4.2 AIR QUALITY

INTRODUCTION

This section of the EIR evaluates potential air quality impacts that will be generated by construction and operation of the Project. The ambient air quality of the local and regional area is provided, along with the federal, State, and local air pollutant regulations. In addition, sources of air emissions near the Project Site are discussed. Plans and policies developed to improve air quality, and regulatory measures are identified.

Both the air quality emission and health risk assessment (HRA) modeling results for the Project are provided in **Appendix D**.

ENVIRONMENTAL SETTING

Regulatory Framework

Air quality within the South Coast Air Basin (Basin) is addressed through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly as well as individually to improve air quality through legislation, regulations, planning, policy making, enforcement, education, and a variety of programs. The agencies primarily responsible for improving the air quality within the Basin are discussed in the following paragraphs along with their individual responsibilities.

a. Federal

Clean Air Act

The United Stated Environmental Protection Agency (USEPA) is responsible for the implementation of portions of the Clean Air Act (CAA) of 1970,[1] which regulates certain stationary and mobile sources of air emissions and other requirements. Charged with handling global, international, national, and interstate air pollution issues and policies, the USEPA sets national vehicle and stationary source emission standards; oversees the approval of all State Implementation Plans;[2] provides research and guidance for air pollution programs; and sets National Ambient Air Quality Standards (NAAQS).[3] NAAQS for the seven common air pollutants, Ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter (PM10), fine particulate matter (PM2.5), and lead (Pb), are identified in the CAA.

1 US Environmental Protection Agency, "Clean Air Act Text," https://www.epa.gov/clean-air-act-overview/clean-air-act-text.

2 A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain National Ambient Air Quality Standards.

3 The NAAQS were set to protect public health, including that of sensitive individuals; for this reason, the standards continue to change as more medical research becomes available regarding the health effects of the criteria pollutants. The primary NAAQS define the air quality considered necessary, with an adequate margin of safety, to protect the public health.

The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA that are most applicable to the Project include Title I, Nonattainment Provisions, and Title II, Mobile Source Provisions.

The NAAQS were also amended in July 1997 to include an 8-hour standard for O3 and to adopt a NAAQS for PM2.5. The NAAQS were amended in September 2006 to include an established methodology for calculating PM2.5 and to revoke the annual PM10 threshold. The CAA includes the following deadlines for meeting the NAAQS within the Basin: (1) PM2.5 by the year 2014, which has not been met due to extreme drought conditions; and (2) 8-hour O3 by the year 2023.

b. State

California Clean Air Act

The California Clean Air Act,[4] signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practicable date.[5] The California Air Resources Board (CARB), a part of the California EPA (CaLEPA), is responsible for the coordination and administration of both State and federal air pollution control programs within California. In this capacity, CARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products, and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions and the CAAQS currently in effect for each of the criteria pollutants, as well as for other pollutants recognized by the State. The CAAQS are more stringent than the NAAQS.

Air Quality and Land Use Handbook

CARB published the *Air Quality and Land Use Handbook*[6] on April 28, 2005, to serve as a general guide for considering health effects associated with siting sensitive receptors proximate to sources of toxic air contaminant (TAC) emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance

4 California Air Resources Board (CARB), "California Clean Air Act" (1988), https://arb.ca.gov/bluebook/bb05/HEA[14]16/HEA_[14]_16.htm.
5 CARB, "CAAQS" (August 10, 2017), https://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm.
6 CARB, *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005), https://www.arb.ca.gov/ch/handbook.pdf.

document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions.

Some examples of CARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural road with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 50 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); and (3) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines.

California Motor Vehicle Code

The vehicle programs are a critical component in the State Implementation Plan (SIP) for achieving national ambient air quality standards in the South Coast and San Joaquin Valley.[7] They are also integral in CARB's Scoping Plan[8] to achieve the GHG reduction goals that were established through California legislation and Executive Orders.

California Advanced Clean Cars Program

In 2012, CARB adopted the California Advanced Clean Cars (ACC) Program which has regulations and standards that combine the control of criteria pollutants and GHG emissions into a single coordinated set of requirements for vehicle model years 2015 through 2025. ACC ensures the development of environmentally superior passenger cars and other vehicles that would continue to deliver the performance, utility, and safety vehicle owners have come to expect, all while saving the consumer money through significant fuel savings. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (i.e., battery electric and fuel-cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[9]

7 CARB, "California State Implementation Plans" (last reviewed September 21, 2018), https://www.arb.ca.gov/planning/sip/sip.htm.

8 CARB, "AB 32 Scoping Plan" (January 8, 2018), https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

9 CARB, "The Advanced Clean Cars Program" (January 18, 2018), https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13 of the California Code of Regulations, Section 2485)

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling[10] measure includes regulations that pertain to air quality emissions. Specifically, Section 2485 states that during construction, the idling of all diesel-fueled commercial vehicles weighing more than 10,000 pounds shall be limited to 5 minutes at any location. In addition, Section 93115 in Title 17 of the California Code of Regulations (CCR)[11] states that operation of any stationary, diesel-fueled, compression-ignition engines shall meet specified fuel and fuel additive requirements and emission standards.

California Air Resources Board (CARB)

CARB Rule 2449, General Requirements for In-Use Off-Road Diesel-Fueled Fleets

Requires off-road diesel vehicles to limit nonessential idling to no more than 5 consecutive minutes.[12]

CARB Rule 2480 Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools

CARB Rule 2480 requires school busses, transit busses, and commercial vehicles (gross vehicle weight greater than 10,001 pounds except for pickup trucks and zero emission vehicles) to limit nonessential idling to no more than 5 consecutive minutes when within 100 feet of a school.[13]

CARB Rule 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

CARB Rule 2485 requires commercial vehicles weighing more than 10,001 pounds to limit nonessential idling to no more than 5 consecutive minutes.[14]

10 CARB, Section 2485 in Title 13 of the CCR, https://www.arb.ca.gov/msprog/truck-idling/13ccr2485_09022016.pdf.
11 CARB, *Final Regulation Order: Amendments to the Airborne Toxic Control Measure For Stationary Compression Ignition Engines* (May 19, 2011), https://www.arb.ca.gov/diesel/documents/FinalReg2011.pdf.
12 CARB, *Final Regulation Order: Regulation For In-Use Off-Road Diesel-Fueled Fleets,* https://www.arb.ca.gov/msprog/ordiesel/documents/finalregorder-dec2011.pdf.
13 CARB, Section 2480 in Title 13 of the CCR, California Administrative Code (December 24, 2010), https://www.arb.ca.gov/toxics/sbidling/SBVIdling.pdf.
14 CARB, CARB Rule 2485, https://www.arb.ca.gov/msprog/truck-idling/13ccr2485_09022016.pdf.

