance further specifies exterior residential areas in a Mixed-Use Overlay District for live/work and multi-family residential development which are approved pursuant to a Master Plan and which are subject to these exterior noise standards.

The Noise Ordinance prohibits stationary noise sources to exceed the following:

- ♦ The noise standard for a cumulative period of more than 30 minutes in any hour;
- ♦ The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour;
- ♦ The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour;
- ♦ The noise standard plus 15 dBA for a cumulative period of more than one minute in any hour; or
- ♦ The noise standard plus 20 dBA for any period of time.

The Noise Ordinance exempts several categories of noise sources, including construction activities which take place between the hours of 7:00 a.m. and 8:00 p.m. Monday through Saturday, excluding federal holidays. The ordinance is reviewed periodically for adequacy and amended as needed to address community needs and development patterns.

7.5 SUMMARY OF EXISTING NOISE ENVIRONMENT

Costa Mesa's noise environment is dominated by vehicular traffic including vehicular generated noise along Interstate 405 (I-405), State Route 55 (SR-55), State Route 73 (SR-73), primary and major arterials, and aircraft operations at John Wayne Airport. In addition, a number of other sources contribute to the total noise environment. These noise sources include construction activities, power tools and gardening equipment, loudspeakers, auto repair, radios, children playing and dogs barking. In order to provide a description of the existing noise environment in Costa Mesa, noise contours were obtained from the Orange County Airport Land Use Commission and quantified for highway and local street traffic. As referenced in Table N-6, field noise measurements were taken at various locations in the City to reflect ambient noise levels primarily in the vicinity of sensitive uses (i.e., schools, residences, churches, hospitals, etc.).

TRAFFIC NOISE

Traffic noise levels can be reliably predicted using formulas which take into account traffic volume, speed and percentage of trucks. Existing noise contours were calculated for all the City's primary and major arterials as well as the three freeways (I-405, SR-55, SR-73) that traverse the City. In addition a number of secondary and commuter streets were modeled as well. Noise generation for each roadway segment was calculated and the distance to the 60, 65, and 70 dBA CNEL contours was determined. (A noise contour is a line behind which the noise level does not exceed a certain value. For instance, the 60 dBA CNEL contour indicates that the CNEL between the street and the contour line is equal to, or greater than 60 dB; the CNEL beyond the contour line - away from the street - is less than 60 dB). Refer to Section 7.7, *Noise Contours*, for the approximate location of existing noise contours based on average daily traffic (ADT).

AIRCRAFT NOISE

The California Department of Transportation (Caltrans) has established guidelines in the California State Noise Standard to control residential area noise levels produced by aircraft operations which use the State's airports. Under these guidelines, residential noise sensitive areas exposed to an average CNEL of greater than the 65 dBA define the Noise Impact Area. Noise contours resulting from operations at John Wayne Airport, indicated on Exhibit N-1, *John Wayne Airport Noise Impact Area*, are those on file with the County of Orange Office of Noise Abatement and the Orange County Airport Land Use Commission's 1999 Airport Environs Land Use Plan and represent the latest (1999) measurement data.

As shown in Exhibit N-1, a small portion of Costa Mesa is within the 65 dBA CNEL contour of John Wayne Airport. The northeast corner of Costa Mesa is impacted by noise from the airport, however, the majority of this area is developed with industrial uses. Approximately 107 dwelling units in the City's sphere of influence (SOI) are located within the 65 dBA CNEL Noise Impact Area, south of the runway.

John Wayne Airport has implemented an on-going program of noise reduction which includes: limits on the number of commercial airline flights, noise abatement arrival and departure procedures, admonishment of noisy operators (including private aircraft), curfew, and takeoff weight limitations.

A Master Plan for the airport was approved in February 1985 by the County Board of Supervisors. Settlement of lawsuits concerning airport expansion was reached in December 1985 between the County, City of Newport Beach and two community organizations. Since the construction of the 337,900 square-foot terminal, the passenger count is limited to 8.4 million per year with 73 average daily departures (up to the year 2006). Regularly scheduled aircraft which generate less than 86 dB SENEL (Single Event Noise Equivalent Level) are exempt from daily flight restrictions but are subject to the passenger limitations. Despite the potential for future increases in air traffic from John Wayne, ultimate CNEL contours are anticipated to be similar to the noise contours as contained in the 1999 Airport Environs Land Use Plan, with implementation of the Master Plan and ANCLUC (Airport Noise Control and Land Use Compatibility). The Orange County Airport Land Use Commission, assumes that John Wayne Airport will continue to operate in accordance with the Master Plan until at least 2005. Subsequent to 2005, a prescribed limit on airport operations has not been identified. Therefore, the Commission has assumed that future Airport operations will continue at approximately the 2005 level.

Other aircraft operations affecting Costa Mesa involve the Costa Mesa Police Department, which maintains three helicopters for aerial surveillance. While the helicopters are located at John Wayne Airport, a helipad is located at the City's Civic Center on Fair Drive. Under normal circumstances, only one helicopter is in the air at a given time. Hours of operation are between 10:00 a.m. and 3:00 a.m. Depending on altitude and speed, noise levels generated by the craft under normal conditions range from 61 dBA to 65 dBA. These levels are exceeded upon landing and taking off from the Civic Center helipad for refueling, and in rare instances when landing or extremely low altitudes are required elsewhere in the City.

JOHN WAYNE AIRPORT
2019 ANNUAL 60-75 (5 dB intervals)
CNEL NOISE CONTOURS

Landrum & Brown

Three additional private heliports are located in north Costa Mesa at the following locations:

- Los Angeles Times, 1375 Sunflower Avenue
- Office Building, 555 Anton Boulevard
- Tridair Helicopter, 3000 Airway Avenue

The City regulates the siting of helipads in the City through a Conditional Use Permit. The City requires an analysis to identify potential noise impacts and the City may regulate the hours of operation and arrival, departure/arrival routes, and type of helicopters which may use the heliport in order to minimize impacts to sensitive land uses.

ORANGE COUNTY FAIRGROUNDS

In 1980, a modified stricter Noise Ordinance for fairground operations was established in an agreement between the 32nd District Agricultural Association and the City of Costa Mesa. Table N-5, *Orange County Fairgrounds Modified Noise Ordinance*, applies to the activities within the Orange County Fairgrounds.

TABLE N-5
ORANGE COUNTY FAIRGROUNDS MODIFIED NOISE ORDIANCE

Land Use	Noise Level Not to Be Exceeded	Maximum Allowable Duration of Exceedance
Residential	50 Dba 55 Dba 60 Dba 65 Dba 70 Dba	30 min/hour 15 min/hour 5 min/hour 1 min/hour Not For Any Period of Time
Noise Zone	**Noise Level (CNEL)**	**Time Period**
1 & 2 Family Residential	60 dBA 50 dBA	7:00 a.m. to 11:00 p.m. 11:00 p.m. to 7:00 a.m.
Multiple Dwelling Residential, Public Space, Commercial	60 dBA 55 dBA	7:00 a.m. to 11:00 p.m. 11:00 p.m. to 7:00 a.m.
Title 4, Division 6 (Noise Control) of the Orange County Code, 1980.		

Several noise sources presently exist within the Orange County Fairgrounds property. A majority of the on-site stationary noise is due to sound reinforcement equipment utilized for the Speedway, the swap meet, and annual events such as Octoberfest and Orange County Fair. Additionally motorcycle noise is generated during Speedway races. Parking lot activity during various fairground events also generates noise. The primary noise generators on the fairgrounds site are briefly described below.

PACIFIC AMPHITHEATER

Noise levels generated by concert events at Pacific Amphitheater have exceeded the Costa Mesa Noise Ordinance on several occasions in nearby residential areas in past years, and the amphitheater has been in litigation since 1983 regarding repeated violations and was closed in 1997.

SPEEDWAY MOTORCYCLE RACING

Speedway motorcycle racing events are held at the existing 8,500 seat outdoor arena located at the northern boundary of the fairgrounds. The racing season runs from approximately late March/early April through late September/early October, with racing events on Saturday evenings from 7:30 p.m. to 10:00 p.m. Noise levels are generated by the public address system and by the motorcycles themselves. Typical racing events are 10 dBA to 15 dBA lower than the noise limit of 98 dBA (at a distance of 100 feet from the outside edge of the track) imposed by the State of California Department of Health Services, Office of Noise Control.

ORANGE COUNTY FAIR

Noise is generated by several sources during the annual two week Orange County Fair. Noise sources during the fair events include a public address system, carnival rides, and several sound reinforcement systems which are used for concerts and carnival rides. Noise levels in the activity areas of a typical fair are in the range of 65 dBA to 75 dBA.

URBAN RAIL TRANSPORTATION

As previously discussed within the Circulation Element, no urban rail facilities currently exist within the City. However, OCTA is in the planning stages of a light rail system (Centerline Rail System) that is proposed to pass through the northeast portion of the City, including a line connecting the South Coast Plaza Town Center area to the system. Due to the preliminary nature of the urban rail line proposals, potential long-term noise impacts within the City can not be identified. Further review including detail noise analysis of final route alignments, hours of operation and station locations will be required as the planning for the urban rail line progresses.

STATIONARY NOISE SOURCES

Commercial and industrial land uses located near residential areas currently generate occasional noise impacts. The primary noise sources associated with these facilities is caused by delivery trucks, air compressors, generators, outdoor loudspeakers and gas venting. Other significant stationary noise sources in the City include noise from construction activity, street sweepers and gas-powered leaf blowers. Residential land uses and areas identified as noise-sensitive must be protected from excessive noise from stationary sources including commercial and industrial centers. These impacts are best controlled through effective land use planning and the application of the City Noise Ordinance.

AMBIENT NOISE

In order to describe the ambient or background noise level throughout the City, several noise measurement samples were taken. The locations included a mix of public schools, preschools (childcare centers), hospitals, convalescent homes and a senior housing development. The numerous locations shown in Exhibit N-2, *Noise Sensitive Land Us*es, were distributed throughout the City in order to provide an overall understanding of the noise environment.

TABLE N-6
CITY OF COSTA MESA EXISTING NOISE LEVELS
(Based on Field Measurements)

Site	Location	Leq dBA	L_{90} dBA	Address
1	TeWinkle Intermediate School	50.9	40.3	3224 California Avenue
2	California School	43.6	34.5	3232 California Avenue
3	Killybrooke School	37.6	34.8	3155 Killybrook Lane
4	Paularino School	44.2	39.8	1060 Paularino Avenue
5	St. John the Baptist School/Church	55.7	48.9	1021 Baker Street
6	Costa Mesa High School	53.0	45.6	2650 Fairview Road
7	Back Bay Montessori	59.0	49.4	398 University Drive
8	N-M Alternative Education Center Monte Vista High School/ Back Bay High School	55.9	45.0	390 Monte Vista Avenue
9	Kaiser School	54.7	39.2	2130 Santa Ana Avenue
10	Wilson School	55.2	43.5	801 Wilson Avenue
11	Estancia High School	54.9	39.7	2323 Placentia Avenue
12	College Hospital	58.3	45.7	301 Victoria
13	Head Start	45.0	35.3	661 Hamilton
14	Rea	45.5	36.2	601 Hamilton
15	Costa Mesa Senior Center	49.6	41.8	695 W. 19th Street
16	Pomona School	46.2	35.5	2051 Pomona Avenue
17	Mesa Verde Convalescent Hospital	41.2	32.3	661 Center
18	Whitter School	43.3	39.5	1500 Whittier Street
19	Ocean Breeze Children’s Center	44.1	39.0	190 E. 15th Street
20	Jewish Community Center of OC	44.7	42.5	250 E. Baker Street
21	Playmates – Paularino Preschool	53.8	45.5	795 Paularino Avenue
22	Giant Step Learning Center	51.8	47.8	758 Saint Clair
23	Davis Elementary School	45.2	36.0	1050 Arlington Drive
24	Step By Step	53.8	47.4	2525 Fairview Road
25	College Park School	37.5	33.7	2380 Notre Dame Road
26	Harbor Trinity Preschool	47.9	44.2	1230 Baker Street
27	Adams School	43.9	37.7	2850 Clubhouse Drive
28	Montessori Harbor Mesa Preschool	43.0	34.5	1701 W. Baker Street
29	Prince of Peace	41.5	33.9	2987 Mesa Verde Drive East
30	Coastline Community College	42.2	34.3	2990 Mesa Verde Drive East
31	Montessori Harbor Mesa Elementary School	41.1	37.2	3025 Deodar Avenue
32	Vineyard Christian Preschool Harbor Mesa	42.2	38.9	3013 Deodar Avenue
33	Victoria School	52.2	40.4	1025 Victoria Street
34	Christ Lutheran Church of Costa Mesa LCMS	51.8	42.4	760 Victoria Street
35	Orange Coast College	57.4	43.2	2701 Fairview Road
36	Vanguard University of Southern California	48.2	41.4	55 Fair Drive
37	Woodland Elementary School	65.5	50.8	2025 Garden Lane
38	Sonora School	43.6	35.0	966 Sonora Road

Source: Noise monitoring survey conducted by Robert Bein, William Frost & Associates on August 13, August 16, August 17, August 26, and September 17, 1999.

The noise measurement locations also functioned as noise sensitive indicators. These noise sensitive indicators are uses, such as schools and hospitals, which have a lower tolerance for noise than do industrial and commercial activities or normal residential uses. Noise levels measured at these locations are reported in Table N-6 *Field Noise Measurements*.

7.6 KEY ISSUES

Although there are no significant broad-based noise problems in the City, there are locations which are subject to considerable noise impacts. These consist primarily of areas adjacent to major streets and John Wayne Airport. Construction noise may be experienced at various times in almost any part of the City. This is only a temporary impact, however, and the City's Noise Ordinance subjects construction activities to the limits of the noise ordinance during the more sensitive hours between 8:00 p.m. and 7:00 a.m.

Noise from operations at John Wayne Airport affects primarily industrial and commercial properties in Costa Mesa. Exhibit N-1 depicts the noise contours for the airport.

Because of the nature of the operation, police helicopter noise may impact any location in the City at any time between 10:00 a.m. and 3:00 a.m. Overflights are usually brief, lasting only a few seconds. Noise exposure of several minutes may occur when circling a crime scene. Although helicopter noise levels are not extremely high in either case, they may be sufficient to cause sleep interruption during nighttime hours.

Surface traffic noise has the greatest impact on the noise environment of Costa Mesa’s residential properties. Between 55 and 60 dBA CNEL contours are common along City collector streets; freeways and major street expose adjacent areas to levels of 65dBA CNEL or greater.

7.7 NOISE CONTOURS

Exhibits N-3 and N-4 provide existing and expected 2020 noise contours along many of the City's major and primary arterials and the three freeways that traverse the City. Noise contours for selected secondary and commuter streets are also included. Tables are included in the 2000 General Plan Environmental Impact Report which indicate traffic volumes on designated street segments.

The exhibits display the average daily traffic volume (ADT) noise levels at 100 feet from the roadway centerline and the distance from the roadway centerline to the 70, 65 and 60 dBA CNEL contours.

7.8 DESCRIPTION OF NOISE PLAN

TYPICAL NOISE ATTENUATION TECHNIQUES

Noise impacts can be mitigated in three basic ways: by reducing the sound level of the noise generator, by increasing the distance between the source and receiver, and by insulating the receiver.

Noise reduction can be accomplished by placement of walls, landscaped berms, or a combination of the two, between the noise source and the receiver. Generally, effective noise shielding requires a solid barrier with a mass of at least four pounds per square-foot of surface area which is large enough to block the line of sight between source and receiver. Variations may be appropriate in individual cases based on distance, nature and orientation of buildings behind the barrier, and a number of other factors. Garages or other buildings may be used to shield dwelling units and outdoor living areas from traffic noise.

In addition to site design techniques, noise insulation can be accomplished through proper design of buildings. Nearby noise generators should be recognized in determining the location of doors, windows and vent openings. Sound-rated windows (extra thick or multi-paned) and wall insulation are also effective. None of these measures, however, can realize their full potential unless care is taken in actual construction: doors and windows fitted properly; openings sealed; joints caulked; plumbing adequately insulated from structural members.

And, of course, sound-rated doors and windows will have little effect if left open. This may require installation of air conditioning for adequate ventilation. The chain of design, construction and operation is only as effective as its weakest link.

Noise impacts can be reduced by insulating noise sensitive uses, such as residences, schools, libraries, hospitals, nursing and carehomes and some types of commercial activities. But perhaps a more efficient approach involves limiting the level of noise generation at the source. State and Federal statutes have largely preempted local control over vehicular noise emissions but commercial and industrial operations and certain residential activities provide opportunities for local government to assist in noise abatement. Local ordinances may establish maximum levels for noise generated on-site. This usually takes the form of limiting the level of noise permitted to leave the property where it may impact other uses.

Although vehicular noise emissions standards are established at the State and Federal levels, local agencies can play a significant part in reducing traffic noise by controlling traffic volume and congestion. Traffic noise is greatest at intersections due to acceleration, deceleration and gear shifting. Measures such as signal synchronization can help to minimize this problem. Likewise, reduction of congestion aids in reduction of noise. This can be accomplished through the application of traffic engineering techniques such as channelization of turning movements, parking restrictions, separation of modes (bus, auto, bicycle, pedestrian) and restrictions on truck traffic.

Noise reduction through reduction of traffic volumes can also be accomplished with incentive programs for use of public transit facilities and high-occupancy vehicles, staggering of work hours and land use controls. Vehicle trips can be turned into pedestrian trips with integration of housing and employment into the same project or area, construction of high-density, affordable housing in proximity to employment, shopping and public transit facilities and other techniques.

7.9 GOALS, OBJECTIVES AND POLICIES

The goals, objectives and policies that address noise hazards and conditions are as follows:

GOAL N-1:
NOISE HAZARDS AND CONDITIONS

It is the goal of the City of Costa Mesa to protect its citizens and property from injury, damage, or destruction from noise hazards and to work towards improved noise abatement.

Objective N-1A. Control noise levels within the City for the protection of residential areas and other sensitive land uses from excessive and unhealthful noise.

N-1A.1 Require, as a part of the environmental review process, that full consideration be given to the existing and projected noise environment.

N-1A.2 The maximum acceptable exterior noise levels for residential areas is 65 CNEL.

N-1A.3 Give full consideration to the existing and projected noise environment when considering alterations to the City's circulation system and Master Plan of Highways.

N-1A.4 Encourage Caltrans to construct noise attenuation barriers along State freeways and highways adjoining residential and other noise sensitive areas.

N-1A.5 Ensure that appropriate site design measures are incorporated into residential developments, when required by an acoustical study, to obtain appropriate exterior and interior noise levels. When necessary, require field testing at the time of project completion to demonstrate compliance.

N-1A.6 Apply the standards contained in Title 24 of the California Code of Regulations as applicable to the construction of all new dwelling units.

N-1A.7 Discourage sensitive land uses from locating in the 65 CNEL noise contour of the John Wayne Airport. Should it be deemed by the City as appropriate and/or necessary for a sensitive land use to locate in the 65 CNEL noise contour, ensure that appropriate interior noise levels are met and that minimal outdoor activities are allowed.

N-1A.8 Support alternative methods for the reduction of noise impacts at John Wayne Airport while continuing to maintain safety and existing limitations on aircraft daily departures.

Costa Mesa, California Municipal Code

TITLE 13 PLANNING, ZONING AND DEVELOPMENT

CHAPTER XIII. NOISE CONTROL

13-277. Purpose.

It is the city's purpose to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power. At certain levels noises are detrimental to the health, comfort, safety, peace and enjoyment and welfare of the citizenry, and in the public interest shall be regulated and systematically proscribed. (Ord. No. 97-11, § 2, 5-5-97)

13-278. Definitions.

The following words, phrases and terms as used in this chapter shall have the meaning indicated below:

Cumulative period. An additive period of time composed of individual time segments which may be continuous or interrupted.

Decibel (dB). A unit which denotes the ratio between two (2) quantities which are proportional to power: The number of decibels corresponding to the ratio of two (2) amounts of power is ten (10) times the logarithm to the base 10 of this ratio.

Emergency machinery, vehicle or work. Any machinery, vehicle or work used, employed or performed in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

Exterior residential noise environment. The exterior environs of a residential development which include private yard of single-family residence, multi-family private patio or balcony which is served by means of exit from inside the dwelling, private balconies greater than six (6) feet in depth, and common open space areas containing resident-serving amenities (i.e. pool, spa, tennis courts). Exception: For multi-family residential development or live/work units approved pursuant to a master plan in a mixed-use overlay district where the base zoning district is nonresidential, the exterior residential noise environment does not include the following areas: Private balconies or patios regardless of size, private or community roof decks/roof terraces, internal courtyards and landscaped walkways that do not include resident-serving, active recreational uses such as community pool, spa, tennis courts, barbeque, and picnic areas.

Fixed noise source. A stationary device which creates sounds while fixed or motionless, including but not limited to industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.

Grading. Any excavating or filling of earth material, or any combination thereof, conducted at a site to prepare the site for construction or other improvements.

Impact noise. The noise produced by the collision of one mass in motion with a second mass which may be either in motion or at rest.

Interior residential noise environment. The interior environs of a residential dwelling unit or live/work unit which includes all interior spaces such as, but not limited to, bathrooms, closets, corridors, kitchen, living room/family room, bedrooms, playroom, and office.

Mobile noise source. Any noise source other than a fixed noise source.

Noise level. The "A" weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty (20) micronewtons per square meter. The unit of measurement shall be designated as dB(A).

Person. A person, firm, association, copartnership, joint venture, corporation or any entity, public or private in nature.

Residential property. A lot of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

Simple tone noise. A noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished.

Sound pressure level of a sound, in decibels. Twenty (20) times the logarithm to the base 10 of the ratio of the pressure of the sound to a reference pressure, which reference pressure shall be explicitly stated. (Ord. No. 97-11, § 2, 5-5-97; Ord. No. 06-9, § 1j., 4-18-06)

13-279. Exceptions for construction.

The provisions of this chapter shall not apply to the following:

(a) Emergency machinery, vehicles, or work; or~conjunction~

(b) Construction equipment, vehicles, or work between the following approved hours, provided that all required permits for such construction, repair, or remodeling have been obtained from the appropriate city departments.

HOURS FOR CONSTRUCTION ACTIVITIES

7:00 a.m. through 7:00 p.m.	Mondays through Fridays
9:00 a.m. through 6:00 p.m.	Saturdays
Prohibited all hours	Sundays and the following specified federal holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

(c) *Waiver procedure*. An applicant may request approval of a minor modification for a temporary waiver for construction equipment, vehicles, or work outside these permitted hours. The minor modification may be granted by the development services director or his/her designee. Any temporary waiver shall take into consideration the unusual circumstances requiring construction activity outside the permitted hours and the short-term impacts upon nearby residential and business communities.

Minor modification findings shall indicate whether or not the extended construction hours will be materially detrimental to the health, safety, and general welfare of persons residing or working within the immediate vicinity of the construction site.

Unless a temporary waiver is approved, construction activity outside the permitted hours shall still be subject to the city's noise regulations. (Ord. No. 97-11, § 2, 5-5-97; Ord. No. 10-3, § 1a., 2-16-10)

13-280. Exterior noise standards.

(a) The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within the city:

RESIDENTIAL EXTERIOR NOISE STANDARDS

Noise Level	*Time Period*
55 dB(A)	7:00 a.m.—11:00 p.m.
50 dB(A)	11:00 p.m.—7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

(b) It is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either within or outside the city, to exceed:

(1) The noise standard for a cumulative period of more than thirty (30) minutes in any hour;

(2) The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour;

(3) The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour;

(4) The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or~conjunction~

(5) The noise standard plus twenty (20) dB(A) for any period of time.

(c) In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

(d) The exterior noise standards shown in subsection (a) shall not apply to the following exterior areas of multi-family residential development or live/work units located within a mixed-use overlay district where the base zoning district is nonresidential, approved pursuant to a master plan, and subject to the land use regulations of an urban plan:

(1) Private balconies or patios regardless of size;

(2) Private or community roof decks/roof terraces;

(3) Internal courtyards and landscaped walkways that do not include resident-serving, active recreational uses such as community pool, spa, tennis courts, barbeque, and picnic areas.

(e) In high-rise residential developments in the North Costa Mesa Specific Plan, the exterior noise standards shown in subsection (a) shall only apply to the common outdoor recreational amenity areas located on the ground level. Recreational amenity areas located above the ground level and private balconies and patios shall be exempt from this standard. (Ord. No. 97-11, § 2, 5-5-97; Ord. No. 06-9, § 1k., 4-18-06; Ord. No. 07-2, § 1m., 2-6-07)

13-281. Interior noise standards.

(a) The following interior noise standards, unless otherwise specifically indicated, shall apply to all residential property within the city:

RESIDENTIAL INTERIOR NOISE STANDARDS

Noise Level	*Time Period*
55 dB(A)	7:00 a.m.—11:00 p.m.
45 dB(A)	11:00 p.m.—7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

(b) It is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level when measured within any other dwelling unit on any residential property, either within or outside the city, to exceed:

(1) The interior noise standard for a cumulative period of more than five (5) minutes in any hour;

(2) The interior noise standard plus five (5) dB(A) for a cumulative period of more than one (1) minute in any hour; or~conjunction~

(3) The interior noise standard plus ten (10) dB(A) for any period of time.

(c) In the event the ambient noise level exceeds either of the first two (2) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level. (Ord. No. 97-11, § 2, 5-5-97)

13-282. Noise near schools, hospitals, churches.

It is unlawful for any person to create, maintain or cause to be created or maintained any noise or sound which:

(a) Exceeds the noise standards specified in section 13-280, Exterior noise standards, near any school, hospital or church while it is in use, regardless of the zone within which it is located; or~conjunction~

(b) The noise level unreasonably interferes with the working of such installations or which disturbs or unduly annoys patients in a hospital, provided conspicuous signs are displayed in three (3) separate locations within one-tenth of a mile indicating the presence of a school, church or hospital. (Ord. No. 97-11, § 2, 5-5-97)

13-283. Loud, unnecessary noise.

It is unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area, regardless of whether the noise level exceeds the standards specified in section 13-280, Exterior noise standards, and section 13-281, Interior noise standards. The standard which may be considered in determining whether a violation of the provisions of this section exists may include, but not be limited to, the following:

(a) The level of noise;

(b) Whether the nature of the noise is usual or unusual;

(c) Whether the origin of the noise is natural or unnatural;

(d) The level and intensity of the background noise, if any;

(e) The proximity of the noise to residential sleeping facilities;

(f) The nature and zoning of the area within which the noise emanates;

(g) The density of the inhabitation of the area within which the noise emanates;

(h) The time of the day and night the noise occurs;

(i) The duration of the noise;

(j) Whether the noise is recurrent, intermittent or constant;

(k) Whether the noise is produced by a commercial or noncommercial activity; and~conjunction~

(l) The density of the inhabitation of the area affected. (Ord. No. 97-11, § 2, 5-5-97)

13-284. Noise level measurement.

(a) Any noise level measurement shall be performed using a sound level meter meeting American National Standard Institute's Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

(b) Exterior measurements: The location selected for measuring exterior noise levels shall be at any point on the affected property.

(c) Interior measurements: Interior noise measurements shall be made within the affected dwelling unit. The measurement shall be made at a point at least four (4) feet from the wall, ceiling, or floor nearest the alleged offensive noise source and may be made with the windows of the affected unit open. (Ord. No. 97-11, § 2, 5-5-97)

13-285. Variance procedure.

(a) The owner or operator of a noise source which violates any provision of this chapter may file an application with the development services director for a variance from the provisions of this chapter. Variance applications shall be processed according to procedures set forth in Chapter III, Planning Applications. The application shall set forth all actions taken to comply with this chapter, the reasons immediate compliance cannot be achieved, a proposed method and time schedule for achieving compliance, and any other information requested by the director.

(b) An applicant shall remain subject to prosecution under the terms of this chapter until a variance is granted.

(c) All applications shall be evaluated with respect to time for compliance, subject to any conditions deemed reasonable to achieve maximum compliance with this chapter. Each variance granted shall set forth the approved method and time schedule for achieving compliance. Evaluation of the variance request shall include consideration of the magnitude of the noise nuisance; the uses of property affected by the noise; the time factors related to study, design, financing, and construction of remedial work; the economic factors related to age and useful life of equipment; and the general public interest and welfare. (Ord. No. 97-11, § 2, 5-5-97)

13-286. Violations.

(a) Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined in an amount not exceeding one thousand dollars ($1,000.00) and/or be imprisoned in the county jail for a period not exceeding six (6) months. Each violation may instead be charged as an infraction.

(b) Each time an offensive noise exceeds any one (1) of the standards set forth in this chapter shall constitute a separate offense and be punishable as such. (Ord. No. 97-11, § 2, 5-5-97)

13-287. Nuisance declared.

It is determined that certain noise levels are detrimental to the public health, welfare and safety and contrary to public interest, and therefore the city council does ordain and declare that the creating or maintaining or causing or allowing to be created or maintained any noise in a manner prohibited by or not in conformity with the terms of this chapter is a public nuisance and shall be punishable as such and may be subject to abatement pursuant to Chapter I, General, Article 4, Enforcement. (Ord. No. 97-11, § 2, 5-5-97)

Contact:

City Clerk: 714-754-5225

CONSTRUCTION NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/18/2024
Case Description: NMU-22.0 Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Concrete Saw	No	20		89.6	50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	84.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/18/2024
Case Description: NMU-22.0 Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	81.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/18/2024
Case Description: NMU-22.0 Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Excavator	No	40		80.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	82.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/18/2024
Case Description: NMU-22.0 Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Welder / Torch	No	40		74.0	50.0	0.0
Generator	No	50		80.6	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.6	79.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/18/2024
Case Description: NMU-22.0 Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.0	78.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/18/2024
Case Description: NMU-22.0 Architectural Coating

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
at 50 feet	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NMU-22.0 - Construction Noise Modeling Attenuation Calculations

		Levels in dBA Leq				
Phase	**RCNM Reference Noise Level**	**Residential Receptor to North**	**School Receptor to East**	**Commercial Receptor to South**	**On-Site Receptor to West**
Distance in feet	*50*	*780*	*335*	*300*	*315*
Demolition	85	61	68	69	69
Site Prep	82	58	65	66	66
Grading	83	59	66	67	67
Distance in feet	*50*	*590*	*245*	*150*	*180*
Building Construction	79	58	65	69	68
Architectural Coating	74	53	60	64	63
Distance in feet	*50*	*640*	*630*	*150*	*200*
Paving	78	56	56	68	66

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

NMU-22.0 - Vibration Damage Attenuation Calculations

	Levels, PPV (in/sec)				
	Vibration Reference Level	Residential Receptor to North	School Receptor to East	Commercial Receptor to South	On-Site Receptor to West
Distance in feet	**at *25 feet***	*640*	*240*	*115*	*160*
Vibratory Roller	0.21	0.002	NA	0.021	0.013
Large Bulldozer	0.089	0.001	0.003	0.009	0.005
Loaded Trucks	0.076	0.001	0.003	0.008	0.005
Jackhammer	0.035	0.000	0.001	0.004	0.002
Small Bulldozer	0.003	0.000	0.000	0.000	0.000

SoundPLAN NOISE MODELING

Calculation Service			**February 3rd, 2023**
Navcon Project #:	**225243**		
Project Engineer:	**Hans J. Forschner**		
Project:	**Placeworks Costa Mesa Highschool Football Game**		

Navcon Engineering Network	**Phone:**	**714-441-3488**
701 W. Las Palmas Dr.	**Email:**	**forschner@navcon.com**
Fullerton, CA 92835	**Web-Site:**	**www.navcon.com**

Customer:		
Placeworks	**Contact:**	**Dwayne Mears, Principal**
3 MacArthur Place, Suite 1100		**Elizabeth Kim, Alejandro Garcia**
Santa Ana, California 92707	**Phone:**	714.966.9220 ext. 2316
	Email:	dmears@placeworks.com

Work Sheets:	**Description**
Caculation Parameter	**Documentation of Software and Calculation Parameters**
Source Input	**Summary of the Sound Power Level**
Results	**Prediction Receiver Leq,hourly during Football Game**

Software Version:	**SoundPLAN 9.0 - Kernel version: 2/02/2023**

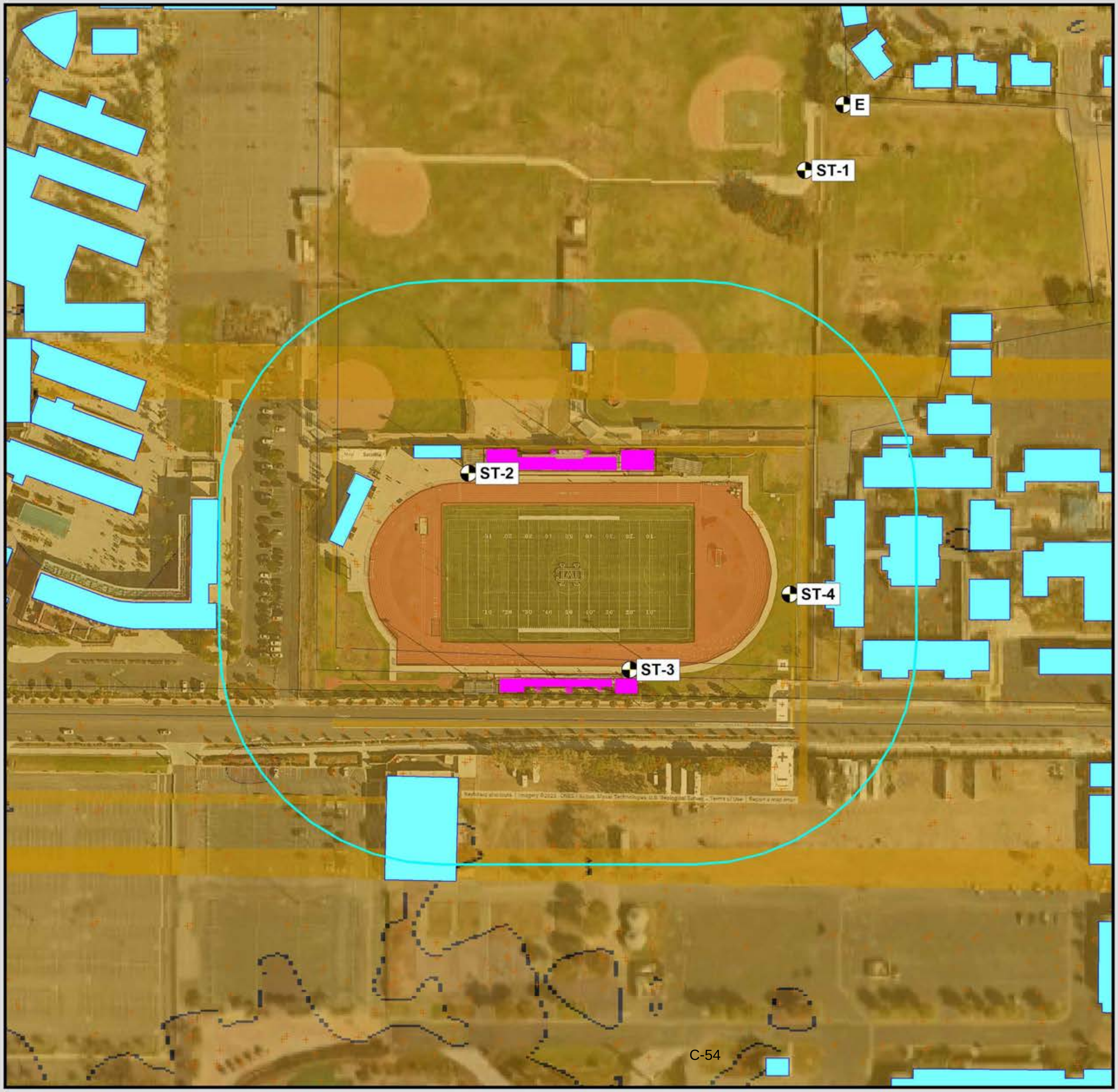
Prediction Model:		ISO 9613 -2 "Acoustics -- Attenuation of sound during propagation outdoors -- Part 2: General method of calculation", 1993
Air absorption:		ISO 9613-1 "Acoustics -- Attenuation of sound during propagation outdoors -- Part 1: Calculation of the absorption of sound by the atmosphere"
Environment:		
	Air pressure	1013 mbar
	rel. Humidity	70%
	Temperature	10 °C = 50 °F
Assessment:		Leq
Frequency Weighting:		dBA
Ground:		Reflective Ground g=0.6 mixed, Roads and parking lots g=0 hard ground

Noise Model Input

Name	Source type	Octave Band Sound Power Level [dB]										Overall
		31Hz	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	dBA
Band Home	Area	132.8	137.2	126.7	123.1	122.7	120.5	115.8	111.2	105.4	91.1	125.0
Band Visitor	Area	132.8	137.2	126.7	123.1	122.7	120.5	115.8	111.2	105.4	91.1	125.0
Home Crowd 1455 Spectators	Area			108.5	118.9	121.2	114.1	112.5	106.2	98.8		121.0
Visitor Crowd 555 Spectators	Area			104.9	115.3	117.6	110.5	108.9	102.6	95.2		117.4
Home Speaker 1	Point	107.6	115.5	121.5	117.8	118.1	115.7	111.1	106.0	101.1	84.2	120.0
Home Speaker 2	Point	107.6	115.5	121.5	117.8	118.1	115.7	111.1	106.0	101.1	84.2	120.0
Visitor Speaker 1	Point	103.6	111.5	117.5	113.8	114.1	111.7	107.1	102.0	97.1	80.2	116.0
Visitor Speaker 2	Point	103.6	111.5	117.5	113.8	114.1	111.7	107.1	102.0	97.1	80.2	116.0
Visitor Speaker 3	Point	103.6	111.5	117.5	113.8	114.1	111.7	107.1	102.0	97.1	80.2	116.0
Visitor Speaker 4	Point	103.6	111.5	117.5	113.8	114.1	111.7	107.1	102.0	97.1	80.2	116.0

Receiver	X m	Y m	Z m	Ground Height [m]	L(50) dB(A)
A	1846589.9	668437.3	16.8	15.3	51.5
B	1846740.4	668557.7	14.6	13.1	45.0
C	1847077.8	668431.7	15.1	13.6	48.9
D	1846933.2	668213.6	16.4	14.9	49.8
E	1846748.8	668099.5	17.8	16.3	58.7
F	1847117.1	668096.3	16.7	15.2	53.0
G	1846784.8	667044.7	24.4	22.9	47.7
H	1846459.2	667081.5	25.2	23.7	48.2
I	1846341.1	667193.3	25.3	23.8	48.5
J	1846156.0	667088.5	23.8	22.3	47.0
K	1846129.5	667433.8	23.1	21.6	48.3
L	1846249.3	667647.2	22.4	20.9	54.8
M	1846140.7	667796.4	22.3	20.8	57.1
ST-1	1846731.4	668069.9	17.6	16.1	59.9
ST-2	1846579.2	667932.8	19.5	18.0	75.9
ST-3	1846652.1	667843.9	19.5	18.0	90.0
ST-4	1846724.6	667878.2	20.1	18.6	70.9

Assumption	
Crowd Home	10 min per hour
Crowd Visitor	10 min per hour
Stadium Speaker	12 min per hour
Band Home	10 min per hour
Band Visitor	10 min per hour



Costa Mesa High School Football Game

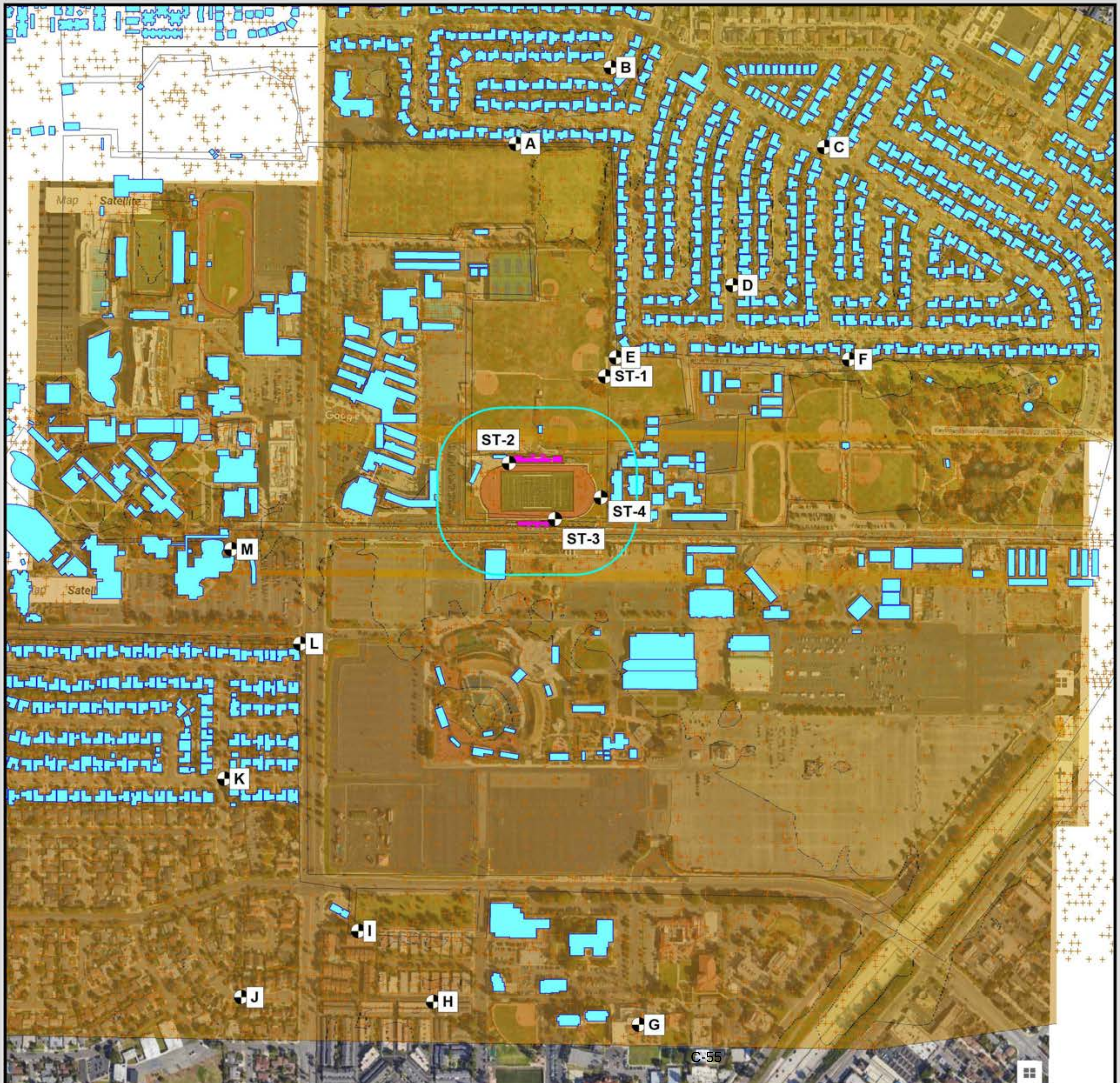
Input Geometry

Elevation
in meter

> 30	
25 - 30	
20 - 25	
15 - 20	
10 - 15	
5 - 10	
0 - 5	
<= 0	

Legend

- Area sources
- Point Sources
- Building
- Receiver



Costa Mesa High School Football Game

Input Geometry

Elevation
in meter

	> 30
	25 - 30
	20 - 25
	15 - 20
	10 - 15
	5 - 10
	0 - 5
	<= 0

Legend

Area sources
Point Sources
Building
Receiver

Costa Mesa High School Stadium
Run Info
10-Basic Stadium

Project description

Project title:	Costa Mesa High School Stadium
Project No.:	NMU-04.1
Engineer:	RAM
Customer:	Newport-Mesa Unified School District

Description:
Full-capacity stadium event

Run description

Calculation:	Single Point Sound
Title:	10-Basic Stadium
Run file:	Runfile1.runx
Result number:	10
Local Calculation (ThreadCount=8)	
Calculation start:	12/16/2014 6:50:00 PM
Calculation end:	12/16/2014 6:50:01 PM
Calculation time:	00:00:537 [m:s:ms]
No. of points:	20
No. of calculated points:	20
Kernel version:	10/12/2011 (RKernel7.dll)

Run parameters

Reflection order	3	
Maximal reflection distance to receiver		200 m
Maximal reflection distance to source		50 m
Search radius	5000 m	
Weighting:	dB(A)	
Tolerance:	0.001 dB	

Standards:
- Industry: General Prediction Method
- Air absorption: ANSI 126
- Method for reflection plane definition: GPM 2005
- Using roof as potential reflection plane
- Limitation of screening loss:
  - single/multiple 20 dB /40 dB
- Calculation with side screening
- Environment:
  - Air pressure 1013.25 mbar

rel. Humidity 70 %
Temperature 15 °C
Meteo. Corr. C0(7-22h)[dB]=0.0; C0(22-7h)[dB]=0.0;

Dissection parameters:

Distance to diameter factor	8
Minimal Distance [m]	1 m
Max. Difference GND+Diffraction	1 dB
Max. No. of Iterations	4

Assessment: Day Night Level LDN
Reflection of "own" facade is suppressed

Geometry data

Situation1.sit	12/16/2014 6:49:54 PM
- contains:	
10-Ground Abs.geo	12/16/2014 2:13:28 PM
10-Calc Extents.geo	12/16/2014 2:01:42 PM
10-Geo-File1.geo	12/16/2014 2:01:56 PM
10-Elevations.geo	12/16/2014 2:35:28 PM
10-Receptors.geo	12/16/2014 2:52:18 PM
10-PacAmphiTheater berm.geo	12/16/2014 3:54:48 PM
10-block structures1.geo	12/16/2014 3:54:48 PM
10-block structures2.geo	12/16/2014 4:16:50 PM
10-block structures3.geo	12/16/2014 4:26:46 PM
10-block structures4.geo	12/16/2014 4:57:22 PM
10-block structures5.geo	12/16/2014 4:57:22 PM
10-block structures6.geo	12/16/2014 5:52:16 PM
10-block structures7.geo	12/16/2014 5:52:16 PM
10-Bleacher walls.geo	12/16/2014 6:35:02 PM
10-crowd noise srcs.geo	12/16/2014 6:49:54 PM
10-Test point receptor.geo	12/16/2014 6:41:18 PM
RDGM0001.dgm	12/16/2014 2:37:46 PM

Costa Mesa High School Stadium
Assessed receiver levels
10-Basic Stadium

2

Receiver	Leq,d dB(A)	
A	39.1	
B	21.2	
C	27.7	
D	31.4	
E	39.4	
F	34.2	
G	34.3	
H	21.4	
I	33.8	
J	30.4	
K	32.0	
L	43.2	
M	44.9	
Monitor_LT-1	40.9	
Monitor_ST-1	30.3	
Monitor_ST-2	35.6	
Monitor_ST-3	53.9	
Monitor_ST-4	33.7	
Monitor_ST-5	37.2	
Test	51.3	

Costa Mesa High School Stadium
Mean propagation Leq - 10-Basic Stadium

Source	Source	time slice	Li	R'w	L'w	Lw	I or A	KI	KT	Ko	S	Adiv	Agr	Abar	Aatm	Amisc	ADI	dLrefl	Ls	dLw	Cmet	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB	dB	dB(A)	dB	dB	dB	dB(A)
Receiver A		Leq,d	39.1			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	496.41	-64.9	-4.6	-20.0	-1.0		0.0	2.7	29.5	0.0	0.0	0.0	29.5
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	595.70	-66.5	-18.7	-0.2	-1.2		0.0	9.6	38.6	0.0	0.0	0.0	38.6
Receiver B		Leq,d	21.2			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	625.73	-66.9	0.7	-34.9	-1.3		0.0	0.0	15.0	0.0	0.0	0.0	15.0
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	723.96	-68.2	-13.2	-14.9	-1.4		0.0	2.2	20.0	0.0	0.0	0.0	20.0
Receiver C		Leq,d	27.7			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	664.77	-67.4	0.9	-33.6	-1.3		0.0	5.7	21.5	0.0	0.0	0.0	21.5
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	741.65	-68.4	-12.8	-15.0	-1.5		0.0	8.6	26.5	0.0	0.0	0.0	26.5
Receiver D		Leq,d	31.4			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	408.24	-63.2	0.5	-30.6	-0.8		0.0	4.2	27.5	0.0	0.0	0.0	27.5
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	480.86	-64.6	-13.0	-12.3	-1.0		0.0	4.5	29.2	0.0	0.0	0.0	29.2
Receiver E		Leq,d	39.4			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	198.20	-56.9	-4.6	-18.9	-0.4		0.0	0.0	36.5	0.0	0.0	0.0	36.5
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	284.23	-60.1	-18.8	0.0	-0.6		0.0	0.0	36.1	0.0	0.0	0.0	36.1
Receiver F		Leq,d	34.2			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	512.32	-65.2	-2.4	-20.4	-1.0		0.0	1.6	29.9	0.0	0.0	0.0	29.9
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	551.45	-65.8	-14.0	-8.2	-1.1		0.0	5.7	32.2	0.0	0.0	0.0	32.2
Receiver G		Leq,d	34.3			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	911.15	-70.2	-14.3	0.0	-1.8		0.0	2.5	33.6	0.0	0.0	0.0	33.6
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	813.44	-69.2	-2.7	-16.1	-1.6		0.0	0.0	26.0	0.0	0.0	0.0	26.0
Receiver H		Leq,d	21.4			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	877.27	-69.9	1.1	-34.4	-1.8		0.0	7.9	20.4	0.0	0.0	0.0	20.4
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	779.64	-68.8	0.4	-36.3	-1.6		0.0	5.3	14.7	0.0	0.0	0.0	14.7
Receiver I		Leq,d	33.8			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	802.09	-69.1	-15.6	-3.7	-1.6		0.0	5.3	32.7	0.0	0.0	0.0	32.7
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	709.71	-68.0	-5.0	-15.9	-1.4		0.0	2.2	27.5	0.0	0.0	0.0	27.5
Receiver J		Leq,d	30.4			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	975.55	-70.8	-11.4	-13.6	-2.0		0.0	9.5	29.2	0.0	0.0	0.0	29.2
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	889.30	-70.0	0.1	-29.3	-1.8		0.0	9.5	24.2	0.0	0.0	0.0	24.2