California Department of Education (CDE)

General Education Code Provisions, California Education Code, Section 17213; and Public Resources Code, Section 21151.8(a)

California Education Code (CEC) Section 17213 and Public Resources Code (PRC) Section 21151.8(a), require school districts to consider off-site sources of hazardous air emissions before acquiring property for a school site or approving an EIR or negative declaration for a school site acquisition or new school construction project. These sections require school districts to identify freeways and other busy traffic corridors where the edge of the roadway is within 500 feet of a proposed school site. A busy traffic corridor is defined as having 50,000 or more average daily vehicle trips in a rural area or 100,000 or more average daily trips in an urban area.[15,16]

Further, each of these regulations requires school districts to consider off-site sources of hazardous air emissions before acquiring property for a school site or approving an EIR or negative declaration for a school site acquisition or new school construction project. These sections require school districts to consult with appropriate agencies to identify facilities, including but not limited to freeways and other busy traffic corridors; large agricultural operations; and rail yards within one-quarter mile of a proposed school site that might reasonably be expected to emit hazardous air emissions. These also include the specified mandatory measures, which could include installation of minimum efficiency reporting value (MERV) filters in heating, ventilation, and air conditioning (HVAC) systems, that would be incorporated into the design and construction of the new school facility.[17]

California Building Standards Code

2016 California Energy Code (CCR, Title 24, Part 6)

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and are updated triennially in the California Building Standards Code (CBSC). Title 24, Part 6, requires the design of building

15 California Legislative Information, California Education Code Section 17213, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=EDC&sectionNum=17213.

16 California Legislative Information, California Education Code Section 2115.8, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21151.8.

17 California Department of Education, *School Site Selection and Approval Guide* (December 28, 2017), https://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp.

shells and building components to conserve energy.[18] The standards are updated periodically to allow for consideration and possible incorporation of new energy-efficient technologies and methods.

On January 1, 2010, the California Energy Commission adopted the 2008 Non-residential Compliance Manual, while the 2008 Residential Compliance Manual was adopted on December 17, 2008. The 2008 Code provides California with an adequate, reasonably priced, and environmentally sound supply of energy in response to AB 32, acts on the findings from the Integrated Energy Policy Report, and meets the Executive Order in the Green Building Initiative to improve the energy efficiency of nonresidential buildings through aggressive standards.[19]

On May 31, 2012, the California Energy Commission adopted the 2013 Building Energy Efficiency Standards, which went into effect on January 1, 2014. Buildings constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.[20]

The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant improvements to nonresidential standards include alignment with the American Society of Heating, Refrigerating, and Air-Conditioning Engineers 90.1 2013 standards, and efficiency for elevators and direct digital controls.[21]

California Green Building Code (California Code of Regulations, Title 24, Part 11)

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (CALGreen) was adopted as part of the California Building Standards Code (Title 24).[22] 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. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011.

---

18 California Energy Commission, *2016 Building Energy Efficiency Standards For Residential And Nonresidential Buildings* (June 2015), http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf.

19 California Energy Commission, *2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings* (January 2010), http://www.energy.ca.gov/2008publications/CEC-400-2008-001/CEC-400-2008-001-CMF.PDF

20 California Energy Commission, *2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings* (May 2012), https://www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf.

21 California Energy Commission, 2016 Building Energy Efficiency Standards For Residential And Nonresidential Buildings.

22 California Buildings Standards Commission, "California Green Buildings Standards Code" (2017), http://www.bsc.ca.gov/Home/CALGreen.aspx.

The 2016 CALGreen Code went into effect on January 1, 2017. TA number of important updates are included in the 2016 CALGreen Code, such as increased requirements for electrical vehicle charging infrastructure and a new universal waste code section.

The State and national ambient air quality standards for each of the criteria pollutants and their effects on health are summarized in **Table 4.2-1: Ambient Air Quality Standards**. **Table 4.2-1** also sets forth the State ambient air quality standards and health effects applicable to sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride, even though such pollutants are generally not applicable to the uses within the Project Site.

Table 4.2-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
O3	1 hour	0.09 ppm (180 µg/m^3)	Ultraviolet photometry	—	Same as primary standard	Ultraviolet photometry
	8 hour	0.07 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
PM10	24 hour	50 µg/m^3	Gravimetric or beta attenuation	150 µg/m^3	Same as primary standard	Inertial separation and gravimetric analysis
	Annual arithmetic mean	20 µg/m^3		—		
PM2.5	24 hours	No separate State standard		35 µg/m^3	Same as primary standard	Inertial separation and gravimetric analysis
	Annual arithmetic mean	12 µg/m^3	Gravimetric or beta attenuation	12 µg/m^3		
CO	8 hours	9.0 ppm (10 mg/m^3)	Nondispersive infrared photometry (NDIR)	9 ppm (10 mg/m^3)	None	NDIR
	1 hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
NO2	Annual arithmetic mean	0.03 ppm (57 µg/m^3)	Gas phase chemilumi-nescence	0.053 ppm (100 µg/m^3)	Same as primary standard	Gas phase chemilumines cence
	1 hour	0.18 ppm (339 µg/m^3)		0.100 ppm (188 µg/m^3)		

Source: California Air Resources Board website at: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf (accessed January 2018).
Note: ppm = parts per million.

c. Regional

South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) shares responsibility with CARB for ensuring that all State and federal ambient air quality standards are achieved and maintained over an area of approximately 10,743 square miles. This area includes all of Orange County and Los Angeles County except for the Antelope Valley, the nondesert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County.

Air Quality Management Plan

The Project lies within the jurisdiction of the SCAQMD, and compliance with SCAQMD rules and guidelines is required. SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the Basin. In coordination with the Southern California Association of Governments (SCAG), SCAQMD is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the Basin. An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the national and/or California ambient air quality standards.

SCAQMD approved a Final 2016 AQMP on March 3, 2017.[23] The 2016 AQMP includes transportation control measures developed by SCAG from the *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy* (2016 RTP/SCS), as well as the integrated strategies and measures needed to meet the NAAQS. The 2016 AQMP demonstrates attainment of the 1-hour and 8-hour ozone NAAQS as well as the latest 24-hour and annual PM2.5 standards.

Under the Federal CAA, SCAQMD has adopted federal attainment plans for O3 and PM10. The SCAQMD reviews projects to ensure that they would not (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay the timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan.

Local governments have the authority and responsibility to reduce air pollution through their police power and land use decision-making authority. Specifically, local governments are responsible for the mitigation of emissions resulting from land use decisions and for the implementation of transportation control measures as outlined in the AQMP.[24] The AQMP assigns local governments certain responsibilities to

23 South Coast Air Quality Management District (SCAQMD), "Final 2016 Air Quality Management Plan" (2016), http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp.

24 SCAQMD, *CEQA Air Quality Handbook* (April 2003), p. 2-2.

assist the Basin in meeting air quality goals and policies. The General Plans for local governments should include in their Air Quality Elements goals, policies, and implementation measures that provide the regulatory framework needed to assist the Basin in meeting the AQMP's goals and policies. Through capital improvement programs, local governments can fund infrastructure that contributes to improved air quality by requiring such improvements as bus turnouts, energy-efficient streetlights, and synchronized traffic signals.