PlaceWorks 3 MacArthur Place, Ste 1100 Santa Ana, CA 92707 USA

Costa Mesa High School Stadium
Mean propagation Leq - 10-Basic Stadium

Source	Source	time slice	Li	R'w	L'w	Lw	I or A	KI	KT	Ko	S	Adiv	Agr	Abar	Aatm	Amisc	ADI	dLrefl	Ls	dLw	Cmet	ZR	Lr
			dB(A)	dB	dB(A)	dB(A)	m,m²	dB	dB	dB	m	dB	dB	dB	dB	dB	dB	dB	dB(A)	dB	dB	dB	dB(A)
Receiver K		Leq,d	32.0			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	712.08	-68.0	-11.7	-13.9	-1.4		0.0	6.7	28.9	0.0	0.0	0.0	28.9
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	644.07	-67.2	-0.3	-28.5	-1.3		0.0	10.6	29.0	0.0	0.0	0.0	29.0
Receiver L		Leq,d	43.2			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	479.84	-64.6	-12.6	0.0	-1.0		0.0	2.4	41.6	0.0	0.0	0.0	41.6
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	425.20	-63.6	-0.7	-12.5	-0.8		0.0	0.0	37.9	0.0	0.0	0.0	37.9
Receiver M		Leq,d	44.9			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	508.22	-65.1	-1.4	-11.3	-1.0		0.0	4.2	42.7	0.0	0.0	0.0	42.7
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	488.29	-64.8	-7.3	-3.5	-1.0		0.0	1.8	40.9	0.0	0.0	0.0	40.9
Receiver Monitor_LT-1		Leq,d	40.9			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	201.80	-57.1	-4.6	-19.2	-0.4		0.0	1.8	37.8	0.0	0.0	0.0	37.8
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	290.56	-60.3	-18.9	0.0	-0.6		0.0	2.1	38.0	0.0	0.0	0.0	38.0
Receiver Monitor_ST-1		Leq,d	30.3			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	528.83	-65.5	0.4	-40.0	-1.1		0.0	8.8	20.1	0.0	0.0	0.0	20.1
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	628.32	-67.0	-13.3	-20.0	-1.3		0.0	15.8	29.8	0.0	0.0	0.0	29.8
Receiver Monitor_ST-2		Leq,d	35.6			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	526.87	-65.4	0.0	-25.1	-1.1		0.0	4.3	30.1	0.0	0.0	0.0	30.1
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	582.92	-66.3	-12.5	-9.4	-1.2		0.0	8.0	34.2	0.0	0.0	0.0	34.2
Receiver Monitor_ST-3		Leq,d	53.9			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	108.58	-51.7	-16.6	0.0	-0.2		0.0	3.5	52.3	0.0	0.0	0.0	52.3
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	134.66	-53.6	-17.6	0.0	-0.3		0.0	4.8	48.9	0.0	0.0	0.0	48.9
Receiver Monitor_ST-4		Leq,d	33.7			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	806.66	-69.1	-15.6	-4.2	-1.6		0.0	5.6	32.5	0.0	0.0	0.0	32.5
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	715.07	-68.1	-4.8	-16.0	-1.4		0.0	2.3	27.5	0.0	0.0	0.0	27.5
Receiver Monitor_ST-5		Leq,d	37.2			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	571.50	-66.1	-11.9	-17.0	-1.1		0.0	13.4	34.5	0.0	0.0	0.0	34.5
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	519.99	-65.3	-1.1	-29.6	-1.0		0.0	15.2	33.8	0.0	0.0	0.0	33.8
Receiver Test		Leq,d	51.3			dB(A)																	
Home Crowd source	Line	Leq,d	0.0	0.0	101.0	117.4	43.4	0.0	0.0	0	54.33	-45.7	-2.4	-19.6	-0.1		0.0	0.0	49.6	0.0	0.0	0.0	49.6
Visitor crowd source	Line	Leq,d	0.0	0.0	100.0	115.6	36.3	0.0	0.0	0	152.71	-54.7	-10.9	-10.1	-0.3		0.0	6.8	46.5	0.0	0.0	0.0	46.5

PlaceWorks 3 MacArthur Place, Ste 1100 Santa Ana, CA 92707 USA

SoundPLAN 7.1

TRAFFIC NOISE MODELING

Traffic Noise Calculator: FHWA 77-108 **Costa Mesa HS Stadium Expansion (NMU-22.0) Existing 2024 Traffic Noise**

	Output						Inputs															Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																			
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	68.4	71.2	71.4	69	218	689	Fairview Rd	the North	Baker St	25,870	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
2	68.9	71.7	71.9	78	245	776	Fairview Rd	Baker St	Adams Ave	29,150	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
3	66.4	69.2	69.4	44	139	440	Fairview Rd	Adams Ave	Monitor Wy	16,520	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
4	67.1	69.9	70.1	51	162	512	Fairview Rd	Monitor Wy	Mustang Wy	19,210	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
5	67.1	69.9	70.1	52	163	516	Fairview Rd	Mustang Wy	Arlington Dr	19,380	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
6	67.0	69.8	70.0	51	160	506	Fairview Rd	Arlington Dr	Merrimac Wy	18,990	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
7	67.1	69.9	70.1	51	162	511	Fairview Rd	Merrimac Wy	the South	19,190	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
8	67.7	70.4	70.7	59	185	586	Baker St	Fairview Rd	the East	22,830	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44
9	67.0	69.8	70.1	51	160	507	Baker St	Fairview Rd	the West	19,750	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44
10	66.6	69.4	69.6	46	144	455	Adams Ave	Fairview Rd	the West	21,280	40	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
11	54.0	56.8	57.0	3	8	25	El Camino Rd	Fairview Rd	the East	3,900	25	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	2	Hard	50	0	20
12	56.4	59.2	59.4	4	14	44	Merrimac Wy	Fairview Rd	the West	2,970	35	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44

Traffic Noise Calculator: FHWA 77-108 — **Costa Mesa HS Stadium Expansion (NMU-22.0) Existing Plus Project Traffic Noise**

	Output						Inputs																Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																				
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever		Ground Absorption	Lane Distance
1	68.5	71.2	71.5	70	222	704	Fairview Rd	the North	Baker St	26,420	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50		0	68
2	69.0	71.8	72.0	80	253	799	Fairview Rd	Baker St	Adams Ave	30,020	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50		0	68
3	67.0	69.8	70.1	51	161	509	Fairview Rd	Adams Ave	Monitor Wy	19,100	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50		0	68
4	67.3	70.1	70.3	54	171	540	Fairview Rd	Monitor Wy	Mustang Wy	20,270	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50		0	68
5	67.3	70.1	70.3	54	170	537	Fairview Rd	Mustang Wy	Arlington Dr	20,180	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50		0	68
6	67.2	70.0	70.2	52	166	525	Fairview Rd	Arlington Dr	Merrimac Wy	19,710	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50		0	68
7	67.2	70.0	70.2	53	167	527	Fairview Rd	Merrimac Wy	the South	19,810	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50		0	68
8	67.7	70.5	70.7	59	187	592	Baker St	Fairview Rd	the East	23,060	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	4	Hard	50		0	44
9	67.1	69.8	70.1	51	161	509	Baker St	Fairview Rd	the West	19,840	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	4	Hard	50		0	44
10	66.6	69.4	69.6	46	144	457	Adams Ave	Fairview Rd	the West	21,360	40	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	6	Hard	50		0	68
11	54.1	56.9	57.1	3	8	26	El Camino Rd	Fairview Rd	the East	4,010	25	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	2	Hard	50		0	20
12	56.5	59.3	59.6	5	14	45	Merrimac Wy	Fairview Rd	the West	3,070	35	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	4	Hard	50		0	44

Traffic Noise Calculator: FHWA 77-108 | **Costa Mesa HS Stadium Expansion (NMU-22.0) Opening Year 2025 Traffic Noise**

	Output						Inputs															Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																			
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	68.7	71.5	71.8	75	238	753	Fairview Rd	the North	Baker St	28,270	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
2	69.3	72.1	72.3	85	268	848	Fairview Rd	Baker St	Adams Ave	31,850	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
3	67.2	70.0	70.2	53	166	525	Fairview Rd	Adams Ave	Monitor Wy	19,730	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
4	67.5	70.2	70.5	56	177	559	Fairview Rd	Monitor Wy	Mustang Wy	20,980	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
5	67.5	70.3	70.5	56	178	564	Fairview Rd	Mustang Wy	Arlington Dr	21,180	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
6	67.4	70.2	70.4	55	175	553	Fairview Rd	Arlington Dr	Merrimac Wy	20,750	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
7	67.5	70.2	70.5	56	177	559	Fairview Rd	Merrimac Wy	the South	20,980	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
8	68.0	70.8	71.1	64	203	640	Baker St	Fairview Rd	the East	24,950	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44
9	67.4	70.2	70.4	55	175	554	Baker St	Fairview Rd	the West	21,590	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44
10	66.9	69.7	70.0	50	157	497	Adams Ave	Fairview Rd	the West	23,260	40	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
11	54.4	57.2	57.4	3	9	27	El Camino Rd	Fairview Rd	the East	4,270	25	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	2	Hard	50	0	20
12	56.8	59.6	59.8	5	15	48	Merrimac Wy	Fairview Rd	the West	3,250	35	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44

Traffic Noise Calculator: FHWA 77-108 **Costa Mesa HS Stadium Expansion (NMU-22.0) Opening Year 2025 Plus Project Traffic Noise**

	Output						Inputs																Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																				
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	68.8	71.6	71.9	77	243	767	Fairview Rd	the North	Baker St	28,820	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
2	69.4	72.2	72.4	87	276	871	Fairview Rd	Baker St	Adams Ave	32,720	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
3	67.4	70.2	70.4	55	175	553	Fairview Rd	Adams Ave	Monitor Wy	20,780	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
4	67.7	70.5	70.7	59	186	587	Fairview Rd	Monitor Wy	Mustang Wy	22,040	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
5	67.7	70.4	70.7	59	185	585	Fairview Rd	Mustang Wy	Arlington Dr	21,980	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
6	67.6	70.3	70.6	57	181	572	Fairview Rd	Arlington Dr	Merrimac Wy	21,470	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
7	67.6	70.4	70.6	58	182	575	Fairview Rd	Merrimac Wy	the South	21,600	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
8	68.1	70.9	71.1	65	204	646	Baker St	Fairview Rd	the East	25,180	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44
9	67.4	70.2	70.5	56	176	557	Baker St	Fairview Rd	the West	21,680	40	0.0%	96.0%	2.5%	1.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44
10	67.0	69.8	70.0	50	158	499	Adams Ave	Fairview Rd	the West	23,340	40	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	6	Hard	50	0	68
11	54.5	57.3	57.5	3	9	28	El Camino Rd	Fairview Rd	the East	4,380	25	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	2	Hard	50	0	20
12	56.9	59.7	59.9	5	15	49	Merrimac Wy	Fairview Rd	the West	3,320	35	0.0%	98.0%	1.5%	0.5%	85.0%	5.0%	10.0%	4	Hard	50	0	44

Appendix D Transportation Impact Analysis

Appendix

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DRAFT Report

Costa Mesa High School Stadium Traffic Impact Analysis

Prepared for Newport-Mesa Unified School District

by ARCADIS

PlaceWorks

December 11, 2024

Document Control Page

CLIENT:	Newport-Mesa Unified School District
PROJECT NAME:	Costa Mesa High School Stadium TIA
REPORT TITLE:	Costa Mesa High School Stadium Traffic Impact Analysis
PROJECT NUMBER	141549
VERSION:	3
DIGITAL MASTER:	J:\141549_Costa_Mesa_H
ORIGINATOR:	Brian Vong
REVIEWER:	Lydia La Point
AUTHORIZATION:	
CIRCULATION LIST:	
HISTORY:	Previous version January 25, 2023

Table of Contents

Table of Contents (continued)

Table of Figures

Executive Summary

The Newport-Mesa Unified School District (NMUSD) is planning to build a new team room building and expand the seating at the athletic stadium on the Costa Mesa High School (CMHS) campus. The stadium provides a total of 950 existing bleacher seats. The project plans to increase the bleacher seating by 1,060 seats, resulting in a total of 2,010 seats. No roadway modifications or changes to CMHS site access and circulation are planned as part of the project. The purpose of this report is to analyze and identify the traffic impacts associated with the proposed stadium improvements.

Varsity football games with attendance at stadium capacity are forecast to generate a total of 212 evening peak hour trips (201 inbound and 11 outbound). This value is based on driveway volumes observed at Orange Coast College during a Varsity football game between Costa Mesa High School and Estancia High School before Jim Scott Stadium was built. The proposed stadium is not expected to generate a significant number of trips during the AM peak hour, so the PM peak hour is the only time period selected for analysis.

The analysis includes major intersections and site access driveways where the project is expected to send 50 or more peak hour trips. In the existing and future conditions with the project, there are no intersections forecast to experience impacts according to criteria established by the City of Costa Mesa and the *2009 Congestion Management Program (CMP) for Orange County.* All study intersections are forecast to operate at LOS D or better in both the Existing (Year 2022) and Project Opening (Year 2026) With Project conditions. The project does not involve a General Plan Amendment, so a horizon year traffic impact analysis is not required.

To avoid parking and traffic conflicts, it is recommended that the NMUSD and CMHS staff avoid scheduling other activities on the CMHS campus when capacity events such as varsity football games are being held at the new stadium.

1 Introduction

The Newport-Mesa Unified School District (NMUSD) is planning to expand the seating at the athletic stadium on the Costa Mesa High School (CMHS) campus. Costa Mesa High School is situated on approximately 49 acres of land east of Fairview Road and north of Arlington Drive. Adjacent land uses include Orange Coast College (OCC) to the west, the OC Fair & Event Center to the south, Davis Magnet School to the east and residential development to the north. The site is designated as Public/Institutional land use in the City of Costa Mesa General Plan.

The stadium is near the southeast corner of the property, where there are 675 bleacher seats on the “home” side of the field and 275 seats on the “visitor” side for a total of 950 bleacher seats. The project plans on increasing the “home” and “visitor” seats by 780 and 280, respectively, for a total of 1,060 bleacher seats. The project location and study area are shown in Figure 1.1. A preliminary project site plan is shown in Figure 1.2.

The Costa Mesa High School Stadium serves as a venue for special events and field sports and is not expected to generate a significant number of trips daily due to the proposed stadium improvements.

There are 556 striped parking spaces on the Costa Mesa High School site. The school parking lot locations and driveways are illustrated on the Costa Mesa High School Completed Master Plan in Figure 1.3.

1.1 Study Area

The project site is about one mile south of the Interstate 405 (I-405) freeway and one mile west of the State Route 55 (SR-55) and State Route 73 (SR-73) freeways. The project study area includes major intersections and site access driveways where the project is expected to send 50 or more peak hour trips and is bounded by the I-405 freeway to the north, Harbor Boulevard to the west, SR-55 to the south and SR-73 to the east.

1.2 Report Sections

This report consists of nine sections. Section 1 introduces the report, and Section 2 presents the methodology used for analysis. Section 3 describes the existing conditions of the project site, study intersections and surrounding roadway network. In Section 4, the traffic volumes and lane geometry assumptions used in future year analyses are developed. The number of project generated trips and their distribution through the study area are shown in Section 5. The results of the intersection level of service analysis for the existing and project opening year conditions with and without the project are summarized in Section 6. Section 7 includes the site access, traffic management, parking, and pedestrian circulation analyses. Section 8 addresses Congestion Management Program (CMP) requirements, and the study conclusions and recommendations are presented in Section 9.

FIGURE 1.1: PROJECT LOCATION AND STUDY AREA

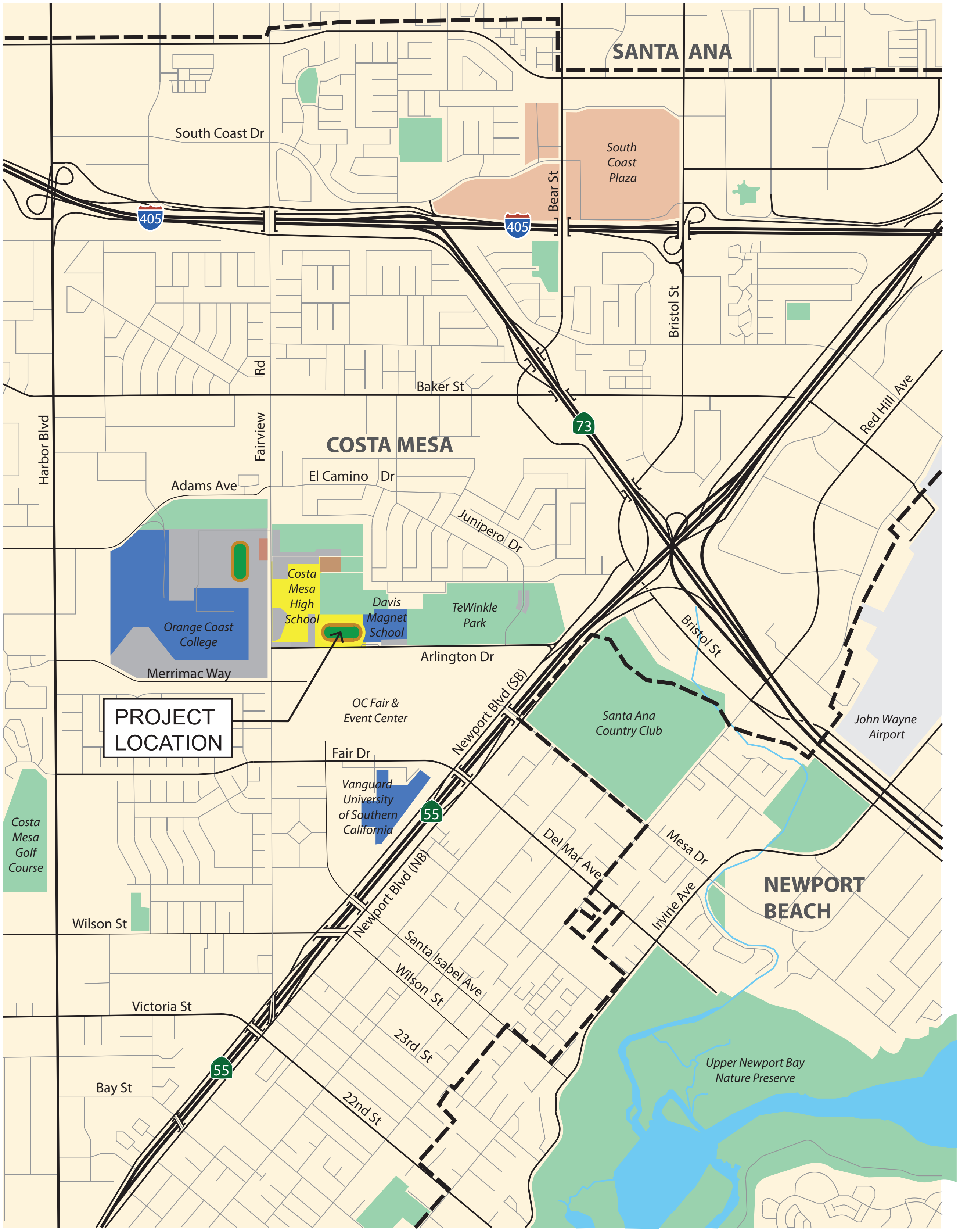
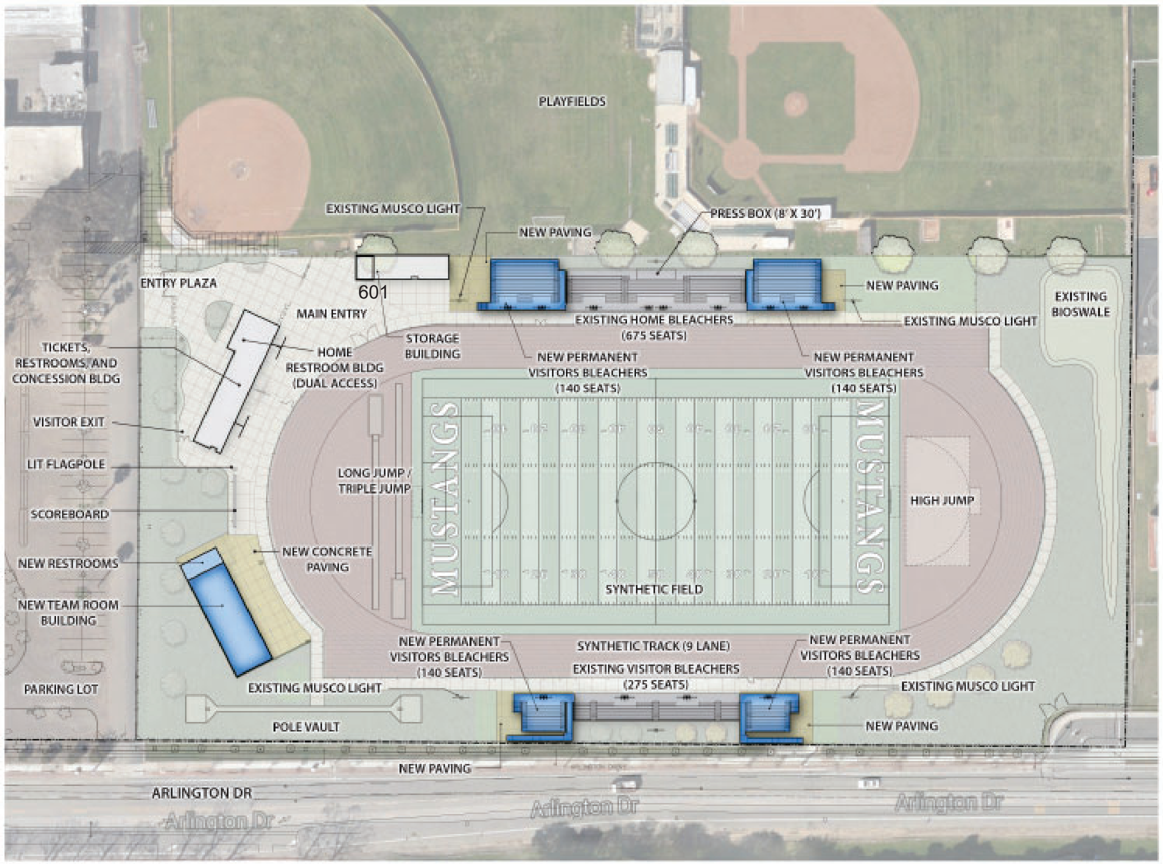


FIGURE 1.2: PROJECT SITE PLAN

COSTA MESA HIGH SCHOOL: SPORTS COMPLEX

NEWPORT MESA UNIFIED SCHOOL DISTRICT
2650 FAIRVIEW ROAD, COSTA MESA, CA

APRIL 2016



STADIUM SITE PLAN: OPTION 2-PERMANENT BLEACHERS

HOME BLEACHERS- 1455 TOTAL SEATS

675 EXISTING SEATS:	
780 NEW SEATS @ $350/ SEAT:	$273,000 (QUOTED FROM SOUTHERN BLEACHERS)
RAMP MODIFICATIONS:	$ 40,000
DEMOLITION:	$ 25,000
SITE WORK:	$ 40,000
TOTAL COST:	$378,000

VISITOR BLEACHERS- 555 TOTAL SEATS

275 EXISTING SEATS:	
280 NEW SEATS @ $350/ SEAT:	$ 98,000 (QUOTED FROM SOUTHERN BLEACHERS)
RAMP MODIFICATIONS:	$ 40,000
DEMOLITION:	$ 25,000
SITE WORK:	$ 40,000
TOTAL COST:	$203,000