Criteria Pollutants

Air pollutant emissions within the region are primarily generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack at an individual facility. Area sources are widely distributed over a geographic area and are made up of multiple sources, such as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, parking lots, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on road or off road. On-road sources are vehicles that may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Major highways and freeways within the Project vicinity include Interstate 105 (I-105) to the north, which carries approximately 224,000 average annual daily trips;[25] State Route 91 (SR-91) to the south, which carries approximately 212,000 average annual daily trips;[26] Interstate 710 (I-710) to the east, which carries approximately 240,000 average annual daily trips;[27] and Interstate 110 (I-110) to the west, which carries approximately 242,000 average annual daily trips.[28]

Major arterial roadways within the Project area include W. Alondra Boulevard, which generally runs in an east–west direction south of the Project Site and extends through the City's western boundary to I-710; S. Central Avenue, which runs in a roughly north–south direction west of the Project Site and extends from

25 California Department of Transportation, "2016 Traffic Volumes (for ALL vehicles on CA State Highways)" (Between Wilmington Avenue [Postmile 9.775] and Long Beach Boulevard [Postmile 11.506]; http://www.dot.ca.gov/trafficops/census/volumes2016/.

26 California Department of Transportation, "2016 Traffic Volumes (for ALL vehicles on CA State Highways)" (Between Wilmington Avenue [Postmile 9.162] and Alameda Avenue [Postmile 10.271]; http://www.dot.ca.gov/trafficops/census/volumes2016/.

27 California Department of Transportation, "2016 Traffic Volumes (for ALL vehicles on CA State Highways)" (Between Alondra Boulevard [Postmile 13.945] and Lynwood, Long Beach Boulevard [Postmile 15.962]; http://www.dot.ca.gov/trafficops/census/volumes2016/.

28 California Department of Transportation, "2016 Traffic Volumes (for ALL vehicles on CA State Highways)" (Between Junction Route 91 [Postmile 9.87] and Redondo Beach Boulevard [Postmile 11.239]; http://www.dot.ca.gov/trafficops/census/volumes2016/.

El Segundo Boulevard to the north and SR-91 to the south; W. Alameda Street, which generally runs in a north–south direction east of the Project Site and is bound by the Alameda Corridor freight expressways and industrial and commercial uses; and Compton Boulevard, which generally runs in an east–west direction north of the Project Site and is the main downtown arterial, bordering the Civic Center on the north.[29] The Project area is served by local bus and rail lines operated by the Los Angeles County Metropolitan Transportation Authority.

Air quality of a region is considered to be in attainment of the NAAQS if the measured ambient air pollutant levels are not exceeded more than once per year, except for O3, PM10, PM2.5. The NAAQS for O3, PM10, and PM2.5 are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. With respect to the CAAQS, a region's air quality is considered to be in attainment if the measured ambient air pollutant levels for O3, CO, NO2, SO2, PM10, PM2.5, and Pb are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive 3-year period. CARB is the State agency responsible for setting the CAAQS.

A brief description of the criteria pollutants is provided in the following paragraphs, with related health effects summarized in **Table 4.2-2: Common Sources of Health Effects for Criteria Air Pollutants**.

O3 is a gas formed when volatile organic compounds (VOCs) and oxides of nitrogen (NOx), both byproducts of internal combustion engine exhaust and other sources, undergo slow photochemical reactions in the presence of sunlight. O3 concentrations are generally highest during the summer months, when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.

VOCs are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Adverse effects on human health are not caused directly by VOCs, which are not "criteria" pollutants per se, but rather by the reactions of VOCs to form secondary air pollutants, including O3. VOCs are also referred to as reactive organic compounds (ROCs) or reactive organic gases (ROGs).

NO2 is a reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide (NO). NO2 is also a byproduct of fuel combustion. The principle form of NO2 produced by combustion is NO, but NO reacts quickly to form NO2, creating the mixture of NO and NO2 into NOx. NO2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric

29 City of Compton, Draft General Plan 2030, "Circulation Element."

concentrations, however, NOx is only potentially irritating. NO2 absorbs blue light, the result of which is a brownish-red cast to the atmosphere and reduced visibility.

Table 4.2-2
Common Sources of Health Effects for Criteria Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O3)	Formed when VOC and oxides of nitrogen (NOx) react in the presence of sunlight; VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil), solvents, petroleum processing, and storage and pesticides	Breathing difficulties, lung tissue damage, damage to rubber and some plastics
Volatile Organic Compounds (VOC)	Fuel combustion and/or released through evaporation of organic compounds, internal combustion associated with motor vehicle usage is the major source of hydrocarbons, as are architectural coatings	Headaches, dizziness, light-headedness, drowsiness, nausea, and eye and respiratory irritation
Respirable Particulate Matter (PM10)	Road dust, windblown dust (agriculture), construction and fireplaces; also formed from other pollutants (e.g., acid rain, NOx, oxides of sulfur [SOx], organics) and from incomplete combustion of any fuel	Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling
Fine Particulate Matter (PM2.5)	Fuel combustion in motor vehicles, equipment and industrial sources, residential and agricultural burning; also formed from reaction of other pollutants (e.g., acid rain, NOx, SOx, organics)	Increases respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling
Carbon Monoxide (CO)	Any source that burns fuel, such as automobiles, trucks, heavy construction equipment, farming equipment, and residential heating	Chest pain in heart patients, headaches, reduced mental alertness
Nitrogen Dioxide (NO2)	This would include motor vehicle exhaust; high temperature stationary combustion; atmospheric reactions	Lung irritation and damage
Lead (Pb)	Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint	Learning disabilities, brain and kidney damage
Sulfur Dioxide (SO2)	Coal- or oil-burning power plants and industries, refineries, diesel engines	Increases lung disease and breathing problems for asthmatics; reacts in the atmosphere to form acid rain

Source: California Air Resources Board, "ARB Fact Sheet: Air Pollution and Health" (last reviewed December 2, 2009), accessed March 2017, http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm.

CO is a colorless, odorless gas produced by the incomplete combustion of fuels. 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, unlike ozone, and because motor vehicles operating at slow speeds are the primary source of CO in the basin, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections.

SO2 is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of the burning of high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO2 oxidizes in the atmosphere, it forms sulfates (SO4).

PM10 consists of extremely small, suspended particles or droplets 10 micrometers (μm) or smaller in diameter. Some sources of PM10, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM10 is caused by road dust, diesel soot, combustion products, the abrasion of tires and brakes, and construction activities.

PM2.5 is to fine particulate matter that is 2.5 μm or smaller in size. The sources of PM2.5 include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel-powered vehicles such as buses and trucks. These fine particles are also formed in the atmosphere when gases such as SO_2, NOx, and VOCs are transformed in the air by chemical reactions.

Pb occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead in the Basin. The use of leaded gasoline is no longer permitted for on-road motor vehicles, so most such combustion emissions are associated with off-road vehicles such as race cars that use leaded gasoline. Other sources of Pb include the manufacturing and recycling of batteries, sanding or removal of lead-based paint, ink, ceramics, ammunition, and secondary lead smelters.

TACs are a diverse group of noncriteria air pollutants that can affect human health but for which ambient air quality standards have not been established. This is not because they are fundamentally different from the pollutants discussed above, but because their effects tend to be local rather than regional. TACs are classified as carcinogenic and noncarcinogenic; carcinogenic TACs can cause cancer, and noncarcinogenic TAC can cause acute and chronic impacts to different target organ systems (e.g., eyes, respiratory, reproductive, developmental, nervous, and cardiovascular).

CARB and the California Office of Environmental Health Hazard Assessment (OEHHA) determine if a substance should be formally identified, or "listed," as a TAC in California. Diesel particulate matter (DPM), which is emitted in the exhaust from diesel engines, was listed by the State as a TAC in 1998. DPM has historically been used as a surrogate measure of exposure for all diesel exhaust emissions. DPM consists of fine particles (diameter less than 2.5 μm), including a subgroup of ultrafine particles (diameter less than 0.1 μm). Collectively, these particles have a large surface area, making them an excellent medium for

absorbing organics. The visible emissions in diesel exhaust include carbon particles or soot. Diesel exhaust also contains a variety of harmful gases and carcinogens. Exposure to DPM may be a health hazard, particularly to children, whose lungs are still developing, and to the elderly, who may have other serious health problems. DPM levels and resultant potential health effects may be higher near heavily traveled roadways with substantial truck traffic or near industrial facilities. CARB has determined that of the top 10 inhalation risk contributors, DPM contributes approximately 80 percent of the total potential cancer risk.[30]

SCAQMD Rules

The following SCAQMD rules relate to a specific type of operation or source of pollution. Because knowledge of air pollution is constantly growing, these rules and regulations are in a dynamic state and are constantly changing.

Rule 201, Permit to Construct

Rule 201 requires a permit for installation of any equipment which releases air pollutants.[31]

Rule 402, Nuisance Odors

Rule 402 prohibits the discharge of odors that cause injury, detriment, nuisance, or annoyance to a considerable number of people.[32]

Rule 403, Fugitive Dust

Rule 403 requires the use of stringent best available control measures to minimize PM10 emissions during grading and construction activities.[33]

30 SCAQMD, *Multiple Air Toxics Exposure Study in the South Coast Air Basin: Final Report MATES-IV* (May 2015), http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf.

31 SCAQMD, "Rule 201: Permit to Construct" (amended December 3, 2004), http://www.aqmd.gov/docs/default-source/rule-book/reg-ii/rule-201.pdf.

32 SCAQMD, "Rule 402: Nuisance" (adopted May 7, 1976), http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf.

33 SCAQMD," Rule 403: Fugitive Dust" (amended June 3, 2005), http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf.

Rule 1113, Architectural Coatings

Rule 1113 requires reductions in the volatile organic compounds (VOCs) content of coatings, with a substantial reduction in the VOC content limit for flat coatings.[34]

Rule 1186, PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations

Rule 1186 requires control measures to reduce fugitive dust from paved and unpaved roads in addition to livestock operations.[35]

Rule 1401, New Source Review of Toxic Air Contaminants

Rule 1401 specifies limits for specific maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants.[36]

Rule 1403, Asbestos Emissions from Demolition/Renovation Activities

Rule 1403 requires the owner or operator of any demolition or renovation activity to have an asbestos survey performed prior to demolition and to provide notification to the SCAQMD prior to commencing demolition activities.[37]

d. Local

City of Compton

Air Quality Element

The City has adopted the 1991 General Plan and includes an Conservation/Open Space/Park and Recreation Element.[38] This Element addresses issues as it relates to air quality and energy conservation. The Element includes goals and policies to help control air pollution through effective land use and transportation planning. The City's working Draft General Plan Air Quality Element was developed through the City of Compton's Draft 2030 Comprehensive General Plan Update on November 6, 2014.[39] The planning area for the Air Quality Element covers the entire City of Compton, which encompasses an area

34 SCAQMD, "Rule 1113 Architectural Coatings" (amended February 5, 2016), http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf.
35 SCAQMD, "Rule 1186: PM10 Emissions From Paved and Unpaved Roads, and Livestock Operations" (amended July 11, 2008), http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1186.pdf.
36 SCAQMD, "Rule 1401: New Source Review of Toxic Air Contaminants" (amended September 1, 2017), http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1401.pdf.
37 SCAQMD, "Rule 1403: Asbestos Emissions From Demolition/Renovation Activities" (amended October 5, 2007), http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1403.pdf.
38 City of Compton, *General Plan,* "Conservation/Open Space/Parks and Recreation Element" (December 3, 1991).
39 City of Compton, *Draft 2030 Comprehensive General Plan Update,* "Air Quality Element" (November 6, 2014).

of approximately 10.2 square miles. The Air Quality Element serves to aid the City in attaining State and federal ambient air quality standards at the earliest feasible date, while still maintaining economic growth and improving quality of life.

The proposed Air Quality Element and the accompanying Clean Air Program provide for interrelationships between transportation and land use planning to meet the City's mobility and clean air goals. With the City's adoption of the Air Quality Element and the accompanying Clean Air Program, the City is seeking to achieve consistency with regional (SCAG) and local air quality, growth management, mobility, and congestion management plans. Performance-based standards have been adopted with the local plans to provide flexibility in implementation of the policies and objectives of the City's Air Quality Element.

Existing Conditions

Regional Setting

South Coast Air Basin

The City of Compton and the District lie within the South Coast Air Basin (Basin) which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin 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 semipermanent, high-pressure zone of the eastern Pacific.

The USEPA and the CARB designate air basins where air pollution levels exceed the State or federal ambient air quality standards as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, an area is considered "unclassified." Federal nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Transportation conformity for nonattainment and maintenance areas is required under the federal CAA to ensure federally supported highway and transit projects conform to the SIP. The USEPA approved California's SIP revisions for attainment of the 1997 8-hour O3 National AAQS for the Basin in March 2012. Findings for the new 8-hour O3 emissions budgets for the Basin and consistency with the recently adopted 2016 RTP/SCS were submitted to the USEPA for approval.[40]

The current attainment designations for the Basin are shown in **Table 4.2-3: South Coast Air Basin Attainment Status**. Under the federal standards, the Basin is currently designated as nonattainment for

40 Southern California Association of Governments (SCAG), *Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy [Final 2016 RTP/SCS]* (April 2016), http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

the ozone, lead, and PM2.5 thresholds. Under the State standards the Basin is currently designated as nonattainment for the ozone, PM10, and PM2.5 thresholds.

Table 4.2-3
South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone (O3)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Unclassified/Attainment
Nitrogen Dioxide (NO2)	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO2)	Attainment	Attainment
Lead (Pb)	Attainment	Nonattainment
Respirable Particulate Matter (PM10)	Nonattainment	Attainment
Fine Particulate Matter (PM2.5)	Nonattainment	Nonattainment

Source: CARB, "Area Designations Maps/State and National," http://www.arb.ca.gov/desig/adm/adm.htm (last reviewed October 18, 2017).

Source Receptor Areas

SCAQMD has divided its jurisdictional territory of the Basin into 38 Source Receptor Areas (SRAs), most of which have monitoring stations that collect air quality data.[41] These SRAs are designated to provide a general representation of the local meteorological, terrain, and air quality conditions within the particular geographical area. These geographical areas include urbanized regions, interior valleys, coastal areas, and mountains.

The Project Site is located in the South Central LA County SRA (SRA 12).[42] The monitoring station for this area is located at 700 North Bullis Road, approximately 1.25 miles northwest of the Project Site.[43] This station presently monitors pollutant concentrations of O3, NO2, and PM2.5.