NEW TEAM ROOM BUILDING

TEAM ROOM	
2674 SQ. FT. @ $400/ SQ. FT:	$1,169,600
RESTROOMS	
413 SQ. FT. @ $ 450/ SQ. FT:	$158,850
SITE WORK:	$100,000
TOTAL SQ. FT:	3087 SQ. FT.
TOTAL COST:	$1,428,450
15% CONTINGENCY:	$301,418
ESTIMATED CONSTRUCTION COST:	**$2,310,868**

CALIFORNIA PLUMBING CODE MINIMUM FIXTURE CALCULATION

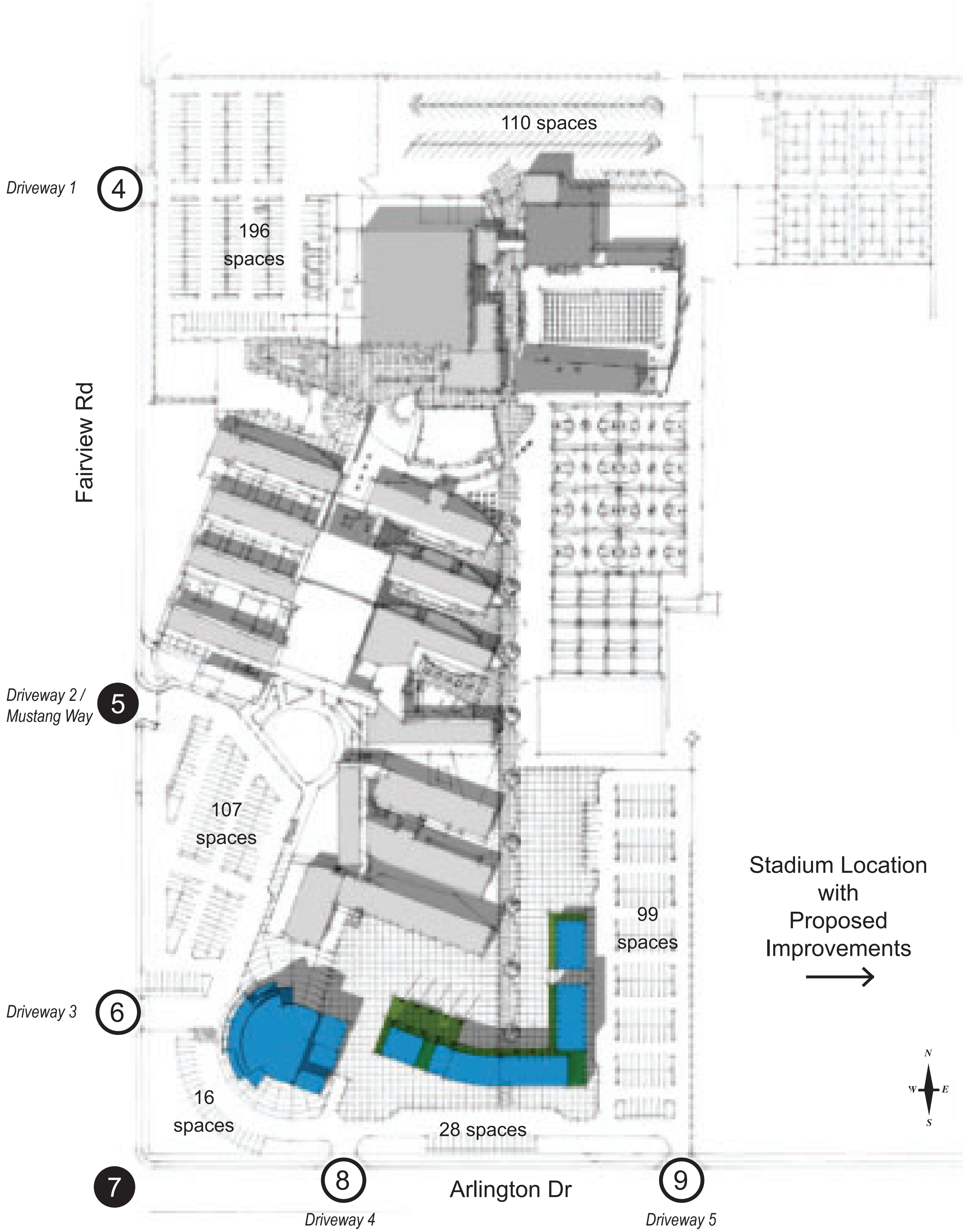
RESTROOM FIXTURE COUNTS:										
FIXTURES		FIXTURES IN CURRENT	FIXTURES REQUIRED BY CODE:							
BLEACHER			CURRENT FIXED	FIXED +1 MOBILE	FIXED +2 MOBILE	FIXED +3 MOBILE	FIXED + TEMP +1 MOBILE	FIXED + TEMP + 2 MOBILE	FIXED + TEMP + 3 MOBILE	FIXED + FUTURE FIXED
TOTAL SPECTATORS		950	950	1300	1600	1900	2300	2600	2900	3000
MALES:		475	475	650	800	950	1150	1300	1450	1500
	TOILETS	10	4	4	4	5	5	5	6	6
	URINALS	6	4	5	5	6	6	7	7	7
	LAVATORIES	6	3	3	4	4	5	6	6	6
FEMALES:		475	475	650	800	950	1150	1300	1450	1500
	TOILETS	16	9	10	12	13	14	16	17	17
	LAVATORIES	6	5	6	7	7	8	9	10	10

REFER TO C.P.C TABLE 422.1

RUHNAU RUHNAU CLARKE
ARCHITECTS PLANNERS

BLEACHER & TEAMROOM FEASIBILITY STUDY 2

FIGURE 1.3: COSTA MESA HIGH SCHOOL COMPLETED MASTER PLAN



2 Analysis Methodology

The intersection analysis methodology and performance criteria used in this analysis conform to the traffic impact analysis guidelines for projects located in the City of Costa Mesa.

2.1 Intersection Analysis

Traffic conditions at signalized study intersections are analyzed using the Intersection Capacity Utilization (ICU) methodology adopted in the Orange County Congestion Management Program[1] (CMP). The ICU methodology is based on intersection volume-to-capacity (V/C) ratios. The ICU value for each movement is the observed or forecast volume divided by the saturation flow volume. The intersection ICU value is the sum of the ICU values for the critical movement on each leg, where the critical movement is the one (left, through, or right) that has the highest ICU value. ICU values are usually expressed as a decimal percent (e.g., 0.74), where 1.00 represents the saturated condition where the volume of traffic flow is equal to the capacity.

The methodology described in Chapter 17 of the 2000 Highway Capacity Manual (HCM 2000) has been utilized to analyze unsignalized intersections. This methodology estimates the average control delay and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach.

The efficiency of traffic operations is measured in terms of Level of Service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of roadways and intersections involves the assignment of grades from “A” to “F,” with LOS “A” representing the highest-level operating conditions and LOS “F” representing extremely congested and restricted operations. Each letter grade corresponds to a range of V/C values, which are described for intersections operating under signal control in Table 2-1. The level of service criteria for unsignalized intersections is presented in Table 2-2.

Intersection Level of Service analysis for signalized intersections were calculated using Intersection Capacity Utilization worksheets which is an Excel-based worksheet that calculates critical movements and identifies an ICU value and its corresponding LOS. Additionally, analysis of the unsignalized intersections were performed using the Highway Capacity Method (HCM 2000) which calculated the delay and LOS for the worst-approach.

---

[1] 1999 Orange County Congestion Management Plan (CMP), OCTA

Table 2-1 Level of Service Criteria for Signalized Intersections

Level of Service	ICU Value	Definition
A	0.00 – 0.60	At LOS A there are no cycles that are fully loaded, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turning movements are easily made, and nearly all drivers find freedom of operation.
B	0.61 – 0.70	LOS B represents stable operation. An occasional approach phase is fully utilized, and many are approaching full use. Drivers may begin to feel restricted within platoons of vehicles.
C	0.71 – 0.80	In LOS C, stable operation continues. Full signal cycle loading is still intermittent, but more frequent. Occasionally drivers may have to wait through more than one red signal indication, and back-ups may develop behind turning vehicles.
D	0.81 – 0.90	LOS D encompasses a zone of increasing restriction, approaching instability. Delay to approaching vehicles may be substantial during short peaks within the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive back-ups.
E	0.91 – 1.00	LOS E represents the most vehicles that any particular intersection approach can accommodate. At capacity (V/C = 1.00) there may be long queues of vehicles waiting upstream of the intersection and delays may be great (up to several signal cycles).
F	> 1.000	LOS F represents jammed conditions. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles and volumes carried are not predictable. V/C values are highly variable, because full utilization of the approach may be prevented by outside conditions.
ICU – Intersection Capacity Utilization		

Table 2-2 Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Delay (sec/veh)	Definition
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion
ICU – Intersection Capacity Utilization Source: Highway Capacity Manual (HCM 2000), Chapter 17		

Analysis Years and Scenarios

The traffic study will include an analysis of the following scenarios:

- Existing (Year 2022) No Project
- Existing (Year 2022) With Project
- Project Opening (Year 2026) Baseline No Project
- Project Opening (Year 2026) With Project

The project does not require a General Plan amendment, so a Horizon Year analysis is not necessary. The Baseline condition for the Project Opening (Year 2026) includes an ambient traffic growth rate.

Intersection Analysis Time Period

The proposed stadium project is not expected to generate a significant number of vehicle trips during the AM peak hour. The only time period selected for analysis in this study is the weekday PM peak hour (5:00 PM to 7:00 PM).

Performance Standards

Per Costa Mesa requirements, the ICU calculations will utilize a lane capacity of 1,600 vehicles per hour for left-turn lanes, through lanes, and right-turn lanes. The City of Costa Mesa does not make adjustments for clearance intervals since the assumed lane capacity reflects the effect of lost time.

2.2 Traffic Count Data

Peak period turning movement counts were taken at the study intersections from 5:00 PM to 7:00 PM on Friday, October 7th, 2022 due to the varsity football game that was taking place at the time. Twenty-four hour directional tube counts were also taken on Fairview Road north of Mustang Way/Pirate Way and north of Fair Drive, and on Arlington Drive east of Fairview Road. All traffic count data collected for this study is included in the Appendix.

2.3 Forecast Traffic Volumes

A growth factor of 4% (equivalent to 1% per year for four years) has been applied to the Existing (Year 2022) counts to estimate the increase in ambient traffic that would be expected by the Project Opening (Year 2026).

2.4 Traffic Analysis Performance Criteria

According to City of Costa Mesa criteria, LOS D (ICU = 0.801 – 0.900) is the minimum acceptable condition that should be maintained during the morning and evening peak commute hours. For signalized intersections, the Project will be considered to create a significant impact if the ICU value in the “With Project” condition is 0.91 or greater (LOS E or LOS F) and the ICU increase attributable to the Project is 0.01 or greater.

3 Existing Conditions

The project study area includes major arterials and intersections that the project is expected to send 50 or more peak hour trips through. Descriptions of roadway conditions and intersection geometrical features are included in this section.

3.1 Roadway Conditions

Existing Roadway Network

Selected arterials that provide access to the Costa Mesa High School site are described in this section. Items of note include existing geometry, pedestrian and bicycle facilities, street parking, adjacent land uses and the Orange County Master Plan of Arterial Highways (OC MPAH) designation.

Fairview Road is generally a six-lane divided Major Arterial that travels north and south in the study area. Within the study area, Class II bike lanes are striped along the curb on both sides of the street and on-street parking is not permitted. The posted speed limit is 40 mph. Land uses along Fairview Road include Costa Mesa High School, Orange Coast College (OCC), the OC Fair & Event Center, and residential and commercial developments. Fairview Road borders the project site to the west and provides access to the site via a traffic signal at Mustang Way and two unsignalized driveways. Traffic signals control the study intersections of Fairview Road at Baker Street, Adams Avenue/El Camino Drive, Sports Complex/Monitor Way, Mustang Way/Pirate Way, Arlington Drive, Merrimac Way, and Fair Drive.

Baker Street is generally a four-lane Primary Arterial with a center two-way left turn lane that travels east and west in the study area. West of Fairview Road, parking is allowed along the south side of street and there are no bike lanes. East of Fairview Road, there are Class II bike lanes striped along both sides of the street and on-street parking is not permitted. The posted speed limit is 40 mph. Land uses along Baker Street are primarily commercial and residential. Baker Street provides access to the SR-73 Freeway and many of the residential developments within the CMHS attendance area.

Adams Avenue/El Camino Drive that travels east and west through the study area. To the west of Fairview Road, the street is labelled as Adams Avenue and is generally a six-lane divided Major Arterial with a posted speed limit of 40 mph. Between Pinecreek Drive and Fairview Road, the westbound segment narrows from three to two travel lanes to provide space for on-street parking. Land uses adjacent to Adams Avenue include Orange Coast College, multi-family residential and commercial developments. On the east side of Fairview Road, the street is called El Camino Drive and is a two-lane undivided local street serving single family residences. Parking is permitted on El Camino Drive, and the posted speed limit is 25 mph. There are no bike lanes on Adams Avenue or El Camino Drive.

Arlington Drive is an undivided Collector Street that runs east and west between Fairview Road and Newport Boulevard. West of Fairview Road, Arlington Drive leads onto the OCC campus. Just east of Fairview Road, Arlington Drive is a four-lane street with a center two-way left turn lane and Class II bike lanes. About 700 feet east of Fairview Road, the road narrows to one lane in each direction. At about 2,400 feet east of Fairview Road, Arlington Drive narrows again to a two-lane undivided roadway with no bike lanes. Adjacent land uses include Costa Mesa High School, the OC Fair & Event Center, Davis Magnet School and TeWinkle Park. The posted speed limit is 35 mph.

Merrimac Way runs east and west through the study area. West of Fairview Road, it is a four-lane divided Primary Arterial with Class II bike lanes and a posted speed limit of 35 mph. This street segment provides access to the OCC campus and single-family residential developments.

On-street parking is not permitted. West of Fairview Road, Merrimac Way leads into the OC Fair & Event Center surface parking lot.

3.2 Site Access Driveways

The three existing access points (one signalized and two unsignalized) to the CMHS parking lots on Fairview Drive currently serve approximately 1,800 students and school employees that utilize the facility during the school year. These access intersections operate at an acceptable level of service. The Completed Master Plan (shown in Figure 1.3) includes a total of 556 parking spaces in site surface parking lots.

- Driveway 1 is located on Fairview Road at the northwest corner of the campus and leads to 306 parking spaces. Vehicles exiting from this driveway may turn right, but must yield to traffic on Fairview Road, which is uncontrolled. Vehicles traveling southbound on Fairview Road may turn left into this driveway, and northbound vehicles may turn right. This parking lot is not connected to the parking facilities on the south side of the campus but is linked to The Farm Soccer Complex parking lot, which holds 176 parking spaces.
- Driveway 2 is the east leg of the signalized intersection of Fairview Road and Mustang Way/Pirate Way. Mustang Way leads to the CMHS faculty parking lot with 107 parking spaces, and Pirate Way travels onto the Orange Coast College campus. The parking lots on the south side of the CMHS campus are all connected, and can be accessed from Driveways 2, 3, 4 and 5.
- Driveway 3 is an unsignalized right-in/right-out facility that leads directly to the 107 parking spaces in the faculty lot, a drop-off area, and 16 parking spaces in front of the Performing Arts Center. The 250 parking spaces on the south side of the campus could all be accessed from Driveway 3.
- Driveway 4 is located on Arlington Drive between the theatre and middle school enclave buildings. It provides direct access to 16 parking spaces in front of the theatre and 28 spaces along Arlington Drive in front of the Middle School Enclave building. Vehicles exiting the driveway can turn left or right, but must yield to traffic on Arlington Drive, which is uncontrolled. All 250 parking spaces on the south side of the campus could be accessed from Driveway 4.
- Driveway 5 is located on Arlington Drive just east of the middle school enclave buildings. It provides direct access to a drop off area and 99 parking spaces in a surface lot between the middle school enclave buildings and the stadium. Vehicles exiting the driveway can turn left or right, but must yield to traffic on Arlington Drive, which is uncontrolled. All 250 parking stalls on the south side of the campus could be accessed from Driveway 5.

3.3 Intersections

Ten study intersections have been selected for analysis based on traffic patterns and forecast project trip distribution through the study area. The list of study intersections includes:

1. Fairview Road & Baker Street
2. Fairview Road & Adams Avenue/El Camino Drive
3. Fairview Road & Sports Complex/Monitor Way
4. Fairview Road & Costa Mesa High School (CMHS) Driveway 1 ****Unsignalized****
5. Fairview Road & Mustang Way/Pirate Way

6. Fairview Road & CMHS Driveway 3 ****Unsignalized****
7. Fairview Road & Arlington Drive
8. CMHS Driveway 4 & Arlington Drive (Future Intersection) ****Unsignalized****
9. CMHS Driveway 5 & Arlington Drive (Future Intersection) ****Unsignalized****
10. Fairview Road & Merrimac Way

The lane geometry and traffic control for each intersection are illustrated in Figure 3.1. The PM peak hour intersection traffic count and ADT volumes collected in 2022 are shown in Figure 3.2.

FIGURE 3.1: STUDY INTERSECTION GEOMETRY AND CONTROL

FIGURE 3.2: EXISTING (YEAR 2022) TRAFFIC COUNT VOLUMES – PM

4 Future Traffic Without the Proposed Project

This section develops the No Project condition in the study area for the Project Opening (Year 2026) with ambient traffic growth. The project does not require a General Plan Amendment, so a Horizon Year analysis is not necessary.

4.1 Ambient Traffic Growth

Ambient traffic growth is the increase in traffic that is expected to occur in the study area due to general employment growth, housing growth and growth in regional through trips. Even if there was no change in housing or employment in the study area, there is expected to be some background (ambient) traffic growth in the region.

A growth factor of 4% (equivalent to 1% per year for four years) has been applied to the Existing (Year 2022) counts to estimate the increase in ambient traffic that would be expected by the Project Opening (Year 2026). The Project Opening (Year 2026) traffic volume movements for the PM peak hour through the project study intersections are illustrated in Figure 4.1.

4.2 Cumulative Related Projects

The previous cumulative project list has been identified to be fully built out at the time the new traffic counts were collected. Per the City of Costa Mesa's Major Housing Developments Report, there are no major developments within a one-mile radius of the project site. Therefore, the ambient growth rate is adequate in for forecasting future opening year volumes.

FIGURE 4.1: OPENING (YEAR 2026) NO PROJECT VOLUMES – PM PEAK

5 Proposed Project Conditions

A description of the proposed stadium project and the expected volume, distribution, and frequency of project-generated trips are presented in this section.

5.1 Project Description

The Newport-Mesa Unified School District (NMUSD) is planning to build a new team room building and expand the seating at the athletic stadium on the Costa Mesa High School (CMHS) campus. The proposed stadium plans include 780 bleacher seats on the “home” side of the field and 280 seats on the “visitor” side for a total of 1,060 added bleacher seats. A project site plan is shown in Figure 1.2, and the anticipated opening year for the stadium improvements is 2026.

5.2 Trip Generation

The stadium land use category is not currently listed in the Institute of Transportation Engineers (ITE) *Trip Generation* Manual, and there is limited local or national survey data available for this type of use. High school stadiums typically do not generate a significant number of vehicle trips during the peak hours of adjacent street traffic, but volumes may vary depending on the type of event and the scheduled start time. Daily trip generation for this type of special event land use is highly variable and depends on a number of local factors including demographics, weather patterns, team performance, and other site-specific criteria. Stadium uses that would not attract large numbers of spectators are not expected to generate any additional trips. Sports team practices and activities that take place on the track and field are already generating vehicle trips to the site. The only new trips that are expected to be generated by the stadium would be for events with a significant volume of spectators seated in the bleachers.

Before the Jim Scott stadium was constructed at Estancia High School, a trip generation study was prepared by recording driveway volumes at Orange Coast College during a varsity football game between Costa Mesa High School and Estancia High School. The trip generation rates developed as part of the Estancia High School Stadium Traffic and Parking Impact Analysis[2] are summarized in Table 6-1, along with the CMHS stadium project trips.

[2] Estancia High School Stadium Traffic and Parking Impact Analysis (RK Engineering Group, Inc. February 2001)

Table 5-1 CMHS Stadium Project Trip Generation

	Units	Quantity	PM Peak Hour (Pre-Event)			Daily
			Inbound	Outbound	Total	
Rates[2]	*SEATS*	-	*0.19*	*0.01*	*0.20*	*0.47*
Project Trips	SEATS	1,060	201	11	212	498

The stadium trips developed in this section would not be generated on typical weekdays throughout the year. The daily driveway volume of 498 trips and 212 peak hour trips are only expected to occur when a varsity football game or other special event that fills the stadium would occur. This traffic would have the characteristics of a special event and would not contribute to the typical daily traffic volumes year-round.

5.3 Trip Distribution

The distribution of project trips is based on the Costa Mesa High School attendance area, the location of site access driveways, and existing traffic patterns. The CMHS attendance area is bounded by Sunflower Avenue to the north, Harbor Boulevard to the west, and the SR-55 freeway to the south and east. It is assumed that 70% of the inbound trips originate from residential land uses within the attendance area, and the rest come from outside of the attendance area. For the outbound trips, it is assumed that 90% are destined for residential land uses within the attendance area, and 10% are headed beyond the attendance area.

Site Surface Parking Lots

The CMHS Completed Master Plan (shown in Figure 1.3) includes a total of 556 parking spaces in surface parking lots accessed from five site access driveways. Driveway 1 is located on Fairview Road at the northwest corner of the campus and leads to 306 parking spaces. This parking lot is not connected to the parking facilities on the south side of the campus, and people who park in the north lot would have to walk approximately 2,200 feet (0.42 miles) across the campus to get to the stadium. It is assumed that most stadium visitors would try to park as close to the entrance as possible and would only use the north parking lot if the other parking areas were full. The parking lots on the south side of the CMHS campus are connected, and accessible from Driveways 2, 3, 4 and 5.

Drop Off and Bus Lanes

Drop off and bus lanes will be located on the west and south sides of the campus. Visiting teams that travel to the site by bus would be dropped off near the stadium, and the buses would park in the north parking lot.

Project Trip Distribution and Project Generated Trips

The project trip distribution is presented in Figure 5.1, and the PM peak hour project generated trips through each of the study intersections are shown in Figure 5.2. The Existing (Year 2022) With Project PM peak hour volumes are available in Figure 5.3, and the Project Opening (Year 2026) With Project PM peak hour volumes are shown in Figure 5.4.

FIGURE 5.1: PROJECT TRIP DISTRIBUTION

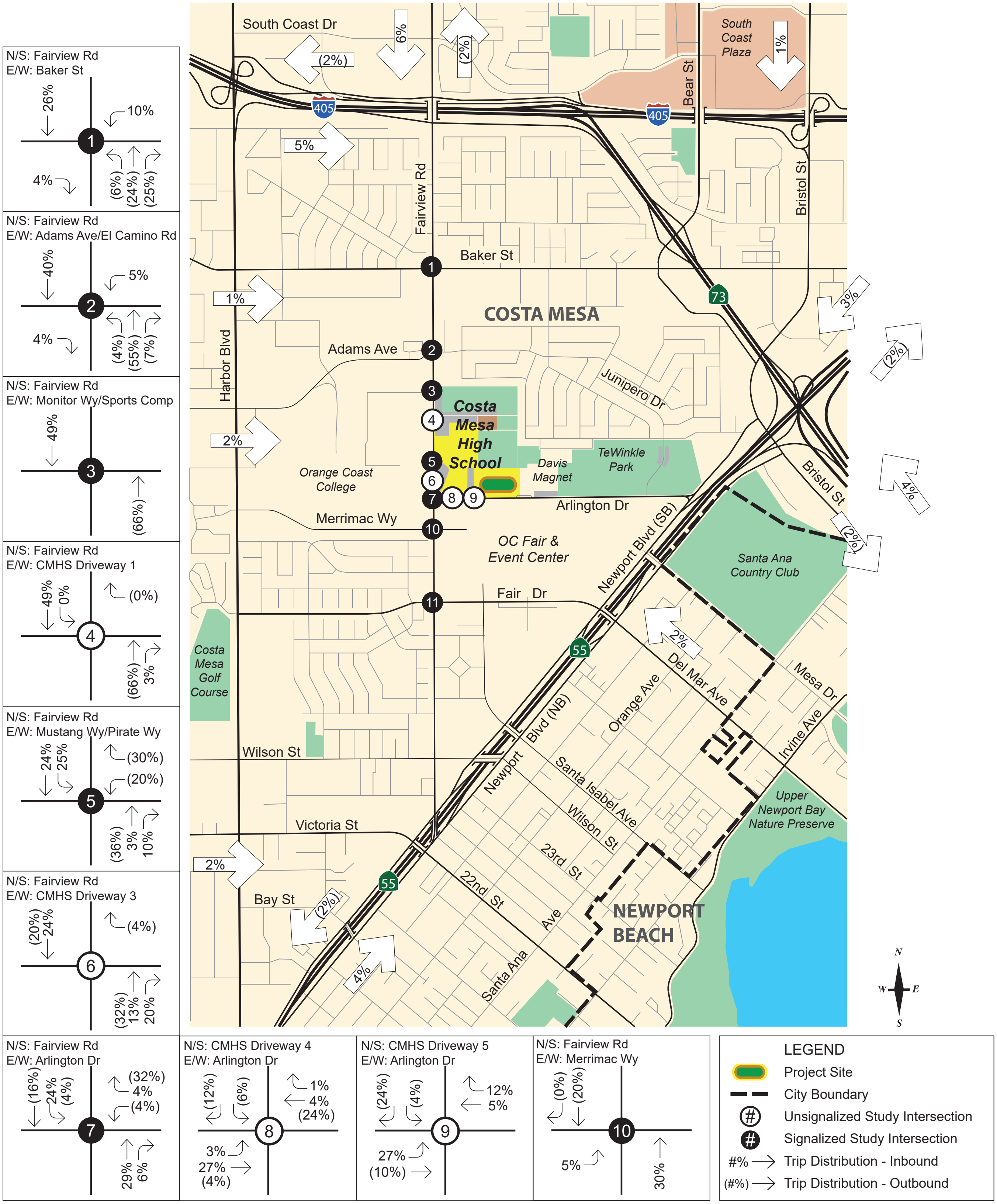


FIGURE 5.2: PROJECT GENERATED TRIPS – PM PEAK HOUR

FIGURE 5.3: EXISTING (YEAR 2022) WITH PROJECT VOLUMES – PM

FIGURE 5.4: OPENING (YEAR 2026) WITH PROJECT VOLUMES – PM

6 Level of Service Analysis Results

A summary of the level of service analysis results for the Existing (Year 2022) with and without the project is included in Table 6-1. All study intersections are forecast to operate at LOS D or better with the project, so the project would not be expected to create any significant impacts. The analysis results for the Project Opening (Year 2026) with and without the project is included in Table 6-2.

Table 6-1 Existing (Year 2022) PM Peak Hour Intersection LOS Comparison

Intersection		Control	No Project		With Project		Change in V/C or Delay	Impact
			V/C *Delay*	LOS	V/C *Delay*	LOS		
1	Fairview Rd & Baker St	Signal	0.550	A	0.560	A	0.010	N
2	Fairview Rd & Adams Ave	Signal	0.470	A	0.470	A	0.000	N
3	Fairview Rd & Monitor Wy	Signal	0.420	A	0.420	A	0.000	N
4	Fairview Rd & CMHS Dwy 1	Yield	*14.0 s*	B	*12.1 s*	B	*-1.9 s*	N
5	Fairview Rd & Mustang Way	Signal	0.430	A	0.460	A	0.030	N
6	Fairview Rd & CMHS Dwy 3	Yield	*0.0 s*	A	*8.8 s*	A	*8.8 s*	N
7	Fairview Rd & Arlington Dr	Signal	0.350	A	0.390	A	0.040	N
8	CMHS Dwy 4 & Arlington Dr	Yield	*9.9 s*	A	*10.0 s*	B	*0.1 s*	N
9	CMHS Dwy 5 & Arlington Dr	Yield	*10.4 s*	B	*10.7 s*	B	*0.3 s*	N
10	Fairview Rd & Merrimac Wy	Signal	0.300	A	0.320	A	0.020	N

Table 6-2 Project Opening (Year 2026) PM Peak Hour Intersection LOS Comparison

Intersection		Control	No Project		With Project		Change in V/C or Delay	Impact
			V/C *Delay*	LOS	V/C *Delay*	LOS		
1	Fairview Rd & Baker St	Signal	0.610	B	0.620	B	0.010	N
2	Fairview Rd & Adams Ave	Signal	0.520	A	0.520	A	0.000	N
3	Fairview Rd & Monitor Wy	Signal	0.480	A	0.480	A	0.000	N
4	Fairview Rd & CMHS Dwy 1	Yield	*13.2 s*	B	*13.4 s*	B	*0.2 s*	N
5	Fairview Rd & Mustang Way	Signal	0.470	A	0.510	A	0.040	N
6	Fairview Rd & CMHS Dwy 3	Yield	*8.9 s*	A	*8.9 s*	A	*0.0 s*	N
7	Fairview Rd & Arlington Dr	Signal	0.400	A	0.420	A	0.020	N
8	CMHS Dwy 4 & Arlington Dr	Yield	*10.1 s*	B	*10.2 s*	B	*0.1 s*	N
9	CMHS Dwy 5 & Arlington Dr	Yield	*10.6 s*	B	*10.9 s*	B	*0.3 s*	N
10	Fairview Rd & Merrimac Wy	Signal	0.330	A	0.350	A	0.020	N

All study intersections are forecast to operate at LOS D or better with the project and is not expected to create any significant impacts. Although the volumes increase due to the project, the delay actually decreases by 1.9 seconds and 1.3 seconds at the intersection of Fairview Road and Driveway 1 in Table 6-1 and Table 6-2, respectively. This is primarily due to the volumes being added to the non-critical lane groups, allowing the signal timing to be optimized for the major movements (i.e., less overall control delay).

7 Special Analyses

Site access, traffic management, parking and pedestrian circulation for the proposed stadium project are discussed in this section.

7.1 Site Access Analysis

No modifications to site access driveways or surface parking lots are planned as part of the stadium project. The number of vehicle and bus trips generated by CMHS during the typical weekday AM peak hour exceeds the number of trips expected to be generated by a capacity event at the stadium. The parking and drop off areas have been designed with sufficient space and turning radii to serve both stadium and non-stadium generated traffic.

7.2 Traffic Management

Based on the forecast traffic volumes and control at the CMHS site access points, stadium events are not expected to require any special traffic management. The existing CMHS/CMMS generates more vehicle and bus trips during the typical AM peak hour than are expected to be generated for a capacity stadium event. The site has been designed to handle the AM peak hour traffic and is expected to serve the stadium traffic as well.

Site Ingress

Varsity football games typically start at 7 PM, after the end of the PM peak hour of adjacent street traffic. Pre-event trips to the site are expected to occur during the PM peak hour but are not expected to require any special traffic management or control.

Site Egress

The exodus of vehicles from the site tends to occur over a much shorter period than arrivals. However, special traffic management is not expected to be necessary for the following reasons:

- At the end of a typical school day, vehicles leaving the CMHS/CMMS site will exit the facility at a similar or even greater level of concentration. The site has been designed to handle this traffic and is expected to serve the stadium traffic as well.
- Stadium events typically end well past the PM peak hour when adjacent street traffic volumes are very low.
- Vehicles exiting from Driveway 1 and Driveway 3 are restricted to right turn movements onto Fairview Road, limiting the conflicting movements and delay experienced at these locations.
- Driveway 2 (Fairview Road & Mustang/Pirate Way) operates under signal control.
- Driveways 4 and 5 are located on Arlington Drive, which is a local collector road serving primarily institutional land uses. Between 5:00 PM and 6:00 PM, 192 eastbound and 348 westbound vehicles were observed on Arlington Drive. Left turn movements from Driveways 4 and 5 are not significant and are not expected to cause significant conflicts with through traffic on Arlington Drive, and special traffic management measures are not expected to be required.

It is not anticipated that special traffic management or control would be required for stadium events. If there are significant complaints or incidents related to stadium traffic once the facility is open and operating, the NMUSD may work with the Costa Mesa Police Department to provide manual traffic control on Arlington Drive following capacity events at the stadium.

7.3 Parking Analysis

The High School Stadium land use is not included in the Institute of Transportation Engineers (ITE) Parking Generation report. In the absence of national statistical parking rates, parking demand for the Costa Mesa High School Stadium project was estimated using occupancy count data included in the University High School Stadium Project Traffic Impact Analysis Report (January 2008) prepared by IBI Group. The observed peak parking demand for a high school Homecoming Varsity football game at Irvine Stadium was 824 spaces, which corresponds to a demand rate of about 0.23 spaces per seat. The proposed Costa Mesa High School Stadium improvements will have an additional 1,060 seats resulting in a total of 2,010 seats, so total peak parking demand is estimated to be 462 parking spaces.

There are 556 striped parking spaces on the Costa Mesa High School property. With 1 parking space for every 1.75 bleacher seats, the parking supply is expected to exceed demand during typical and capacity events.

7.4 Pedestrian Circulation

The existing pedestrian facilities on and surrounding the campus adequately serve the high school facility and adjacent uses. No pedestrian circulation issues are identified at this time, and no mitigation measures are required.

8 Congestion Management Program (CMP) Requirements

The Orange County Congestion Management Program (CMP) monitors the level of service at all designated CMP intersections in the County. No CMP intersections are anticipated to serve more than 50 project-related trips during the PM peak hour, and no CMP intersections are in the traffic study area for the Costa Mesa High School Stadium. No significant traffic impacts are anticipated to CMP intersections as a result of the proposed Costa Mesa High School Stadium improvements. No mitigation measures are necessary.

9 Conclusion and Recommendations

The proposed stadium improvements at Costa Mesa High School are not expected to generate a significant number of trips daily throughout the year.

It is noted that the CMHS campus generates more vehicle trips and parking demand during the typical weekday AM peak hour than the stadium is expected to generate for a capacity event. The site has been designed to serve student and faculty parking and bus drop off activity. No modifications to site access driveways or internal circulation are proposed as part of the stadium project.

All study intersections currently operate at an acceptable level of service (LOS D or better) during the PM peak hour and are expected to continue to operate at LOS D or better in the Project Opening Year (2026) with and without the project. There are no impacts related to traffic or operations associated with the project, and no mitigation measures are required. Stadium events are not expected to require any special traffic management.

There are 556 striped parking spaces on the Costa Mesa High School site. With 1 parking space for every 1.75 bleacher seats, the parking supply is expected to exceed demand during typical and capacity events.

To avoid parking and traffic conflicts, it is recommended that the NMUSD and CMHS staff avoid scheduling other activities on the CMHS campus when capacity events such as varsity football games are being held at the new stadium.

APPENDIX

TRAFFIC COUNT DATA

CONDUCTED BY AIM TRAFFIC DATA

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Costa Mesa	PROJECT #:	SC3671
Fri, Oct 7, 22	NORTH & SOUTH:	Fairview	LOCATION #:	1
	EAST & WEST:	Baker	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

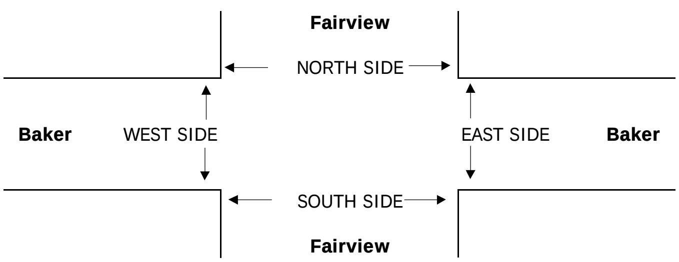
▲ N
◄ W
E ►
S ▼

☑ Add U-Turns to Left Turns

PM

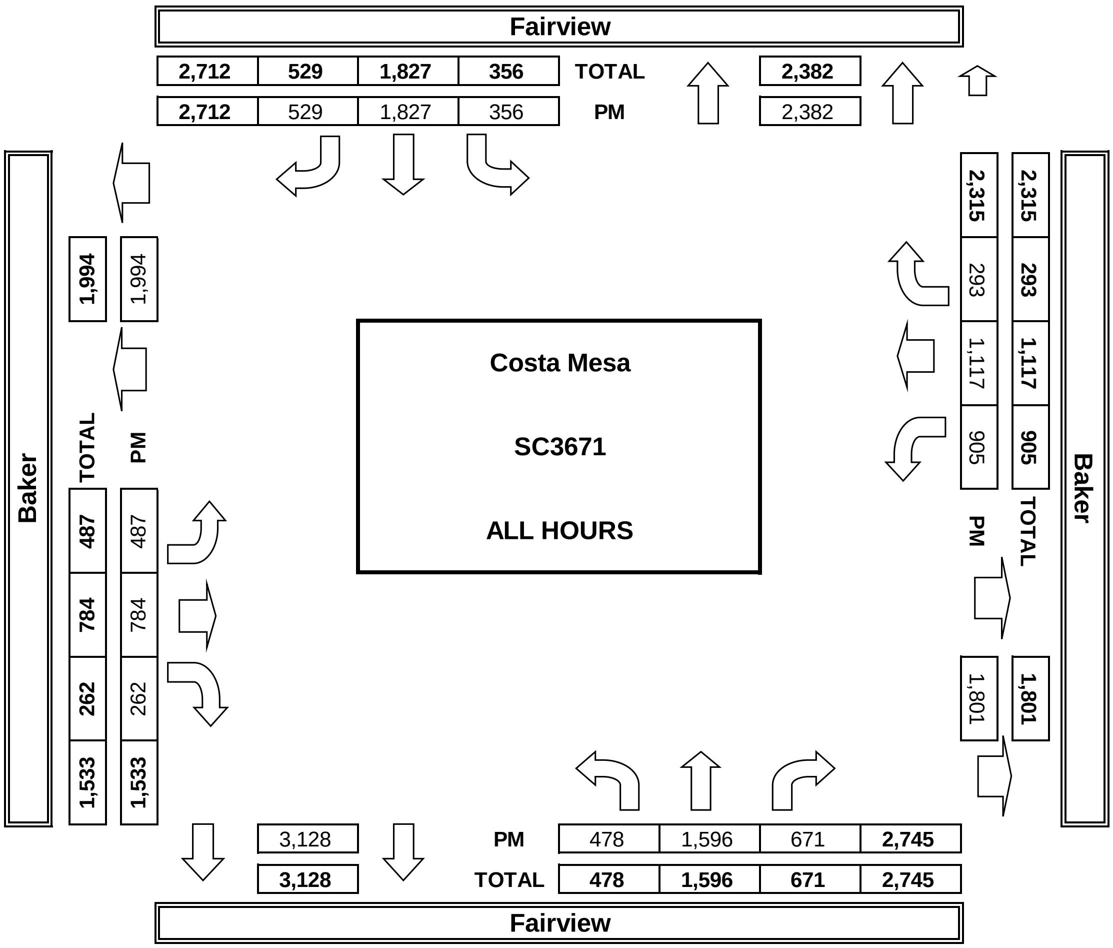
	NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Baker			WESTBOUND Baker			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	3	1	2	4	1	2	2	1	2	3	1	
5:00 PM	51	210	68	48	221	66	63	106	41	137	134	47	1,192
5:15 PM	63	188	82	41	222	76	75	115	25	131	206	43	1,267
5:30 PM	66	229	111	51	252	74	56	80	25	114	151	31	1,240
5:45 PM	54	175	86	44	197	79	63	107	26	141	173	36	1,181
6:00 PM	64	203	76	47	278	63	66	90	38	97	123	41	1,186
6:15 PM	58	186	77	49	226	56	66	107	36	104	127	46	1,138
6:30 PM	51	208	90	34	239	68	46	93	39	95	116	29	1,108
6:45 PM	71	197	81	42	192	47	52	86	32	86	87	20	993
VOLUMES	478	1,596	671	356	1,827	529	487	784	262	905	1,117	293	9,305
APPROACH %	17%	58%	24%	13%	67%	20%	32%	51%	17%	39%	48%	13%	
APP/DEPART	2,745	/	2,382	2,712	/	3,128	1,533	/	1,801	2,315	/	1,994	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	234	802	347	184	892	295	257	408	117	523	664	157	4,880
APPROACH %	17%	58%	25%	13%	65%	22%	33%	52%	15%	39%	49%	12%	
PEAK HR FACTOR		0.852			0.909			0.909			0.884		0.963
APP/DEPART	1,383	/	1,217	1,371	/	1,597	782	/	936	1,344	/	1,130	0

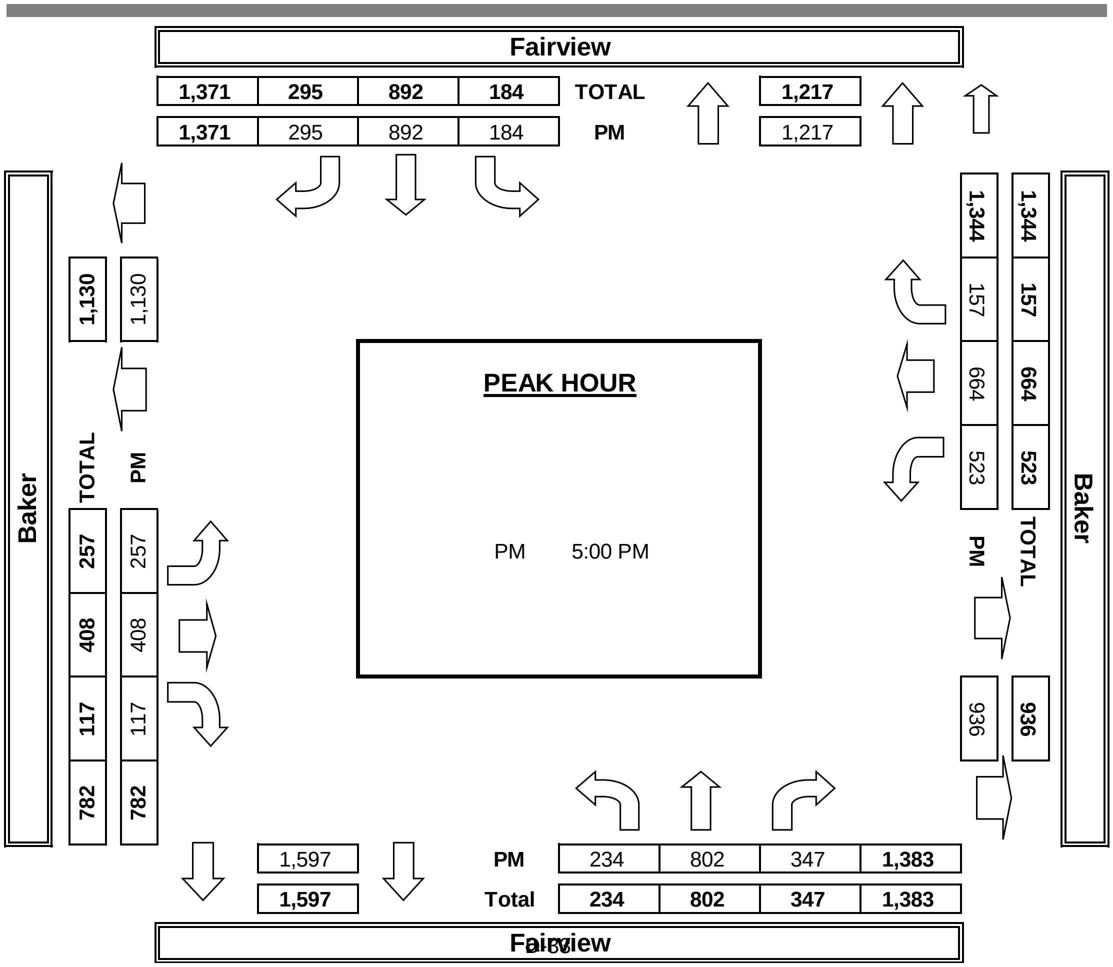
U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
8	3	0	0	11
16	0	1	0	17
26	1	1	0	28
16	0	1	1	18
19	0	0	0	19
13	0	2	0	15
13	2	0	0	15
24	5	0	0	29
135	11	5	1	152



AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Costa Mesa	PROJECT #:	SC3671
Fri, Oct 7, 22	NORTH & SOUTH:	Fariview	LOCATION #:	2
	EAST & WEST:	Adams	CONTROL:	SIGNAL

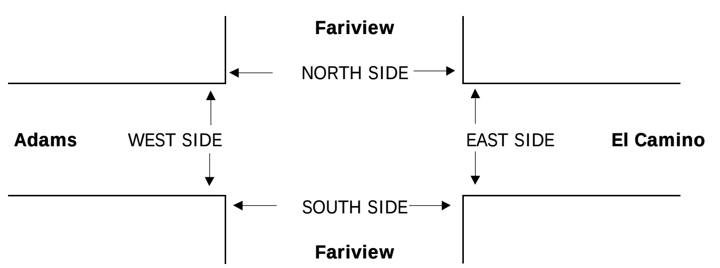
NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

	NORTHBOUND Fariview			SOUTHBOUND Fariview			EASTBOUND Adams			WESTBOUND El Camino			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	2	3	0	1	3	1	2	1	1	0.5	1.5	1	
PM 5:00 PM	71	162	9	15	152	245	116	18	36	11	29	11	875
5:15 PM	89	189	11	15	122	236	156	17	38	8	23	18	922
5:30 PM	83	214	19	13	140	241	127	28	46	10	24	17	962
5:45 PM	48	158	11	13	118	227	130	20	50	10	30	10	825
6:00 PM	63	144	6	20	155	212	125	23	38	7	25	15	833
6:15 PM	70	136	9	17	139	223	139	12	37	10	25	13	830
6:30 PM	93	187	14	7	140	173	144	19	41	14	19	12	863
6:45 PM	52	128	9	20	151	179	129	14	65	10	18	18	793
VOLUMES	569	1,318	88	120	1,117	1,736	1,066	151	351	80	193	114	6,903
APPROACH %	29%	67%	4%	4%	38%	58%	68%	10%	22%	21%	50%	29%	
APP/DEPART	1,975	/	2,544	2,973	/	1,604	1,568	/	313	387	/	2,442	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	291	723	50	56	532	949	529	83	170	39	106	56	3,584
APPROACH %	27%	68%	5%	4%	35%	62%	68%	11%	22%	19%	53%	28%	
PEAK HR FACTOR		0.842			0.933			0.927			0.985		0.931
APP/DEPART	1,064	/	1,326	1,537	/	759	782	/	171	201	/	1,328	0

U-TURNS					
	NB	SB	EB	WB	TTL
	0	0	0	0	
5:00 PM	2	4	0	0	6
5:15 PM	6	6	0	0	12
5:30 PM	7	4	0	0	11
5:45 PM	3	4	0	0	7
6:00 PM	1	6	0	0	7
6:15 PM	8	7	0	0	15
6:30 PM	21	2	0	0	23
6:45 PM	8	13	0	0	21
	56	46	0	0	102



AimTD LLC

TURNING MOVEMENT COUNTS

Costa Mesa — SC3671 — ALL HOURS

Fariview (north leg)

2,973	**1,736**	**1,117**	**120**	**TOTAL**	**2,544**
2,973	1,736	1,117	120	**PM**	2,544

El Camino (east leg)

	TOTAL	PM
	387	387
	114	114
	193	193
	80	80
	313	313

Adams (west leg)

	TOTAL	PM
	2,442	2,442
	1,066	1,066
	151	151
	351	351
	1,568	**1,568**

Fariview (south leg)

1,604	**PM**	569	1,318	88	**1,975**
1,604	**TOTAL**	**569**	**1,318**	**88**	**1,975**

Fariview

PEAK HOUR

PM 5:00 PM

Fariview (north leg)

1,537	**949**	**532**	**56**	**TOTAL**	**1,326**
1,537	949	532	56	**PM**	1,326

El Camino (east leg)

	TOTAL	PM
	201	**201**
	56	56
	106	106
	39	39
	171	171

Adams (west leg)

	TOTAL	PM
	1,328	1,328
	529	529
	83	83
	170	170
	782	**782**

Fariview (south leg)

759	**PM**	291	723	50	**1,064**
759	**Total**	**291**	**723**	**50**	**1,064**

Fariview

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

T218

DATE:	LOCATION:	Costa Mesa	PROJECT #:	SC3671
Fri, Oct 7, 22	NORTH & SOUTH:	Fairview	LOCATION #:	3
	EAST & WEST:	Sports Complex	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