Table 4.2-3: Air Quality Monitoring Summary Update lists the ambient pollutant concentrations registered and the violations of State and federal standards that have occurred at the abovementioned monitoring stations from 2014 through 2016, the most recent years for which data are available. As shown, the monitoring stations have registered values above State and federal standards for O3, the State

41 SCAQMD, Map of Monitoring Areas, accessed November 2017, http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf.
42 SCAQMD, Map of Monitoring Areas.
43 CARB, Quality Assurance Air Monitoring Site Information, accessed November 2017, https://www.arb.ca.gov/qaweb/site.php?s_arb_code=70112.

standard for PM10, and the federal standard for PM2.5. Concentrations of NO2 have not been exceeded anywhere within the Basin for several years. Values for state SO2 and PM10 are not presented in the table because the station does not monitor these pollutants.

Table 4.2-4
Air Quality Monitoring Summary Update

Air Pollutant	Averaging Time (Units)	2014	2015	2016
O3	Max 1 hour (ppm)	0.094	0.091	0.098
	Days > CAAQS threshold (0.09 ppm)	0	0	1
	Max 8 hours (ppm)	0.082	0.073	0.071
	Days > CAAQS threshold (0.070 ppm)	4	1	1
	Days > NAAQS threshold (0.070 ppm)	4	1	1
CO	Max 1 hour (ppm)	6.0	4.4	4.4
	Days > CAAQS threshold (20 ppm)	0	0	0
	Days > NAAQS threshold (35 ppm)	0	0	0
	Max 8 hours (ppm)	3.8	3.3	3.9
	Days > CAAQS threshold (9.0 ppm)	0	0	0
	Days > NAAQS threshold (9.0 ppm)	0	0	0
NO2	Max 1 hour (ppb)	68.2	73.6	63.7
	Days > CAAQS threshold (0.18 ppm)	0	0	0
	Days > NAAQS threshold (0.0534 ppm)	0	0	0
PM2.5	State Annual Average (µg/m^3)	N/A	N/A	N/A
	Federal Annual Average (µg/m^3)	N/A	11.7	11.0
	24 hours (µg/m^3)	35.8	41.3	36.3
	Days > CAAQS threshold	N/A	N/A	N/A
	Days > NAAQS threshold (35 µg/m^3)	1	3	1

Sources: California Air Resources Board, Top 4 Summary (2014-2016), https://www.arb.ca.gov/adam/topfour/topfour1.php; CO data found at SCAQMD, Historical Data By Year, http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year.

Notes: > = exceed; CAAQS = California Ambient Air Quality Standard; ppm = parts per million; max = maximum; mean = annual arithmetic mean; NAAQS = National Ambient Air Quality Standard.

Multiple Air Toxics Exposure Study III

In 2000, SCAQMD conducted a study[44] on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk. In 2008, SCAQMD conducted its third update to its study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in one million. The largest contributor to this risk was diesel exhaust, accounting for approximately 84 percent of the air toxics risk.[45] Excess cancer risk within the District boundaries can range from 175 to 1,850 in a million.[46]

Topography, Climate, and Meteorology

The Basin is a coastal plain, with connecting broad valleys and low hills that are bounded by the Pacific Ocean to the southwest and by high mountains around the rest of its perimeter. The general region lies in the semipermanent, high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. Los Angeles County, including the City of Compton, is known to be in a local steppe climate, which is the region between the tropic and polar regions in the middle latitudes associated with cool winters and warm summers. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

The potential for atmospheric pollution in an area depends largely on winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and low inversions produces the greatest concentration of air pollutants. The warm sunny weather in the Basin associated with a persistent high-pressure system is conducive to the formation of O3 and other oxidative pollutants, commonly referred to as smog. The problem is further aggravated by the surrounding mountains, frequent low inversion heights, and stagnant air conditions. All of these factors act together to trap pollutants in the Basin. On days without inversions or on days when winds average more than 15 miles per hour (mph), smog potential is greatly reduced.

The vertical dispersion of air pollutants in the Basin is hampered by the presence of persistent temperature inversions. High-pressure systems, such as the semipermanent, high-pressure zone in which the Basin is located, are characterized by an upper layer of dry air that warms as it descends, restricting

44 SCAQMD, *Multiple Air Toxics Exposure Study III Model Estimated Carcinogenic Risk,* map, accessed January 2014, http://www3.aqmd.gov/webappl/matesiii/.
45 SCAQMD, *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES III).*
46 SCAQMD, *Multiple Air Toxics Exposure Study III Model Estimated Carcinogenic Risk*.

the mobility of cooler, marine-influenced air near the ground surface and resulting in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog. The Basin-wide occurrence of inversions at 3,500 feet above mean sea level (amsl) or less averages 191 days per year usually in the summer months with the formation of the marine layer.

Predominant meteorological conditions in the region include light winds and shallow vertical mixing due to low-altitude temperature inversion. Long-term diurnal wind patterns in the general vicinity of the Project Site are dominated by higher velocity, on-shore daytime winds of 4 to 12 mph from the southwest. In Compton, wind is most often from the west from February to November approximately 50 percent of the time, and from the north for the rest of year approximately 36 percent of the time. Diurnal winds from the southwest are created by pressure differences between the relatively cold ocean and the unevenly heated land. Nocturnal winds exhibit more directional variability and commonly result in low-velocity, on-shore flow at speeds of 2 to 5 mph from the west and southwest, and less commonly in 2 to 20 mph winds from the northwest and east. Nocturnal winds are created when air along the mountain slopes cools and descends into the lower elevations of the Basin toward the ocean. These diurnal and nocturnal wind patterns play an important role in dispersing air pollutants and moderating the temperatures throughout the Basin and the Project vicinity.

Average temperatures in the Project vicinity range from highs in the upper 70s to low 80s Fahrenheit (°F) to lows in the upper 40s to lower 50s °F. The warmest periods tend to be from June to October, with an average temperature above 78°F. The cold season lasts from November to April, with an average temperature below 69°F. Rarely does the temperature fall below 42°F and above 88°F.[47]

The average annual rainfall for the Project area ranges from 12 to 16 inches. The majority of precipitation occurs from November through March and is usually caused by an upper level trough pattern in the jet stream and low-pressure systems.[48] The infrequent summer rainfall consists of periodic and short-term scattered thundershowers dominated by an extension southwest monsoon pattern that extends over the southwestern United States.

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

47 Western Regional Climate Center, "Downey Fire Station: Period of Record Monthly Climate Summary" (period of record 03/01/1906-09/30/2012), https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2494.