☑ Add U-Turns to Left Turns

PM	NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Monitor			WESTBOUND Sports Complex			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	3	1	0.5	0.5	1	0.5	0.5	1	
5:00 PM	50	246	30	20	145	23	14	0	8	4	16	6	562
5:15 PM	44	241	24	23	142	17	6	0	3	7	9	32	548
5:30 PM	43	232	17	23	161	16	14	0	11	40	0	47	604
5:45 PM	49	199	29	14	153	18	14	0	25	18	0	14	533
6:00 PM	47	186	18	22	158	17	23	1	20	4	4	10	510
6:15 PM	42	181	13	17	165	19	32	1	18	13	6	15	522
6:30 PM	49	215	33	19	169	29	17	1	31	25	3	30	621
6:45 PM	46	179	17	33	162	31	6	1	12	12	6	11	516
VOLUMES	370	1,679	181	171	1,255	170	126	4	128	123	44	165	4,416
APPROACH %	17%	75%	8%	11%	79%	11%	49%	2%	50%	37%	13%	50%	
APP/DEPART	2,230	/	1,979	1,596	/	1,576	258	/	347	332	/	514	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	186	918	100	80	601	74	48	0	47	69	25	99	2,247
APPROACH %	15%	76%	8%	11%	80%	10%	51%	0%	49%	36%	13%	51%	
PEAK HR FACTOR		0.923			0.944			0.609			0.555		0.930
APP/DEPART	1,204	/	1,068	755	/	748	95	/	177	193	/	254	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
1	3	0	0	4
7	0	0	0	7
14	0	0	0	14
9	0	0	0	9
6	0	0	0	6
10	0	0	0	10
14	2	0	0	16
9	4	0	0	13
70	9	0	0	79

Fairview

NORTH SIDE

Monitor WEST SIDE EAST SIDE **Sports Complex**

SOUTH SIDE

Fairview

AimTD LLC

TURNING MOVEMENT COUNTS

Fairview

1,596	**170**	**1,255**	**171**	**TOTAL**	**1,979**
1,596	170	1,255	171	**PM**	1,979

Monitor

TOTAL	**514**	**126**	**4**	**128**	**258**
PM	514	126	4	128	**258**

Costa Mesa

SC3671

ALL HOURS

Sports Complex

PM	**332**	165	44	123	347
TOTAL	**332**	**165**	**44**	**123**	**347**

1,576	**PM**	370	1,679	181	**2,230**
1,576	**TOTAL**	**370**	**1,679**	**181**	**2,230**

Fairview

Fairview

755	**74**	**601**	**80**	**TOTAL**	**1,068**
755	74	601	80	**PM**	1,068

Monitor

TOTAL	**254**	**48**	**0**	**47**	**95**
PM	254	48	0	47	**95**

PEAK HOUR

PM 5:00 PM

Sports Complex

PM	**193**	99	25	69	177
TOTAL	**193**	**99**	**25**	**69**	**177**

748	**PM**	186	918	100	**1,204**
748	**Total**	**186**	**918**	**100**	**1,204**

Fairview

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Costa Mesa	PROJECT #:	SC3671
Fri, Oct 7, 22	NORTH & SOUTH:	Fairview	LOCATION #:	4
	EAST & WEST:	CMHS DWY 1	CONTROL:	NO CONTROL

NOTES:

WL Illegal

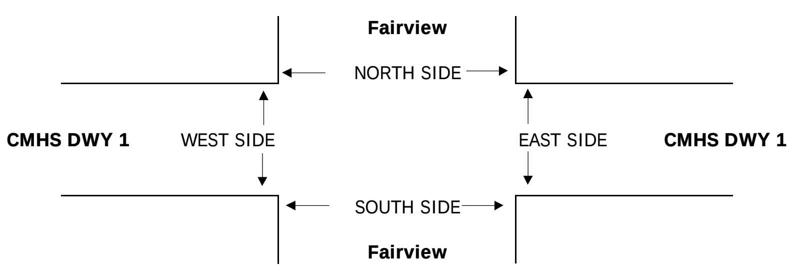
AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

	NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND CMHS DWY 1			WESTBOUND CMHS DWY 1			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	3	0	1	3	X	X	X	X	X	X	0	
5:00 PM	0	287	59	8	153	0	0	0	0	0	0	37	544
5:15 PM	0	261	44	10	150	0	0	0	0	8	0	49	522
5:30 PM	0	232	60	12	210	0	0	0	0	14	0	67	595
5:45 PM	0	244	48	16	189	0	0	0	0	7	0	32	536
6:00 PM	0	225	44	15	175	0	0	0	0	2	0	27	488
6:15 PM	0	168	38	15	196	0	0	0	0	8	0	66	491
6:30 PM	0	200	52	12	216	0	0	0	0	5	0	96	581
6:45 PM	0	203	44	11	187	0	0	0	0	7	0	31	483
PM VOLUMES	0	1,820	389	99	1,476	0	0	0	0	51	0	405	4,240
APPROACH %	0%	82%	18%	6%	94%	0%	0%	0%	0%	11%	0%	89%	
APP/DEPART	2,209	/	2,227	1,575	/	1,527	0	/	486	456	/	0	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	1,024	211	46	702	0	0	0	0	29	0	185	2,197
APPROACH %	0%	83%	17%	6%	94%	0%	0%	0%	0%	14%	0%	86%	
PEAK HR FACTOR		0.892			0.842			0.000			0.660		0.923
APP/DEPART	1,235	/	1,209	748	/	731	0	/	257	214	/	0	0

U-TURNS	NB	SB	EB	WB	TTL
LANES	0	0	0	0	
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	1	0	0	1
6:15 PM	0	1	0	0	1
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	0	0
TOTAL	0	2	0	0	2



AimTD LLC

TURNING MOVEMENT COUNTS

Costa Mesa

SC3671

ALL HOURS

Fairview (north leg)

TOTAL	**1,575**	**0**	**1,476**	**99**	**2,227**
PM	**1,575**	0	1,476	99	2,227

CMHS DWY 1 (west leg)

TOTAL	**0**	**0**	**0**	**0**	**0**
PM	0	0	0	0	**0**

CMHS DWY 1 (east leg)

PM	**456**	405	0	51	486
TOTAL	**456**	**405**	**0**	**51**	**486**

Fairview (south leg)

PM	1,527	0	1,820	389	**2,209**
TOTAL	**1,527**	**0**	**1,820**	**389**	**2,209**

Fairview (north leg)

TOTAL	**748**	**0**	**702**	**46**	**1,209**
PM	**748**	0	702	46	1,209

PEAK HOUR

PM 5:00 PM

CMHS DWY 1 (west leg)

TOTAL	**0**	**0**	**0**	**0**	**0**
PM	0	0	0	0	**0**

CMHS DWY 1 (east leg)

PM	**214**	185	0	29	257
TOTAL	**214**	**185**	**0**	**29**	**257**

Fairview (south leg)

PM	731	0	1,024	211	**1,235**
Total	**731**	**0**	**1,024**	**211**	**1,235**

Fairview

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Fri, Oct 7, 22	LOCATION: NORTH & SOUTH: EAST & WEST:	Costa Mesa Fairview Mustang	PROJECT #: LOCATION #: CONTROL:	SC3671 5 SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

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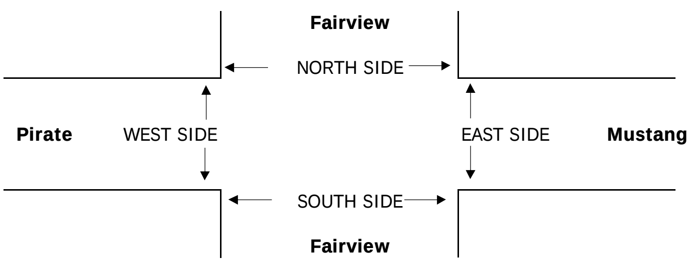
S ▼

☑ Add U-Turns to Left Turns

PM	NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Pirate			WESTBOUND Mustang				U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
LANES:	1	3	0	1	3	1	0.5	0.5	1	0.5	0.5	1		0	0	0	0	
5:00 PM	10	313	1	12	138	5	21	0	7	3	0	10	520	0	1	0	0	1
5:15 PM	11	273	1	4	146	4	15	1	3	1	0	4	463	0	1	0	0	1
5:30 PM	19	298	1	5	214	2	7	0	7	2	0	2	557	1	3	0	0	4
5:45 PM	25	271	1	9	190	2	14	0	3	0	1	4	520	1	2	0	0	3
6:00 PM	23	220	2	8	166	6	12	0	9	2	0	5	453	0	1	0	0	1
6:15 PM	40	221	2	10	184	4	11	0	6	2	0	3	483	1	0	0	0	1
6:30 PM	48	238	5	17	203	9	9	0	5	4	0	2	540	2	2	0	0	4
6:45 PM	66	227	3	16	168	4	9	0	7	6	1	13	520	0	1	0	0	1
VOLUMES	242	2,061	16	81	1,409	36	98	1	47	20	2	43	4,056	5	11	0	0	16
APPROACH %	10%	89%	1%	5%	92%	2%	67%	1%	32%	31%	3%	66%						
APP/DEPART	2,319	/	2,213	1,526	/	1,481	146	/	87	65	/	275	0					
BEGIN PEAK HR		5:00 PM																
VOLUMES	65	1,155	4	30	688	13	57	1	20	6	1	20	2,060					
APPROACH %	5%	94%	0%	4%	94%	2%	73%	1%	26%	22%	4%	74%						
PEAK HR FACTOR		0.944			0.827			0.696			0.519		0.925					
APP/DEPART	1,224	/	1,239	731	/	716	78	/	28	27	/	77	0					



AimTD LLC
TURNING MOVEMENT COUNTS

Costa Mesa
SC3671
ALL HOURS

Fairview (north leg)

TOTAL	1,526	36	1,409	81	2,213
PM	1,526	36	1,409	81	2,213

Pirate (west leg)

TOTAL	275	98	1	47	146
PM	275	98	1	47	146

Mustang (east leg)

TOTAL	65	43	2	20	87
PM	65	43	2	20	87

Fairview (south leg)

PM	1,481	242	2,061	16	2,319
TOTAL	1,481	242	2,061	16	2,319

PEAK HOUR

PM 5:00 PM

Fairview (north leg)

TOTAL	731	13	688	30	1,239
PM	731	13	688	30	1,239

Pirate (west leg)

TOTAL	77	57	1	20	78
PM	77	57	1	20	78

Mustang (east leg)

TOTAL	27	20	1	6	28
PM	27	20	1	6	28

Fairview (south leg)

PM	716	65	1,155	4	1,224
Total	716	65	1,155	4	1,224

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Costa Mesa	PROJECT #:	SC3671
Fri, Oct 7, 22	NORTH & SOUTH:	Fairview	LOCATION #:	6
	EAST & WEST:	CMHS DWY 3	CONTROL:	NO CONTROL

NOTES:

AM
PM
MD
OTHER
OTHER

N
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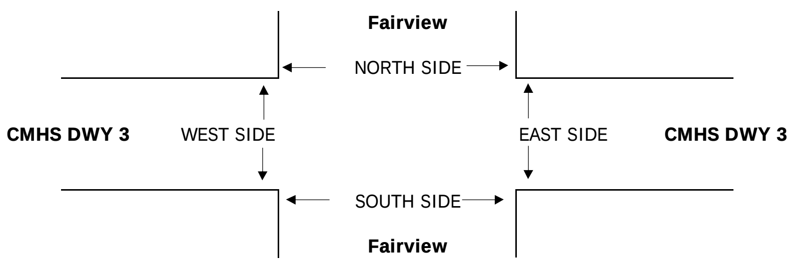
E ►
S

☑ Add U-Turns to Left Turns

	NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND CMHS DWY 3			WESTBOUND CMHS DWY 3			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	3	0	X	5	X	X	X	X	X	X	0	
PM 5:00 PM	0	308	6	0	140	0	0	0	0	0	0	4	458
5:15 PM	0	305	5	0	153	0	0	0	0	0	0	1	464
5:30 PM	0	314	3	0	234	0	0	0	0	0	0	1	552
5:45 PM	0	291	4	0	189	0	0	0	0	0	0	0	484
6:00 PM	0	247	7	0	167	0	0	0	0	0	0	1	422
6:15 PM	0	253	9	0	181	0	0	0	0	0	0	0	443
6:30 PM	0	288	10	0	226	0	0	0	0	0	0	4	528
6:45 PM	0	294	13	0	190	0	0	0	0	0	0	6	503
VOLUMES	0	2,300	57	0	1,480	0	0	0	0	0	0	17	3,854
APPROACH %	0%	98%	2%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
APP/DEPART	2,357	/	2,317	1,480	/	1,480	0	/	57	17	/	0	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	1,218	18	0	716	0	0	0	0	0	0	6	1,958
APPROACH %	0%	99%	1%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
PEAK HR FACTOR		0.975			0.765			0.000			0.375		0.887
APP/DEPART	1,236	/	1,224	716	/	716	0	/	18	6	/	0	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0



AimTD LLC

TURNING MOVEMENT COUNTS

Fairview

1,480	**0**	**1,480**	**0**	**TOTAL**	**2,317**
1,480	0	1,480	0	**PM**	2,317

CMHS DWY 3 (west)

	TOTAL	PM
	0	0
	0	0
	0	0
	0	0
	0	0

Costa Mesa

SC3671

ALL HOURS

CMHS DWY 3 (east)

	PM	TOTAL
	17	**17**
	17	**17**
	0	**0**
	0	**0**
	57	**57**

1,480	**PM**	0	2,300	57	**2,357**
1,480	**TOTAL**	**0**	**2,300**	**57**	**2,357**

Fairview

Fairview

716	**0**	**716**	**0**	**TOTAL**	**1,224**
716	0	716	0	**PM**	1,224

CMHS DWY 3 (west)

	TOTAL	PM
	0	0
	0	0
	0	0
	0	0
	0	0

PEAK HOUR

PM 5:00 PM

CMHS DWY 3 (east)

	PM	TOTAL
	6	**6**
	6	**6**
	0	**0**
	0	**0**
	18	**18**

716	**PM**	0	1,218	18	**1,236**
716	**Total**	**0**	**1,218**	**18**	**1,236**

Fairview

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Costa Mesa	PROJECT #:	SC3671
Fri, Oct 7, 22	NORTH & SOUTH:	Fairview	LOCATION #:	7
	EAST & WEST:	Arlington	CONTROL:	SIGNAL

NOTES:

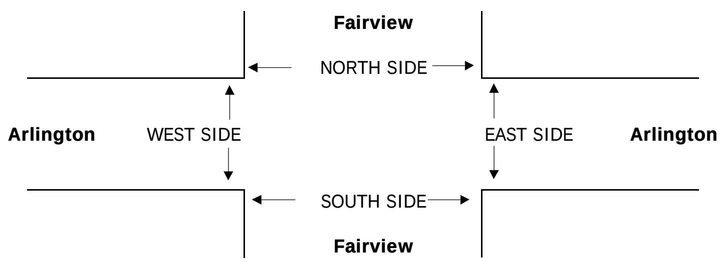
AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

☑ Add U-Turns to Left Turns

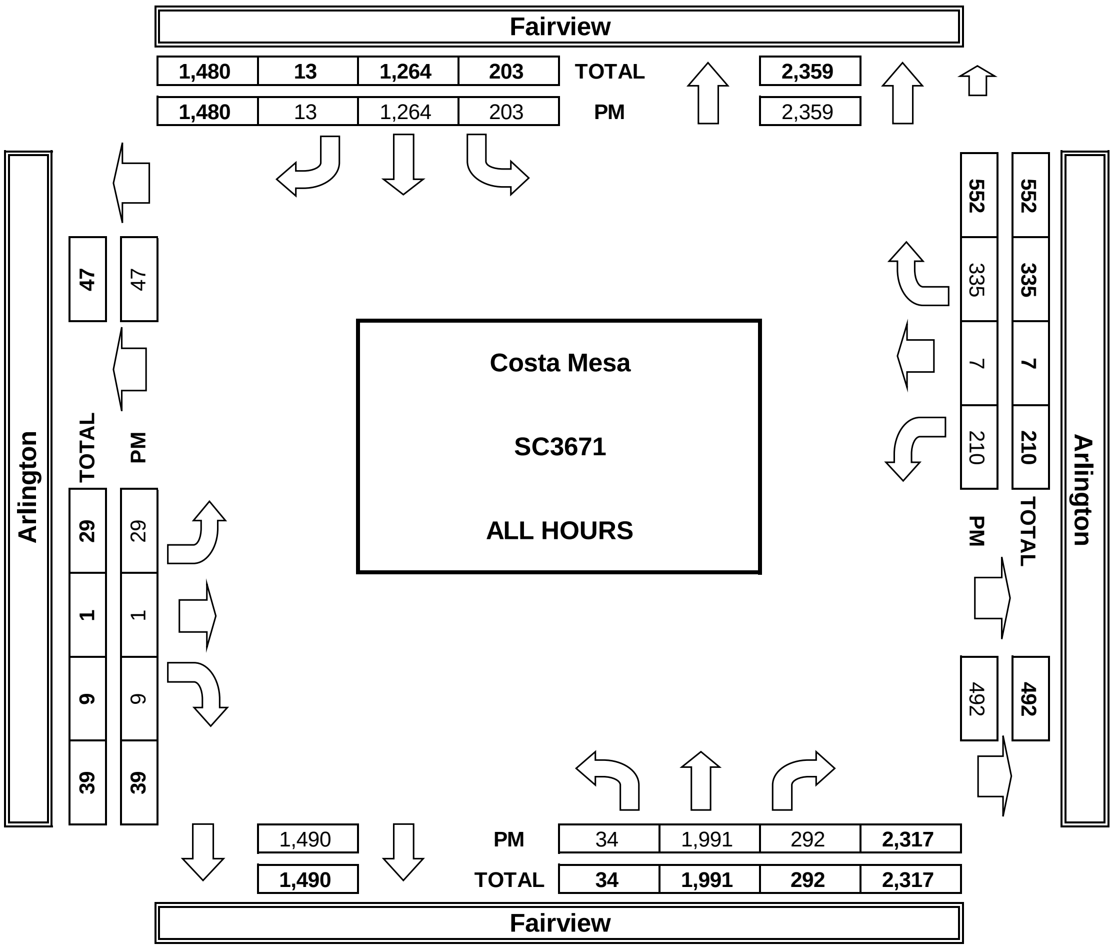
PM	NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Arlington			WESTBOUND Arlington			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	2	3	1	2	3	1	1	1	1	1	1	1	
5:00 PM	0	258	21	12	122	1	4	0	1	19	2	50	490
5:15 PM	0	262	40	19	125	1	3	0	0	26	0	43	519
5:30 PM	2	262	29	31	214	2	5	0	1	35	3	56	640
5:45 PM	1	241	35	21	167	1	2	0	3	35	0	50	556
6:00 PM	4	214	36	13	147	3	2	0	0	25	0	34	478
6:15 PM	3	239	35	36	141	0	1	1	1	18	0	20	495
6:30 PM	16	248	52	30	202	3	3	0	3	21	0	47	625
6:45 PM	8	267	44	41	146	2	9	0	0	31	2	35	585
VOLUMES	34	1,991	292	203	1,264	13	29	1	9	210	7	335	4,388
APPROACH %	1%	86%	13%	14%	85%	1%	74%	3%	23%	38%	1%	61%	
APP/DEPART	2,317	/	2,359	1,480	/	1,490	39	/	492	552	/	47	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	3	1,023	125	83	628	5	14	0	5	115	5	199	2,205
APPROACH %	0%	89%	11%	12%	88%	1%	74%	0%	26%	36%	2%	62%	
PEAK HR FACTOR		0.953			0.725			0.792			0.848		0.861
APP/DEPART	1,151	/	1,238	716	/	748	19	/	206	319	/	13	0

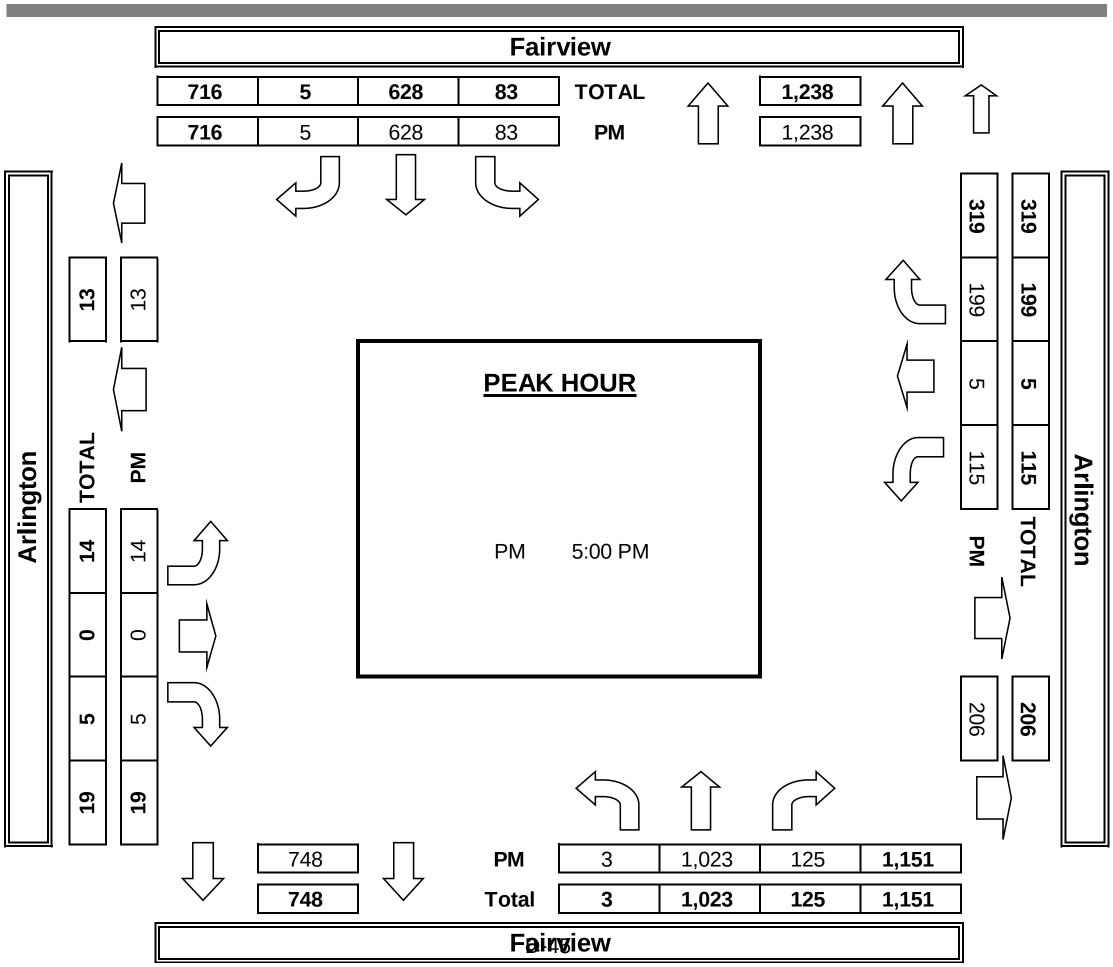
U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
1	0	0	0	1
1	1	0	0	2
5	0	0	0	5
0	1	0	0	1
7	4	0	0	11



AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Fri, Oct 7, 22	LOCATION:	Costa Mesa	PROJECT #:	SC3671
	NORTH & SOUTH:	CMMS Western DWY	LOCATION #:	8
	EAST & WEST:	Arlington	CONTROL:	NO CONTROL

NOTES:

SB Closed

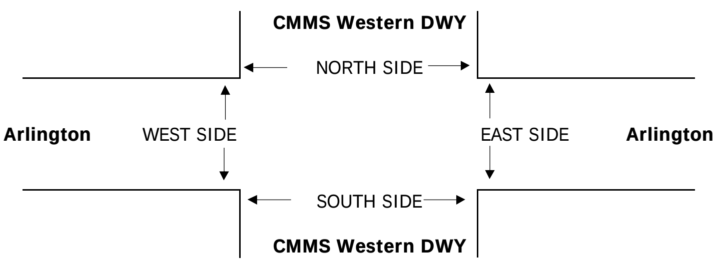
AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

☐ Add U-Turns to Left Turns

PM	NORTHBOUND CMMS Western DWY			SOUTHBOUND CMMS Western DWY			EASTBOUND Arlington			WESTBOUND Arlington			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	X	X	0	X	0	0	2	X	X	2	0	
5:00 PM	0	0	0	1	0	0	0	33	0	0	73	1	108
5:15 PM	0	0	0	1	0	1	0	58	0	0	68	0	128
5:30 PM	0	0	0	2	0	2	1	57	0	0	89	1	152
5:45 PM	0	0	0	3	0	7	1	54	0	0	78	1	144
6:00 PM	0	0	0	2	0	5	1	51	0	0	52	0	111
6:15 PM	0	0	0	0	0	6	1	68	0	0	34	0	109
6:30 PM	0	0	0	6	0	23	1	80	0	0	44	0	154
6:45 PM	0	0	0	7	0	33	2	82	0	0	36	0	160
VOLUMES	0	0	0	22	0	77	7	483	0	0	474	3	1,068
APPROACH %	0%	0%	0%	22%	0%	78%	1%	98%	0%	0%	99%	1%	
APP/DEPART	0	/	10	99	/	0	491	/	506	478	/	552	0
BEGIN PEAK HR		5:15 PM											
VOLUMES	0	0	0	8	0	15	3	220	0	0	287	2	537
APPROACH %	0%	0%	0%	35%	0%	65%	1%	98%	0%	0%	99%	1%	
PEAK HR FACTOR		0.000			0.575			0.949			0.806		0.883
APP/DEPART	0	/	5	23	/	0	224	/	229	290	/	303	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2



AimTD LLC

TURNING MOVEMENT COUNTS

Costa Mesa

SC3671

ALL HOURS

CMMS Western DWY (north)

99	**77**	**0**	**22**	**TOTAL**	**10**
99	77	0	22	**PM**	10

Arlington (west)

	TOTAL	PM
	552	552
	7	7
	483	483
	0	0
	491	**491**

Arlington (east)

	PM	TOTAL
	478	**478**
	3	**3**
	474	**474**
	0	**0**
	506	**506**

CMMS Western DWY (south)

0	**PM**	0	0	0	**0**
0	**TOTAL**	**0**	**0**	**0**	**0**

CMMS Western DWY (north)

23	**15**	**0**	**8**	**TOTAL**	**5**
23	15	0	8	**PM**	5

Arlington (west)

	TOTAL	PM
	303	303
	3	3
	220	220
	0	0
	223	**224**

PEAK HOUR

PM 5:15 PM

Arlington (east)

	PM	TOTAL
	290	**290**
	2	**2**
	287	**287**
	0	**0**
	229	**229**

CMMS Western DWY (south)

0	**PM**	0	0	0	**0**
0	**Total**	**0**	**0**	**0**	**0**

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Costa Mesa	PROJECT #:	SC3671
Fri, Oct 7, 22	NORTH & SOUTH:	CMMS Eastern DWY	LOCATION #:	9
	EAST & WEST:	Arlington	CONTROL:	NO CONTROL

NOTES:

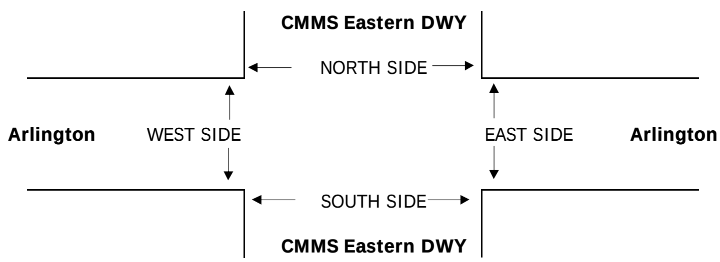
AM PM MD OTHER OTHER

▲ N ◄ W E ► S ▼

☑ Add U-Turns to Left Turns

PM	NORTHBOUND CMMS Eastern DWY			SOUTHBOUND CMMS Eastern DWY			EASTBOUND Arlington			WESTBOUND Arlington			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	X	X	0	X	0	0	1	X	X	1	0	
5:00 PM	0	0	0	1	0	0	2	27	0	0	73	2	105
5:15 PM	0	0	0	1	0	1	5	48	0	0	59	1	115
5:30 PM	0	0	0	0	0	2	13	42	0	0	93	2	152
5:45 PM	0	0	0	0	0	1	18	39	0	0	74	8	140
6:00 PM	0	0	0	2	0	0	14	36	0	0	49	4	105
6:15 PM	0	0	0	0	0	2	30	37	0	0	29	16	114
6:30 PM	0	0	0	0	0	1	53	38	0	0	45	14	151
6:45 PM	0	0	0	2	0	3	56	31	0	0	35	17	144
VOLUMES	0	0	0	6	0	10	191	298	0	0	457	64	1,026
APPROACH %	0%	0%	0%	38%	0%	63%	39%	61%	0%	0%	88%	12%	
APP/DEPART	0	/	254	16	/	0	489	/	304	521	/	468	0
BEGIN PEAK HR		6:00 PM											
VOLUMES	0	0	0	4	0	6	153	142	0	0	158	51	514
APPROACH %	0%	0%	0%	40%	0%	60%	52%	48%	0%	0%	76%	24%	
PEAK HR FACTOR		0.000			0.500			0.810			0.886		0.851
APP/DEPART	0	/	203	10	/	0	295	/	146	209	/	165	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1



AimTD LLC

TURNING MOVEMENT COUNTS

Costa Mesa — SC3671 — ALL HOURS

CMMS Eastern DWY (north leg)

16	**10**	**0**	**6**	**TOTAL**	**254**
16	10	0	6	**PM**	254

Arlington (west leg)

TOTAL	**468**	**191**	**298**	**0**	**489**
PM	468	191	298	0	489

Arlington (east leg)

TOTAL	**521**	**64**	**457**	**0**	**304**
PM	521	64	457	0	304

CMMS Eastern DWY (south leg)

0	**PM**	0	0	0	**0**
0	**TOTAL**	**0**	**0**	**0**	**0**

PEAK HOUR

PM 6:00 PM

CMMS Eastern DWY (north leg)

10	**6**	**0**	**4**	**TOTAL**	**203**
10	6	0	4	**PM**	203

Arlington (west leg)

TOTAL	**165**	**153**	**142**	**0**	**295**
PM	165	153	142	0	295

Arlington (east leg)

TOTAL	**209**	**51**	**158**	**0**	**146**
PM	209	51	158	0	146

CMMS Eastern DWY (south leg)

0	**PM**	0	0	0	**0**
0	**Total**	**0**	**0**	**0**	**0**

T218

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Costa Mesa	PROJECT #:	SC3671
Fri, Oct 7, 22	NORTH & SOUTH:	Fairview	LOCATION #:	10
	EAST & WEST:	Merrimac	CONTROL:	SIGNAL

NOTES:

EB Closed

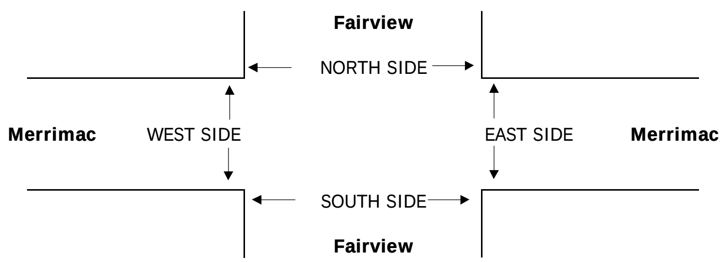
AM
PM
MD
OTHER
OTHER

▲ N
◄ W
E ►
S ▼

Add U-Turns to Left Turns

	NORTHBOUND Fairview			SOUTHBOUND Fairview			EASTBOUND Merrimac			WESTBOUND Merrimac			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	3	X	X	3	1	1.5	X	1	X	X	X	
5:00 PM	21	286	0	0	130	25	10	0	14	0	0	0	486
5:15 PM	35	268	0	0	140	17	17	0	15	0	0	0	492
5:30 PM	21	283	0	0	205	24	10	0	7	0	0	0	550
5:45 PM	30	270	0	0	181	25	13	0	13	0	0	0	532
6:00 PM	19	246	0	0	165	20	9	0	12	0	0	0	471
6:15 PM	16	276	0	0	162	13	6	0	12	0	0	0	485
6:30 PM	12	295	0	0	202	15	24	0	13	0	0	0	561
6:45 PM	12	295	0	0	159	9	14	0	6	0	0	0	495
PM VOLUMES	166	2,219	0	0	1,344	148	103	0	92	0	0	0	4,091
APPROACH %	7%	92%	0%	0%	90%	10%	53%	0%	47%	0%	0%	0%	
APP/DEPART	2,401	/	2,325	1,495	/	1,452	195	/	0	0	/	314	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	107	1,107	0	0	656	91	50	0	49	0	0	0	2,073
APPROACH %	9%	90%	0%	0%	88%	12%	51%	0%	49%	0%	0%	0%	
PEAK HR FACTOR		0.975			0.814			0.773			0.000		0.935
APP/DEPART	1,225	/	1,159	749	/	716	99	/	0	0	/	198	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
7	1	0	0	8
0	0	0	0	0
3	1	0	0	4
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
2	1	0	0	3
3	0	0	0	3
16	3	0	0	19



AimTD LLC

TURNING MOVEMENT COUNTS

Costa Mesa

SC3671

ALL HOURS

Fairview (north leg)

TOTAL	**1,495**	**148**	**1,344**	**0**	**2,325**
PM	**1,495**	148	1,344	0	2,325

Merrimac (west leg)

	TOTAL	PM
	314	314
	103	103
	0	0
	92	92
	195	195

Merrimac (east leg)

	PM	TOTAL
	0	**0**
	0	**0**
	0	**0**
	0	**0**
	0	**0**

Fairview (south leg)

PM	1,452	166	2,219	0	**2,401**
TOTAL	**1,452**	**166**	**2,219**	**0**	**2,401**

PEAK HOUR

PM 5:00 PM

Fairview (north leg)

TOTAL	**749**	**91**	**656**	**0**	**1,159**
PM	**749**	91	656	0	1,159

Merrimac (west leg)

	TOTAL	PM
	198	198
	50	50
	0	0
	49	49
	99	99

Merrimac (east leg)

	PM	TOTAL
	0	**0**
	0	**0**
	0	**0**
	0	**0**
	0	**0**

Fairview (south leg)

PM	716	107	1,107	0	**1,225**
Total	**716**	**107**	**1,107**	**0**	**1,225**

INTERSECTION ANALYSIS WORKSHEETS

YEAR 2022 – NO PROJECT
PM PEAK HOUR

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Baker St
NORTH/SOUTH: Fairview Rd
EAST/WEST: Baker St

Move-ment	Existing Year (2022) No Project								
	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	2		3,400	0	234	0.00	*	0.07	
NBT	3		4,800	0	802	0.00		0.17	*
NBR	1	0	1,600	0	347	0.00		0.00	
SBL	2		3,400	0	184	0.00		0.05	*
SBT	4		6,400	0	892	0.00	*	0.14	
SBR	1	0	1,600	0	295	0.00		0.00	
EBL	2		3,400	0	257	0.00	*	0.08	
EBT	2		3,200	0	408	0.00		0.13	*
EBR	1	0	1,600	0	117	0.00		0.00	
WBL	2		3,400	0	523	0.00		0.15	*
WBT	3		4,800	0	664	0.00	*	0.14	
WBR	1	0	1,600	0	157	0.00		0.00	
N/S Critical Movements						0.00		0.22	
E/W Critical Movements						0.00		0.28	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.55	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Adams Ave
NORTH/SOUTH: Fairview Rd
EAST/WEST: Adams Ave

	Existing Year (2022) No Project								
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	2		3,400	0	291	0.00	*	0.09	
NBT	3		4,000	0	723	0.00		0.18	*
NBR	1	0	800	0	50	0.00		0.00	
SBL	1		1,600	0	56	0.00		0.04	*
SBT	3		4,800	0	532	0.00	*	0.11	
SBR	1	0	1,600	0	949	0.00		0.00	
EBL	2		3,400	0	529	0.00	*	0.16	*
EBT	1		1,600	0	83	0.00		0.05	
EBR	1	0	1,600	0	170	0.00		0.00	
WBL	1		800	0	39	0.00		0.05	
WBT	2		2,400	0	106	0.00	*	0.04	*
WBR	1	0	1,600	0	56	0.00		0.00	
N/S Critical Movements						0.00		0.22	
E/W Critical Movements						0.00		0.20	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.47	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Monitor Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Monitor Way

Movement	Existing Year (2022) No Project							
	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	1		1,600	0	186	0.00	*	0.12	
NBT	3		4,000	0	918	0.00		0.23	*
NBR	1	0	800	0	100	0.00		0.00	
SBL	1		1,600	0	80	0.00		0.05	*
SBT	3		4,800	0	601	0.00	*	0.13	
SBR	1	0	1,600	0	74	0.00		0.00	
EBL	1		800	0	48	0.00	*	0.06	*
EBT	1		800	0	0	0.00		0.00	
EBR	1	0	1,600	0	47	0.00		0.00	
WBL	1		800	0	69	0.00		0.09	
WBT	1		800	0	25	0.00	*	0.03	*
WBR	1	0	1,600	0	99	0.00		0.00	
N/S Critical Movements						0.00		0.28	
E/W Critical Movements						0.00		0.09	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.42	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	29	185	1024	211	46	702
Future Volume (Veh/h)	29	185	1024	211	46	702
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	201	1113	229	50	763
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			685			561
pX, platoon unblocked	0.93	0.92			0.92	
vC, conflicting volume	1582	486			1342	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1190	126			1059	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	76			92	
cM capacity (veh/h)	154	827			600	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	32	201	445	445	452	50	254	254	254
Volume Left	32	0	0	0	0	50	0	0	0
Volume Right	0	201	0	0	229	0	0	0	0
cSH	154	827	1700	1700	1700	600	1700	1700	1700
Volume to Capacity	0.21	0.24	0.26	0.26	0.27	0.08	0.15	0.15	0.15
Queue Length 95th (ft)	19	24	0	0	0	7	0	0	0
Control Delay (s)	34.5	10.7	0.0	0.0	0.0	11.5	0.0	0.0	0.0
Lane LOS	D	B				B			
Approach Delay (s)	14.0		0.0			0.7			
Approach LOS	B								

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Mustang Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Mustang Way

	Existing Year (2022) No Project						
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	1		1,600	0	65	0.00 *	0.04
NBT	3		4,000	0	1,155	0.00	0.29 *
NBR	1	0	800	0	4	0.00	0.00
SBL	1		1,600	0	30	0.00	0.02 *
SBT	3		4,800	0	688	0.00 *	0.14
SBR	1	0	1,600	0	13	0.00	0.00
EBL	1		800	0	57	0.00 *	0.07 *
EBT	1		800	0	1	0.00	0.00
EBR	1	0	1,600	0	20	0.00	0.00
WBL	1		800	0	6	0.00	0.01
WBT	1		800	0	1	0.00 *	0.00 *
WBR	1	0	1,600	0	20	0.00	0.00
N/S Critical Movements						0.00	0.31
E/W Critical Movements						0.00	0.07
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.43
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	1218	18	0	716
Future Volume (Veh/h)	0	0	1218	18	0	716
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	1324	20	0	778
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			251			387
pX, platoon unblocked	0.91	0.89			0.89	
vC, conflicting volume	1593	451			1344	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1017	0			967	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	214	969			633	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	530	530	285	259	259	259
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	20	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.31	0.31	0.17	0.15	0.15	0.15
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	0.0	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	27.3%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Arlington Dr
NORTH/SOUTH: Fairview Rd
EAST/WEST: Arlington Dr

Move-ment	Existing Year (2022) No Project								
	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	2		3,400	0	3	0.00	*	0.00	
NBT	3		4,800	0	1,023	0.00		0.21	*
NBR	1	0	1,600	0	125	0.00		0.00	
SBL	2		3,400	0	83	0.00		0.02	*
SBT	3		4,800	0	628	0.00	*	0.13	
SBR	1	0	1,600	0	5	0.00		0.00	
EBL	1		1,600	0	14	0.00	*	0.01	
EBT	1		1,600	0	0	0.00		0.00	*
EBR	1	0	1,600	0	5	0.00		0.00	
WBL	1		1,600	0	115	0.00		0.07	*
WBT	1		1,600	0	5	0.00	*	0.00	
WBR	1	0	1,600	0	199	0.00		0.00	
N/S Critical Movements						0.00		0.23	
E/W Critical Movements						0.00		0.07	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.35	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	220	0	0	287	2	0	0	0	8	0	15
Future Volume (Veh/h)	3	220	0	0	287	2	0	0	0	8	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	239	0	0	312	2	0	0	0	9	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		309										
pX, platoon unblocked												
vC, conflicting volume	314			239			417	559	120	438	558	157
vC1, stage 1 conf vol							245	245		313	313	
vC2, stage 2 conf vol							172	314		126	245	
vCu, unblocked vol	314			239			417	559	120	438	558	157
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	99	100	98
cM capacity (veh/h)	1243			1325			661	579	910	634	581	861

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	122	120	208	106	0	25
Volume Left	3	0	0	0	0	9
Volume Right	0	0	0	2	0	16
cSH	1243	1700	1700	1700	1700	763
Volume to Capacity	0.00	0.07	0.12	0.06	0.00	0.03
Queue Length 95th (ft)	0	0	0	0	0	3
Control Delay (s)	0.2	0.0	0.0	0.0	0.0	9.9
Lane LOS	A				A	A
Approach Delay (s)	0.1		0.0		0.0	9.9
Approach LOS					A	A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	153	142	158	51	4	6
Future Volume (Veh/h)	153	142	158	51	4	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	166	154	172	55	4	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)		738				
pX, platoon unblocked						
vC, conflicting volume	227				686	200
vC1, stage 1 conf vol					200	
vC2, stage 2 conf vol					486	
vCu, unblocked vol	227				686	200
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				99	99
cM capacity (veh/h)	1341				512	841

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	320	227	11
Volume Left	166	0	4
Volume Right	0	55	7
cSH	1341	1700	682
Volume to Capacity	0.12	0.13	0.02
Queue Length 95th (ft)	11	0	1
Control Delay (s)	4.7	0.0	10.4
Lane LOS	A		B
Approach Delay (s)	4.7	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Merrimac Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Merrimac Way

	Existing Year (2022) No Project								
Move- ment	Lane		Capacity	Volume AM	PM	V/C Ratio AM		PM	
NBL	2		3,400	0	107	0.00	*	0.03	
NBT	3		4,800	0	1,107	0.00		0.23	*
NBR	1	0	1,600	0	0	0.00		0.00	
SBL	2		3,400	0	0	0.00		0.00	*
SBT	3		4,800	0	656	0.00	*	0.14	
SBR	1	0	1,600	0	91	0.00		0.00	
EBL	2		2,400	0	50	0.00	*	0.02	*
EBT	1		800	0	0	0.00		0.00	
EBR	1	0	1,600	0	49	0.00		0.00	
WBL	1		1,600	0	0	0.00		0.00	
WBT	1		800	0	0	0.00	*	0.00	*
WBR	1	0	800	0	0	0.00		0.00	
N/S Critical Movements						0.00		0.23	
E/W Critical Movements						0.00		0.02	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.30	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

INTERSECTION ANALYSIS WORKSHEETS

YEAR 2026 – NO PROJECT
PM PEAK HOUR

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. Fairview Rd & Baker St
NORTH/SOUTH: Fairview Rd
EAST/WEST: Baker St

Move-ment	Opening Year (2026) No Project								
	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	2		3,400	0	263	0.00	*	0.08	
NBT	3		4,800	0	902	0.00		0.19	*
NBR	1	0	1,600	0	390	0.00		0.00	
SBL	2		3,400	0	207	0.00		0.06	*
SBT	4		6,400	0	1,003	0.00	*	0.16	
SBR	1	0	1,600	0	332	0.00		0.00	
EBL	2		3,400	0	289	0.00	*	0.09	
EBT	2		3,200	0	459	0.00		0.14	*
EBR	1	0	1,600	0	132	0.00		0.00	
WBL	2		3,400	0	588	0.00		0.17	*
WBT	3		4,800	0	747	0.00	*	0.16	
WBR	1	0	1,600	0	177	0.00		0.00	
N/S Critical Movements						0.00		0.25	
E/W Critical Movements						0.00		0.31	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.61	
Level of Service (LOS)						A		B	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Adams Ave
NORTH/SOUTH: Fairview Rd
EAST/WEST: Adams Ave

	Opening Year (2026) No Project						
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2		3,400	0	327	0.00 *	0.10
NBT	3		4,000	0	813	0.00	0.20 *
NBR	1	0	800	0	56	0.00	0.00
SBL	1		1,600	0	63	0.00	0.04 *
SBT	3		4,800	0	598	0.00 *	0.12
SBR	1	0	1,600	0	1,067	0.00	0.00
EBL	2		3,400	0	595	0.00 *	0.18 *
EBT	1		1,600	0	93	0.00	0.06
EBR	1	0	1,600	0	191	0.00	0.00
WBL	1		800	0	44	0.00	0.06
WBT	2		2,400	0	119	0.00 *	0.05 *
WBR	1	0	1,600	0	63	0.00	0.00
N/S Critical Movements						0.00	0.24
E/W Critical Movements						0.00	0.23
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.52
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Monitor Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Monitor Way

	Opening Year (2026) No Project						
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	1		1,600	0	209	0.00 *	0.13
NBT	3		4,000	0	1,033	0.00	0.26 *
NBR	1	0	800	0	112	0.00	0.00
SBL	1		1,600	0	90	0.00	0.06 *
SBT	3		4,800	0	676	0.00 *	0.14
SBR	1	0	1,600	0	83	0.00	0.00
EBL	1		800	0	54	0.00 *	0.07 *
EBT	1		800	0	0	0.00	0.00
EBR	1	0	1,600	0	53	0.00	0.00
WBL	1		800	0	78	0.00	0.10
WBT	1		800	0	28	0.00 *	0.04 *
WBR	1	0	1,600	0	111	0.00	0.00
N/S Critical Movements						0.00	0.32
E/W Critical Movements						0.00	0.11
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.48
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	33	208	1152	237	52	790
Future Volume (Veh/h)	33	208	1152	237	52	790
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	226	1252	258	57	859
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			685			561
pX, platoon unblocked	0.89	0.87			0.87	
vC, conflicting volume	1781	546			1510	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1101	0			1054	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	76			90	
cM capacity (veh/h)	165	941			569	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	36	226	501	501	508	57	286	286	286
Volume Left	36	0	0	0	0	57	0	0	0
Volume Right	0	226	0	0	258	0	0	0	0
cSH	165	941	1700	1700	1700	569	1700	1700	1700
Volume to Capacity	0.22	0.24	0.29	0.29	0.30	0.10	0.17	0.17	0.17
Queue Length 95th (ft)	20	23	0	0	0	8	0	0	0
Control Delay (s)	32.8	10.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0
Lane LOS	D	B				B			
Approach Delay (s)	13.2		0.0			0.7			
Approach LOS	B								

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Mustang Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Mustang Way

Move-ment	Opening Year (2026) No Project						
	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	1		1,600	0	73	0.00 *	0.05
NBT	3		4,000	0	1,299	0.00	0.32 *
NBR	1	0	800	0	4	0.00	0.00
SBL	1		1,600	0	34	0.00	0.02 *
SBT	3		4,800	0	774	0.00 *	0.16
SBR	1	0	1,600	0	15	0.00	0.00
EBL	1		800	0	64	0.00 *	0.08 *
EBT	1		800	0	1	0.00	0.00
EBR	1	0	1,600	0	22	0.00	0.00
WBL	1		800	0	7	0.00	0.01
WBT	1		800	0	1	0.00 *	0.00 *
WBR	1	0	1,600	0	22	0.00	0.00
N/S Critical Movements						0.00	0.34
E/W Critical Movements						0.00	0.08
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.47
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	7	1370	20	0	805
Future Volume (Veh/h)	0	7	1370	20	0	805
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	8	1489	22	0	875
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			251			387
pX, platoon unblocked	0.89	0.86			0.86	
vC, conflicting volume	1792	507			1511	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	996	0			1012	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	214	929			583	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	8	596	596	320	292	292	292
Volume Left	0	0	0	0	0	0	0
Volume Right	8	0	0	22	0	0	0
cSH	929	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.35	0.35	0.19	0.17	0.17	0.17
Queue Length 95th (ft)	1	0	0	0	0	0	0
Control Delay (s)	8.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	8.9	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Arlington Dr
NORTH/SOUTH: Fairview Rd
EAST/WEST: Arlington Dr

Move-ment	Opening Year (2026) No Project						
	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2		3,400	0	3	0.00 *	0.00
NBT	3		4,800	0	1,151	0.00	0.24 *
NBR	1	0	1,600	0	141	0.00	0.00
SBL	2		3,400	0	93	0.00	0.03 *
SBT	3		4,800	0	706	0.00 *	0.15
SBR	1	0	1,600	0	6	0.00	0.00
EBL	1		1,600	0	16	0.00 *	0.01
EBT	1		1,600	0	0	0.00	0.00 *
EBR	1	0	1,600	0	6	0.00	0.00
WBL	1		1,600	0	129	0.00	0.08 *
WBT	1		1,600	0	6	0.00 *	0.00
WBR	1	0	1,600	0	224	0.00	0.00
N/S Critical Movements						0.00	0.27
E/W Critical Movements						0.00	0.08
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.40
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	247	0	0	323	2	0	0	0	9	0	17
Future Volume (Veh/h)	3	247	0	0	323	2	0	0	0	9	0	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	268	0	0	351	2	0	0	0	10	0	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		309										
pX, platoon unblocked												
vC, conflicting volume	353			268			468	627	134	492	626	176
vC1, stage 1 conf vol							274	274		352	352	
vC2, stage 2 conf vol							194	353		140	274	
vCu, unblocked vol	353			268			468	627	134	492	626	176
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	100	98
cM capacity (veh/h)	1202			1293			630	552	890	600	554	836