48 Western Regional Climate Center, "Downey Fire Station: Period of Record Monthly Climate Summary.".

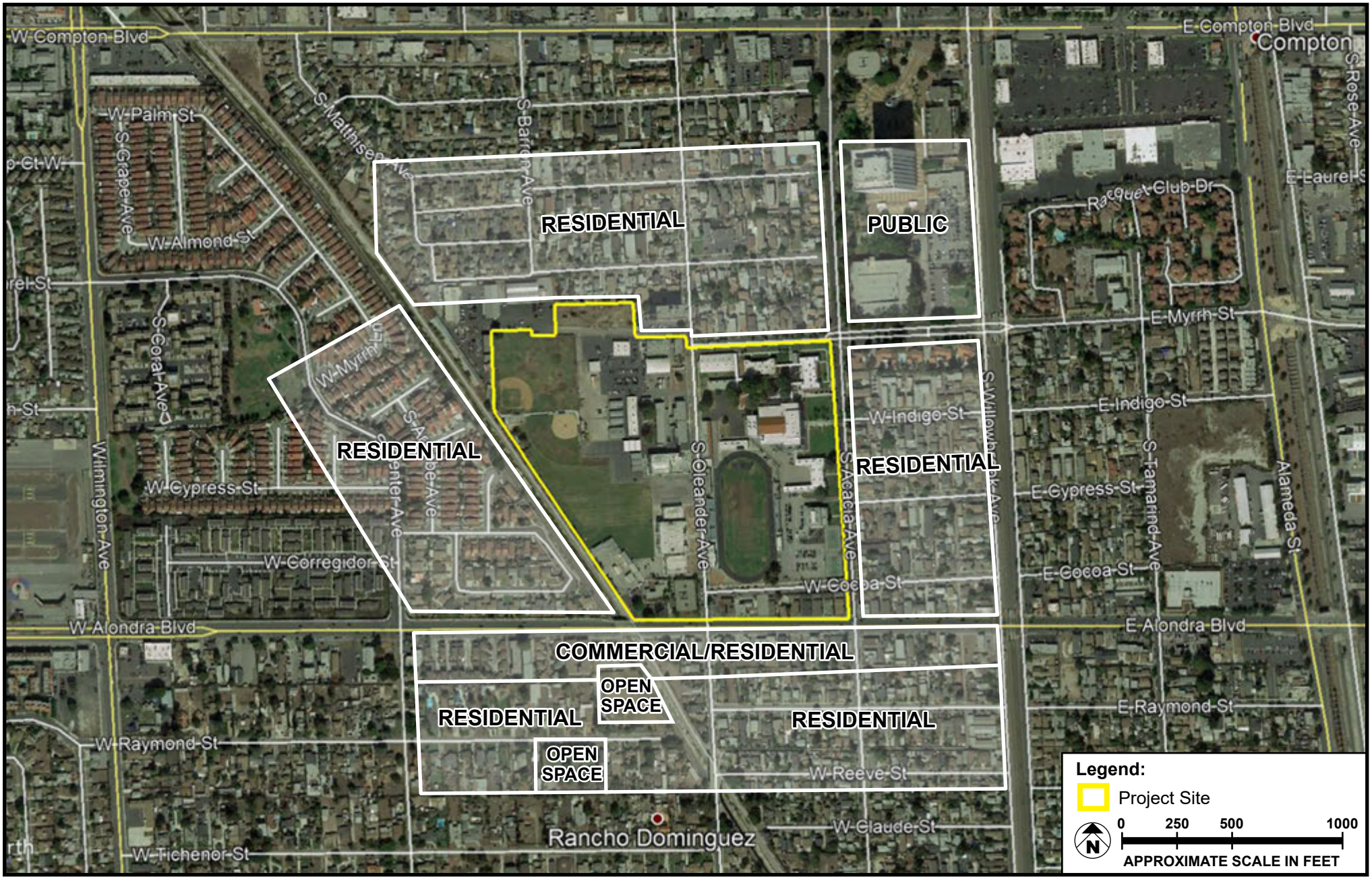
the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other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

Land uses surrounding the Project Site consist of single- and multifamily residential uses to the north, west, and east; a mix of residential and commercial uses are to the south, as shown in **Figure 4.2-1: Sensitive Receptors**. In addition, **Table 4.2-5: Other Sensitive Receptors near the Project Site** shows the location and distance to each of the closest receptors that were noted during the field survey of the Project Site that were not just residential. Although these other receptors are near the Project Site, the analysis that follows is a "worst-case scenario" for the residences within 50 feet of the Project Site; therefore, the other uses would experience fewer or similar impacts on air quality.

Table 4.2-5
Other Sensitive Receptors near the Project Site

Location	Type of Use	Distance from Project Site (in feet)	Direction from Site
Raymond Street Park	Park	240	South
Doctor Walter R. Tucker Park	Park	760	West
530 W. Alondra Boulevard	Church	1,080	Southwest
157 E. Myrrh Street	Church	1,065	East
312 S. Oleander Avenue	Preschool	390	North
225 W. Alondra Boulevard	Daycare Center	50	East
425 S. Oleander Avenue	Senior Living Center	80	North

Source: Meridian Consultants LLC, field survey conducted by Gavin Heller (November 14, 2017).



SOURCE: Google Earth - 2018

FIGURE **4.2-1**

Meridian Consultants

Sensitive Receptors

181-001-17

Existing Operational Emissions

The Project Site includes the existing CHS Campus, totaling approximately 40 acres in size. The CHS Campus includes eight primary buildings, numerous portable classrooms and other outdoor multipurpose fields. The Project Site also includes the additional 10 parcels of land along the southeast, totaling approximately 2 acres in size. These parcels include multifamily residential buildings, a church, and a commercial car wash. The total combined Project Site is approximately 42 acres.

The emissions associated with the existing CHS Campus and the additional 10 parcels are shown in **Table 4.2-6: Existing Operational Air Quality Emissions.** The California Emissions Estimator Model (CalEEMod) was used to estimate existing air quality operation generation and the modeling data is provided in **Appendix D**. The model relies on project-specific parameterization of the scope of construction activities that will be conducted and the size of the completed project to generate its emissions estimates

Table 4.2-6
Existing Operational Air Quality Emissions

Source	VOCs	NOx	CO	SOx	PM10	PM2.5
	pounds/day					
Operating emissions associated with existing school	10	10	30	<1	6	2
Operating emissions associated with acquisition parcels	1	4	12	<1	2	1
Total combined existing operational emissions	11	14	42	<1	8	3

*Source: CalEEMod. Refer to Air Quality Modeling Data in **Appendix D,** Section 2.2: Overall Operational.*
Notes: CO = carbon monoxide; NOx = nitrogen oxides; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns; VOCs = volatile organic compounds; SOx = sulfur oxides.

ENVIRONMENTAL IMPACTS

Methodology

The SCAQMD requires that emissions of air pollutants that will be generated by implementation of a proposed project are quantified and compared to applicable regulatory thresholds. Emissions of CAPs, VOCs, and DPM that will be generated by Project implementation were quantified using CalEEMod. Various assumptions are made within the modeling software based on land use type and project scale.

Construction Emissions

General Construction Emissions

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, loose dirt from paved site access

roadways, and motor vehicles transporting the construction crew. Grading activities produce fugitive dust emissions (PM10 and PM2.5) from soil-disturbing activities. Exhaust emissions from construction activities on site would vary daily as construction activity levels change. Short-term emissions of criteria air pollutants (e.g., CO, SOx, PM10, and PM2.5) generated by Project construction and ozone precursors (e.g., VOCs and NOx) were assessed in accordance with SCAQMD-recommended methods. These emissions were modeled using the CARB-approved CalEEMod computer program as recommended by SCAQMD. CalEEMod is designed to model construction emissions for land use development projects and allows for the input of project-specific information. The program contains default settings specific to the air district, county, air basin, or State level using approved vehicle emissions factors (EMFAC2014), established methodologies, and the latest survey data.

Construction of the Project must comply with SCAQMD rules. Rule 201, Rule 402, Rule 403, Rule 1113, Rule 1186, and Rule 1403 are mandatory for all construction projects in SCAQMD jurisdiction within the Basin. Based on the CalEEMod model, the emission calculations take into account compliance with Rule 403 by incorporating the watering of exposed surfaces and unpaved roads three times daily, reducing speed on unpaved roads to less than 15 mph, and sweeping loose dirt from access roadways. CalEEMod also incorporates Rule 1113 by reducing the VOC content in the area coatings.

Localized Significance Threshold

The localized significance threshold (LST) methodology uses lookup tables based on site acreage to determine the significance of emissions for CEQA purposes. However, CalEEMod does not allow the user to mitigate construction emissions by directly modifying acreage disturbed. CalEEMod calculates construction emissions (off-road exhaust and fugitive dust) based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment. Based on the input parameters during the most intensive phase during construction, the following is assumed: two excavators operating 8 hours a day would disturb 1 acre, one grader operating 8 hours a day would disturb 0.5 acres, one rubber-tired dozer operating 8 hours a day would disturb 0.5 acres, two scrapers operating 8 hours a day would disturb 1 acre, and two tractors operating 8 hours a day would disturb 2 acres in any given day, for a total maximum of 5 acres disturbed in 1 day.[49]

Health Risk Assessment

An HRA was performed for the Project to evaluate the health risks to nearby receptors associated with TACs associated with the construction emissions at the Project Site. The methodologies and assumptions used for this HRA analysis are consistent with USEPA, CalEPA, CARB, SCAQMD and OEHHA guidance. The

49 CalEEMod, Appendix A: Calculation Details for CalEEMod.

basic components of a risk assessment as identified in the guidance are as follows: (1) hazard identification; (2) exposure assessment; (3) dose response assessment; and (4) risk characterization. The hazard identification process is undertaken to determine what TACs are potentially present in the assessment area, and if so what are the potential health risks. The exposure assessment then quantifies the estimated exposure to the potentially exposed populations from the identified TACs. The exposure assessment includes emissions estimations, dispersion modeling, evaluation of environmental fate, hazards associated with exposure routes and exposure hazard intervals. The dose response assessment determines the potential effects of an exposure (dose) on a specific system within the human body. The risk characterization component of the analysis is a statistical evaluation of the risk to the risk to the potentially exposed populations from the estimated emissions.

For construction activities, the primary hazard is DPM emissions from construction equipment (e.g. excavators, bulldozers, backhoes, graders, etc.) and vehicles associated with construction of the Project. DPM is a complex mixture of chemicals and particulate matter that has been identified by the State of California as a TAC with carcinogenic effects. Although other exposure pathways exist (i.e., ingestion, dermal contact), the inhalation pathway is dominant exposure pathway from DPM for both cancer risk and chronic noncancer health effects.[50] Therefore, only the inhalation cancer and chronic noncancer effects of diesel exhaust are evaluated for the health impacts from construction activities. The SCAQMD and OEHHA have determined that the risk from DPM is only of a concern for cancer and chronic noncancer health effects, and potential acute (short-term) noncancer health effects are not a concern. Therefore, potential acute (short-term) noncancer health effects were not evaluated in the HRA for the construction emissions at the Project Site.

The quantification of DPM emissions requires a DPM emission rate from the construction equipment. The annual average diesel exhaust emissions associated with the diesel equipment used during construction of the Project have been used to evaluate the potential chronic (long-term) cancer and noncancer health impacts at receptors surrounding the Project Site. As there is no acute toxicity factor for DPM, maximum hourly DPM emissions were not forecasted. Dispersion modeling was performed using the Lakes Environmental AERMOD model (Version 9.5.0) to estimate the ground-level DPM concentrations resulting from operation of the construction equipment at the Project Site. The modeling estimated ground-level diesel concentration at receptors distributed at the locations of the potentially exposed receptors, including the receptors listed in **Table 4.2-5**.

50 Office of Environmental Health Hazard Assessment (OEHHA), *The Air Toxics Hot Spots Program: Risk Assessment Guidelines—Guidance for Preparation of Health Risk Assessments* (February 2015), https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

Projects that use State funds would be subject to CEC Section 17213[51] and PRC Section 21151.8,[52] pursuant to Title 5 requirements. The assessment would be required to identify stationary sources (permitted and nonpermitted) in addition to nearby freeways and major roadways within a quarter-mile radius of a proposed new school. Additionally, the assessment would also evaluate impacts from criteria air pollutants from roadways and other sources that are within 500 feet and may have a local impact.

Measures necessary to reduce the potential cancer and noncancer risks to an acceptable level (i.e., below 10 in 1 million or a hazard index of 1) would be required to be implemented. These specified mandatory measures, which could include installation of MERV filters in HVAC systems, would be incorporated into the design and construction of the new school facility. Compliance with CEC Section 17213[53] and PRC Section 21151.8[54] regulations would ensure that the exposure levels for students and staff near stationary sources and freeways and major roadways would be within the acceptable levels and less than the incremental risk thresholds.

Additionally, the HRA protocol requires assessment of criteria air pollutants generated from roadways that exceed an annual average daily traffic count of 100,000 vehicles in urban areas, or 50,000 vehicles in rural areas that are within 500 feet of a project Site.

Operation Emissions

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities of the Project Site. Source emissions would be generated by the consumption of natural gas and landscape maintenance. Mobile emissions would be generated by the motor vehicles traveling to and from the Project Site.

Project-generated, regional area and mobile-source emissions of criteria air pollutants and ozone precursors were also modeled using the CalEEMod computer program. CalEEMod allows land use selections that include project location specifics and trip generation rates. CalEEMod accounts for area-source emissions from the use of natural gas, landscape maintenance equipment, and consumer products and from mobile-source emissions associated with vehicle trip generation.

---

51 California Legislative Information, California Education Code Section 17213, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=EDC&sectionNum=17213.

52 California Legislative Information, California Education Code Section 2115.8, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21151.8.

53 California Department of Education, School Site Selection and Approval Guide (December 28, 2017), https://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp.

54 California Legislative Information, California Education Code Section 2115.8, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21151.8.

The analysis of daily operational emissions associated with the Project have been prepared using the data and methodologies identified in SCAQMD's *CEQA Air Quality Handbook*[55] and current motor vehicle emission factors in CalEEMod. Trip rates for these land uses were obtained from the traffic impact study for the Project (**Appendix O**).

Thresholds of Significance

To assist in determining whether the proposed Project would have a significant effect on the environment, the District finds the proposed Project may be deemed to have a significant impact related to air quality if it would:

Threshold AQ-1: **Conflict with or obstruct implementation of the applicable air quality plan.**

Threshold AQ-2: **Violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

Threshold AQ-3: **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).**

Threshold AQ-4: **Expose sensitive receptors to substantial pollutant concentrations.**

Threshold AQ-5: **Is the boundary of the proposed (school) site within 500 feet of the edge of the closest traffic lane of a freeway or busy traffic corridor? If yes, would the project create an air quality health risk due to the placement of the School.**

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR**.**

Specific Thresholds Utilized

Mass Daily Emissions

The City of Compton uses the SCAQMD-recommended thresholds in its local review of development projects over which the City has jurisdiction. A development that results in either construction-related emissions or operational emissions that exceed specified daily emissions thresholds are considered to have a significant and adverse environmental impact. The emissions thresholds for both construction-

55 SCAQMD, CEQA Air Quality Handbook (November 1993).

related and operational emissions are summarized in **Table 4.2-7: Construction-Related and Operational Emissions Thresholds**.