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	137	134	176	178	0	28
Volume Left	3	0	0	0	0	10
Volume Right	0	0	0	2	0	18
cSH	1202	1700	1293	1700	1700	733
Volume to Capacity	0.00	0.08	0.00	0.10	0.00	0.04
Queue Length 95th (ft)	0	0	0	0	0	3
Control Delay (s)	0.2	0.0	0.0	0.0	0.0	10.1
Lane LOS	A				A	B
Approach Delay (s)	0.1		0.0		0.0	10.1
Approach LOS					A	B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	172	160	178	57	4	7
Future Volume (Veh/h)	172	160	178	57	4	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	187	174	193	62	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)		738				
pX, platoon unblocked						
vC, conflicting volume	255				772	224
vC1, stage 1 conf vol					224	
vC2, stage 2 conf vol					548	
vCu, unblocked vol	255				772	224
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	86				99	99
cM capacity (veh/h)	1310				469	815

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	361	255	12
Volume Left	187	0	4
Volume Right	0	62	8
cSH	1310	1700	654
Volume to Capacity	0.14	0.15	0.02
Queue Length 95th (ft)	12	0	1
Control Delay (s)	4.9	0.0	10.6
Lane LOS	A		B
Approach Delay (s)	4.9	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Merrimac Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Merrimac Way

	Opening Year (2026) No Project						
Move- ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2		3,400	0	120	0.00 *	0.04
NBT	3		4,800	0	1,245	0.00	0.26 *
NBR	1	0	1,600	0	0	0.00	0.00
SBL	2		3,400	0	0	0.00	0.00 *
SBT	3		4,800	0	738	0.00 *	0.15
SBR	1	0	1,600	0	102	0.00	0.00
EBL	2		2,400	0	56	0.00 *	0.02 *
EBT	1		800	0	0	0.00	0.00
EBR	1	0	1,600	0	55	0.00	0.00
WBL	1		1,600	0	0	0.00	0.00
WBT	1		800	0	0	0.00 *	0.00 *
WBR	1	0	800	0	0	0.00	0.00
N/S Critical Movements						0.00	0.26
E/W Critical Movements						0.00	0.02
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.33
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION ANALYSIS WORKSHEETS

YEAR 2022 – WITH PROJECT
PM PEAK HOUR

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Baker St
NORTH/SOUTH: Fairview Rd
EAST/WEST: Baker St

Move- ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
	Existing Year (2022) With Project								
NBL	2		3,400	0	235	0.00	*	0.07	*
NBT	3		4,800	0	805	0.00		0.17	
NBR	1	0	1,600	0	350	0.00		0.00	
SBL	2		3,400	0	184	0.00		0.05	
SBT	4		6,400	0	944	0.00	*	0.15	*
SBR	1	0	1,600	0	295	0.00		0.00	
EBL	2		3,400	0	257	0.00	*	0.08	
EBT	2		3,200	0	408	0.00		0.13	*
EBR	1	0	1,600	0	125	0.00		0.00	
WBL	2		3,400	0	543	0.00		0.16	*
WBT	3		4,800	0	664	0.00	*	0.14	
WBR	1	0	1,600	0	157	0.00		0.00	
N/S Critical Movements						0.00		0.22	
E/W Critical Movements						0.00		0.29	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.56	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Adams Ave
NORTH/SOUTH: Fairview Rd
EAST/WEST: Adams Ave

	Existing Year (2022) With Project						
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2		3,400	0	291	0.00 *	0.09 *
NBT	3		4,000	0	729	0.00	0.18
NBR	1	0	800	0	51	0.00	0.00
SBL	1		1,600	0	56	0.00	0.04
SBT	3		4,800	0	612	0.00 *	0.13 *
SBR	1	0	1,600	0	949	0.00	0.00
EBL	2		3,400	0	529	0.00 *	0.16 *
EBT	1		1,600	0	83	0.00	0.05
EBR	1	0	1,600	0	178	0.00	0.00
WBL	1		800	0	49	0.00	0.06
WBT	2		2,400	0	106	0.00 *	0.04 *
WBR	1	0	1,600	0	56	0.00	0.00
N/S Critical Movements						0.00	0.22
E/W Critical Movements						0.00	0.20
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.47
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Monitor Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Monitor Way

	Existing Year (2022) With Project								
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	1		1,600	0	186	0.00	*	0.12	
NBT	3		4,000	0	925	0.00		0.23	*
NBR	1	0	800	0	100	0.00		0.00	
SBL	1		1,600	0	80	0.00		0.05	*
SBT	3		4,800	0	700	0.00	*	0.15	
SBR	1	0	1,600	0	74	0.00		0.00	
EBL	1		800	0	48	0.00	*	0.06	*
EBT	1		800	0	0	0.00		0.00	
EBR	1	0	1,600	0	47	0.00		0.00	
WBL	1		800	0	69	0.00		0.09	
WBT	1		800	0	25	0.00	*	0.03	*
WBR	1	0	1,600	0	99	0.00		0.00	
N/S Critical Movements						0.00		0.28	
E/W Critical Movements						0.00		0.09	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.42	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	29	185	1031	217	46	801
Future Volume (Veh/h)	29	185	1031	217	46	801
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	201	1121	236	50	871
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			685			561
pX, platoon unblocked	0.92	0.89			0.89	
vC, conflicting volume	1629	492			1357	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1008	12			981	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	79			92	
cM capacity (veh/h)	200	952			625	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	32	201	448	448	460	50	290	290	290
Volume Left	32	0	0	0	0	50	0	0	0
Volume Right	0	201	0	0	236	0	0	0	0
cSH	200	952	1700	1700	1700	625	1700	1700	1700
Volume to Capacity	0.16	0.21	0.26	0.26	0.27	0.08	0.17	0.17	0.17
Queue Length 95th (ft)	14	20	0	0	0	6	0	0	0
Control Delay (s)	26.4	9.8	0.0	0.0	0.0	11.3	0.0	0.0	0.0
Lane LOS	D	A				B			
Approach Delay (s)	12.1		0.0			0.6			
Approach LOS	B								

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Mustang Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Mustang Way

	Existing Year (2022) With Project								
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	1		1,600	0	65	0.00	*	0.04	
NBT	3		4,000	0	1,165	0.00		0.29	*
NBR	1	0	800	0	24	0.00		0.00	
SBL	1		1,600	0	80	0.00		0.05	*
SBT	3		4,800	0	736	0.00	*	0.15	
SBR	1	0	1,600	0	13	0.00		0.00	
EBL	1		800	0	57	0.00	*	0.07	*
EBT	1		800	0	1	0.00		0.00	
EBR	1	0	1,600	0	20	0.00		0.00	
WBL	1		800	0	8	0.00		0.01	
WBT	1		800	0	1	0.00	*	0.00	*
WBR	1	0	1,600	0	23	0.00		0.00	
N/S Critical Movements						0.00		0.34	
E/W Critical Movements						0.00		0.07	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.46	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	6	1248	58	0	766
Future Volume (Veh/h)	0	6	1248	58	0	766
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	7	1357	63	0	833
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			251			387
pX, platoon unblocked	0.91	0.88			0.88	
vC, conflicting volume	1666	484			1420	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	0			1006	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	221	956			603	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	7	543	543	334	278	278	278
Volume Left	0	0	0	0	0	0	0
Volume Right	7	0	0	63	0	0	0
cSH	956	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.32	0.32	0.20	0.16	0.16	0.16
Queue Length 95th (ft)	1	0	0	0	0	0	0
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	8.8	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Arlington Dr
NORTH/SOUTH: Fairview Rd
EAST/WEST: Arlington Dr

	Existing Year (2022) With Project						
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2		3,400	0	3	0.00 *	0.00
NBT	3		4,800	0	1,081	0.00	0.23 *
NBR	1	0	1,600	0	137	0.00	0.00
SBL	2		3,400	0	131	0.00	0.04 *
SBT	3		4,800	0	630	0.00 *	0.13
SBR	1	0	1,600	0	5	0.00	0.00
EBL	1		1,600	0	14	0.00 *	0.01
EBT	1		1,600	0	0	0.00	0.00 *
EBR	1	0	1,600	0	5	0.00	0.00
WBL	1		1,600	0	115	0.00	0.07 *
WBT	1		1,600	0	5	0.00 *	0.00
WBR	1	0	1,600	0	211	0.00	0.00
N/S Critical Movements						0.00	0.27
E/W Critical Movements						0.00	0.07
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.39
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	274	0	0	298	4	0	0	0	9	0	16
Future Volume (Veh/h)	9	274	0	0	298	4	0	0	0	9	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	298	0	0	324	4	0	0	0	10	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		309										
pX, platoon unblocked												
vC, conflicting volume	328			298			497	646	149	495	644	164
vC1, stage 1 conf vol							318	318		326	326	
vC2, stage 2 conf vol							179	328		169	318	
vCu, unblocked vol	328			298			497	646	149	495	644	164
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	98	100	98
cM capacity (veh/h)	1228			1260			603	543	871	610	547	852

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	159	149	162	166	0	27
Volume Left	10	0	0	0	0	10
Volume Right	0	0	0	4	0	17
cSH	1228	1700	1260	1700	1700	742
Volume to Capacity	0.01	0.09	0.00	0.10	0.00	0.04
Queue Length 95th (ft)	1	0	0	0	0	3
Control Delay (s)	0.6	0.0	0.0	0.0	0.0	10.0
Lane LOS	A				A	B
Approach Delay (s)	0.3		0.0		0.0	10.0
Approach LOS					A	B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	24.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	207	143	168	75	4	9
Future Volume (Veh/h)	207	143	168	75	4	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	225	155	183	82	4	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)		738				
pX, platoon unblocked						
vC, conflicting volume	265				829	224
vC1, stage 1 conf vol					224	
vC2, stage 2 conf vol					605	
vCu, unblocked vol	265				829	224
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	83				99	99
cM capacity (veh/h)	1299				428	815

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	380	265	14
Volume Left	225	0	4
Volume Right	0	82	10
cSH	1299	1700	648
Volume to Capacity	0.17	0.16	0.02
Queue Length 95th (ft)	16	0	2
Control Delay (s)	5.6	0.0	10.7
Lane LOS	A		B
Approach Delay (s)	5.6	0.0	10.7
Approach LOS			B

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Merrimac Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Merrimac Way

	Existing Year (2022) With Project						
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2		3,400	0	107	0.00 *	0.03
NBT	3		4,800	0	1,167	0.00	0.24 *
NBR	1	0	1,600	0	0	0.00	0.00
SBL	2		3,400	0	0	0.00	0.00 *
SBT	3		4,800	0	658	0.00 *	0.14
SBR	1	0	1,600	0	91	0.00	0.00
EBL	2		2,400	0	60	0.00 *	0.03 *
EBT	1		800	0	0	0.00	0.00
EBR	1	0	1,600	0	49	0.00	0.00
WBL	1		1,600	0	0	0.00	0.00
WBT	1		800	0	0	0.00 *	0.00 *
WBR	1	0	800	0	0	0.00	0.00
N/S Critical Movements						0.00	0.24
E/W Critical Movements						0.00	0.03
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.32
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION ANALYSIS WORKSHEETS

YEAR 2026 – WITH PROJECT
PM PEAK HOUR

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Baker St
NORTH/SOUTH: Fairview Rd
EAST/WEST: Baker St

Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
	Opening Year (2026) With Project								
NBL	2		3,400	0	264	0.00	*	0.08	
NBT	3		4,800	0	905	0.00		0.19	*
NBR	1	0	1,600	0	393	0.00		0.00	
SBL	2		3,400	0	207	0.00		0.06	*
SBT	4		6,400	0	1,055	0.00	*	0.16	
SBR	1	0	1,600	0	332	0.00		0.00	
EBL	2		3,400	0	289	0.00	*	0.09	
EBT	2		3,200	0	459	0.00		0.14	*
EBR	1	0	1,600	0	140	0.00		0.00	
WBL	2		3,400	0	608	0.00		0.18	*
WBT	3		4,800	0	747	0.00	*	0.16	
WBR	1	0	1,600	0	177	0.00		0.00	
N/S Critical Movements						0.00		0.25	
E/W Critical Movements						0.00		0.32	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.62	
Level of Service (LOS)						A		B	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Adams Ave
NORTH/SOUTH: Fairview Rd
EAST/WEST: Adams Ave

	Opening Year (2026) With Project						
Movement	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2		3,400	0	327	0.00 *	0.10 *
NBT	3		4,000	0	819	0.00	0.20
NBR	1	0	800	0	57	0.00	0.00
SBL	1		1,600	0	63	0.00	0.04
SBT	3		4,800	0	678	0.00 *	0.14 *
SBR	1	0	1,600	0	1,067	0.00	0.00
EBL	2		3,400	0	595	0.00 *	0.18 *
EBT	1		1,600	0	93	0.00	0.06
EBR	1	0	1,600	0	199	0.00	0.00
WBL	1		800	0	54	0.00	0.07
WBT	2		2,400	0	119	0.00 *	0.05 *
WBR	1	0	1,600	0	63	0.00	0.00
N/S Critical Movements						0.00	0.24
E/W Critical Movements						0.00	0.23
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.52
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Monitor Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Monitor Way

	Opening Year (2026) With Project								
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	1		1,600	0	209	0.00	*	0.13	
NBT	3		4,000	0	1,040	0.00		0.26	*
NBR	1	0	800	0	112	0.00		0.00	
SBL	1		1,600	0	90	0.00		0.06	*
SBT	3		4,800	0	775	0.00	*	0.16	
SBR	1	0	1,600	0	83	0.00		0.00	
EBL	1		800	0	54	0.00	*	0.07	*
EBT	1		800	0	0	0.00		0.00	
EBR	1	0	1,600	0	53	0.00		0.00	
WBL	1		800	0	78	0.00		0.10	
WBT	1		800	0	28	0.00	*	0.04	*
WBR	1	0	1,600	0	111	0.00		0.00	
N/S Critical Movements						0.00		0.32	
E/W Critical Movements						0.00		0.11	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.48	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	33	208	1159	243	84	889
Future Volume (Veh/h)	33	208	1159	243	84	889
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	226	1260	264	91	966
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			685			561
pX, platoon unblocked	0.89	0.85			0.85	
vC, conflicting volume	1896	552			1524	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1076	0			1019	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	76			84	
cM capacity (veh/h)	160	927			578	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	36	226	504	504	516	91	322	322	322
Volume Left	36	0	0	0	0	91	0	0	0
Volume Right	0	226	0	0	264	0	0	0	0
cSH	160	927	1700	1700	1700	578	1700	1700	1700
Volume to Capacity	0.22	0.24	0.30	0.30	0.30	0.16	0.19	0.19	0.19
Queue Length 95th (ft)	21	24	0	0	0	14	0	0	0
Control Delay (s)	33.9	10.1	0.0	0.0	0.0	12.4	0.0	0.0	0.0
Lane LOS	D	B				B			
Approach Delay (s)	13.4		0.0			1.1			
Approach LOS	B								

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Mustang Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Mustang Way

Move-ment	Opening Year (2026) With Project								
	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	1		1,600	0	73	0.00	*	0.05	
NBT	3		4,000	0	1,309	0.00		0.33	*
NBR	1	0	800	0	24	0.00		0.00	
SBL	1		1,600	0	84	0.00		0.05	*
SBT	3		4,800	0	822	0.00	*	0.17	
SBR	1	0	1,600	0	15	0.00		0.00	
EBL	1		800	0	64	0.00	*	0.08	*
EBT	1		800	0	1	0.00		0.00	
EBR	1	0	1,600	0	22	0.00		0.00	
WBL	1		800	0	9	0.00		0.01	
WBT	1		800	0	1	0.00	*	0.00	*
WBR	1	0	1,600	0	25	0.00		0.00	
N/S Critical Movements						0.00		0.38	
E/W Critical Movements						0.00		0.08	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.51	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	7	1400	60	0	855
Future Volume (Veh/h)	0	7	1400	60	0	855
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	8	1522	65	0	929
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			251			387
pX, platoon unblocked	0.89	0.85			0.85	
vC, conflicting volume	1864	540			1587	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1006	0			1089	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	211	926			544	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	8	609	609	369	310	310	310
Volume Left	0	0	0	0	0	0	0
Volume Right	8	0	0	65	0	0	0
cSH	926	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.36	0.36	0.22	0.18	0.18	0.18
Queue Length 95th (ft)	1	0	0	0	0	0	0
Control Delay (s)	8.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A						
Approach Delay (s)	8.9	0.0			0.0		
Approach LOS	A						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Arlington Dr
NORTH/SOUTH: Fairview Rd
EAST/WEST: Arlington Dr

	Opening Year (2026) With Project								
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	2		3,400	0	3	0.00	*	0.00	
NBT	3		4,800	0	1,209	0.00		0.25	*
NBR	1	0	1,600	0	153	0.00		0.00	
SBL	2		3,400	0	141	0.00		0.04	*
SBT	3		4,800	0	708	0.00	*	0.15	
SBR	1	0	1,600	0	6	0.00		0.00	
EBL	1		1,600	0	16	0.00	*	0.01	
EBT	1		1,600	0	0	0.00		0.00	*
EBR	1	0	1,600	0	6	0.00		0.00	
WBL	1		1,600	0	129	0.00		0.08	*
WBT	1		1,600	0	6	0.00	*	0.00	
WBR	1	0	1,600	0	236	0.00		0.00	
N/S Critical Movements						0.00		0.29	
E/W Critical Movements						0.00		0.08	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.05		0.05	
ICU						0.05		0.42	
Level of Service (LOS)						A		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	301	0	0	334	4	0	0	0	10	0	18
Future Volume (Veh/h)	9	301	0	0	334	4	0	0	0	10	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	327	0	0	363	4	0	0	0	11	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)		309										
pX, platoon unblocked												
vC, conflicting volume	367			327			548	714	164	548	712	184
vC1, stage 1 conf vol							347	347		365	365	
vC2, stage 2 conf vol							202	367		184	347	
vCu, unblocked vol	367			327			548	714	164	548	712	184
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	98	100	98
cM capacity (veh/h)	1188			1229			574	517	852	578	522	827

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	174	164	182	186	0	31
Volume Left	10	0	0	0	0	11
Volume Right	0	0	0	4	0	20
cSH	1188	1700	1229	1700	1700	717
Volume to Capacity	0.01	0.10	0.00	0.11	0.00	0.04
Queue Length 95th (ft)	1	0	0	0	0	3
Control Delay (s)	0.5	0.0	0.0	0.0	0.0	10.2
Lane LOS	A				A	B
Approach Delay (s)	0.3		0.0		0.0	10.2
Approach LOS					A	B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	226	161	188	81	4	10
Future Volume (Veh/h)	226	161	188	81	4	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	246	175	204	88	4	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)		738				
pX, platoon unblocked						
vC, conflicting volume	292				915	248
vC1, stage 1 conf vol					248	
vC2, stage 2 conf vol					667	
vCu, unblocked vol	292				915	248
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	81				99	99
cM capacity (veh/h)	1270				391	791

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	421	292	15
Volume Left	246	0	4
Volume Right	0	88	11
cSH	1270	1700	621
Volume to Capacity	0.19	0.17	0.02
Queue Length 95th (ft)	18	0	2
Control Delay (s)	5.7	0.0	10.9
Lane LOS	A		B
Approach Delay (s)	5.7	0.0	10.9
Approach LOS			B

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

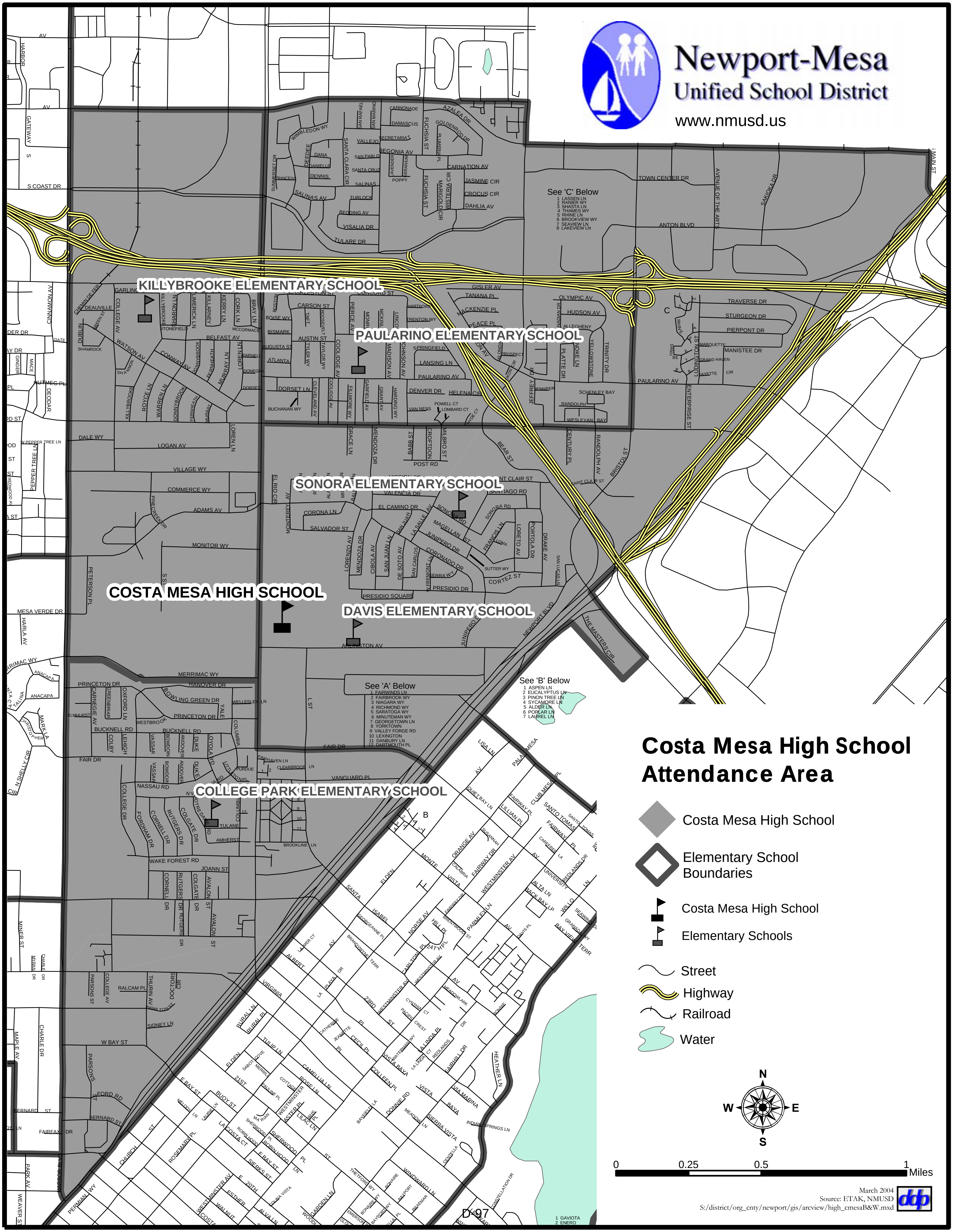
INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.: Fairview Rd & Merrimac Way
NORTH/SOUTH: Fairview Rd
EAST/WEST: Merrimac Way

	Opening Year (2026) With Project						
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2		3,400	0	120	0.00 *	0.04
NBT	3		4,800	0	1,305	0.00	0.27 *
NBR	1	0	1,600	0	0	0.00	0.00
SBL	2		3,400	0	0	0.00	0.00 *
SBT	3		4,800	0	740	0.00 *	0.15
SBR	1	0	1,600	0	102	0.00	0.00
EBL	2		2,400	0	66	0.00 *	0.03 *
EBT	1		800	0	0	0.00	0.00
EBR	1	0	1,600	0	55	0.00	0.00
WBL	1		1,600	0	0	0.00	0.00
WBT	1		800	0	0	0.00 *	0.00 *
WBR	1	0	800	0	0	0.00	0.00
N/S Critical Movements						0.00	0.27
E/W Critical Movements						0.00	0.03
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.05	0.05
ICU						0.05	0.35
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

COSTA MESA HIGH SCHOOL ATTENDANCE AREA



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COSTA MESA HIGH SCHOOL
DAVIS ELEMENTARY SCHOOL
COLLEGE PARK ELEMENTARY SCHOOL
See 'A' Below
See 'B' Below
See 'C' Below
Costa Mesa High School
Elementary School Boundaries
Costa Mesa High School
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Street
Highway
Railroad
Water
N
W
E
S
0
0.25
0.5
1
Miles
March 2004
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D-97