Table 4.2-7
Construction-Related and Operational Emissions Thresholds

Pollutant	Construction Emissions Thresholds (pounds per day)	Operational Emissions Thresholds (pounds per day)
Reactive Organic Compounds (ROG)	75	55
Nitrogen Dioxide (NO2)	100	55
Carbon Monoxide (CO)	550	550
Sulfur Dioxide (SO2)	150	150
Respirable Particulate Matter (PM10)	150	150
Fine Particulate Matter (PM2.5)	55	55

Source: SCAQMD Air Quality Significance Thresholds (revised March 2015).

Localized Emissions

SCAQMD has identified thresholds to determine the significance of both local air quality impacts and impacts to regional air quality.[56] The localized significance thresholds used in this analysis address whether there are potential impacts to surrounding residents. The LST methodology uses lookup tables based on site acreage to determine significance of emissions. In CalEEMod, the number of pieces of equipment and length of activity determine the maximum amount of acreage disturbed each day. As discussed in Methodology above, the number of assumed pieces of equipment operating each day would total a maximum of 5 acres disturbed in 1 day.

The initial review of potential local impacts involves a determination of whether emissions from the Project would exceed the LST identified by SCAQMD. **Table 4.2-8: South Central LA County LST for 5-Acre Site**, shows the LST for a 5-acre site in South Central LA County (SRA 12) for a sensitive receptor at 25 meters (82 feet). If the emissions exceed the LST then additional analysis is performed to determine if emissions form the Project would result in concentrations that exceed the standards in **Table 4.2-8**.[57]

56 SCAQMD, "Final Localized Significance Threshold Methodology" (June 2003; rev. July 2008), http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.

57 SCAQMD, "Final Localized Significance Methodology."

Table 4.2-8
South Central LA County LST for 5-Acre Site

	LST threshold (pounds/day)	
Pollutant	**Construction**	**Operation**
Nitrogen dioxide (NO2)	98	98
Carbon monoxide (CO)	630	630
Respirable particulate matter (PM10)	13	4
Fine particulate matter (PM2.5)	7	2

Source: SCAQMD, Mass Rate LST Look-up Tables (2009).

Health Risk Assessment

Carcinogenic Chemical Risk

Carcinogenic compounds are not considered to have threshold levels (i.e., dose levels below which there are no risks). As a result, the State of California has established a threshold of 1 in 100,000 (1.0E-05) as level posing no significant risk for exposures to carcinogens regulated under the Safe Drinking Water and Toxic Enforcement Act.[58] This threshold is also consistent with the maximum incremental cancer risk established by the SCAQMD.

Noncarcinogenic Hazards

Under the point estimate approach, adverse health effects are evaluated by comparing the pollutant concentration to its identified Reference Exposure Level (REL).[59] To quantify noncarcinogenic impacts, SCAQMD recommends the hazard index approach was used based on the benchmark dose approach. The hazard index assumes that subthreshold exposures adversely affect a specific organ or organ system (i.e., toxicological endpoint).

With respect to human health, the cardiovascular, central nervous, developmental, and respiratory systems, as well as the skin, are primary target organs for these kinds of emissions. The respiratory endpoint is identified as the only target organ associated with diesel particulate exposure. To calculate the hazard index, the pollutant concentration or dose is divided by its toxicity value and summer for

58 California Legislative Information, Health and Safety Code, div. 20, ch. 6.6, Safe Drinking Water and Toxic Enforcement Act of 1986 (November 4, 1986), http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=20.&title=&part=&chapter=6.6.&article.

59 OEHHA," OEHHA Acute, 8-hour and Chronic Reference Exposure (REL) Summary" (June 2016), https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary.

compounds affecting the same toxicological endpoint. Where the total equals or exceeds one, a health hazard is presumed to exist.

Project Impact Analysis

Threshold AQ-1: Conflict with or obstruct implementation of the applicable air quality plan

Reconstruction of CHS Campus

A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMP. This determination fulfills the CEQA goal in informing decision makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed.

Regional growth projections are used by SCAQMD to forecast future emission levels in the Basin. For Southern California, these regional growth projections are provided by the SCAG and are partially based on land use designations included in city/county general plans. Typically, only large, regionally significant projects have the potential to affect the regional growth projections.

SCAQMD developed regional emissions thresholds, as shown in **Table 4.2-7**, to determine whether a project would contribute to air pollutant violations. If a project exceeds the regional air pollutant thresholds, then it would significantly contribute to air quality violations in the Basin. As shown in **Tables 4.2-9** through **4.2-12**, temporary and long-term regional and localized concentrations would be below the SCAQMD thresholds and, therefore, would not have potential to cause or affect a violation of the ambient air quality standards.

With regard to future growth, SCAG's 2016 RTP/SCS provides population, housing, and employment projections for cities under its jurisdiction.[60] Projects that are consistent with the projections of employment and population forecasts identified in the Growth Management chapter of the 2016 RTP/SCS are considered consistent with the AQMP growth projections because the Growth Management chapter forms the basis of the land use and transportation control portions of the AQMP.

The Project would reconstruct the existing CHS Campus by demolishing the existing CHS Campus and the additional 10 parcels and constructing new, modern buildings, facilities, and athletic fields. Thus, the Project would not be considered growth inducing and, therefore, would not conflict with the AQMP.

60 SCAG, *Final 2016-2040 RTP/SCS* (April 2016), http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf.

Various sustainable building design and energy conservation components would be considered in the design, construction, and operation of the proposed CHS facilities to meet or exceed the 2016 California Title 24 requirements.[61] The proposed Project provides for high-performance building design and added energy conservation measures and alternates to meet a higher goal to enhance the students experience and reduce the annual utility costs for the reconstructed CHS campus.

- The design and placement of the proposed CHS facilities would be optimized for a north–south orientation to maximize the use of natural daylight. External shading would be provided along the south-, east-, and west-oriented windows to allow glare-free daylighting in spaces and reduce cooling loads. Daylighting is optimized by providing high clerestory for a balance of natural daylight.
- Additional sustainable building design features may also include HVAC systems that would consider capital costs, operational costs, and efficiencies to achieve energy efficiency, improved indoor environmental quality, and maximized building life.
- The reconstructed CHS campus would be designed to be solar ready. To meet the Title 24 requirements, at least 15 percent of the available rooftop square footage would be set aside for "solar zones." These solar zones would be at least 10 feet away from a building edge, distanced away from all mechanical equipment screens or other shading features, and no smaller than 25 square feet in area. The structural design of the proposed Project would take these solar zones into consideration to ensure that the extra load of photovoltaic panels is accounted for. The new gymnasium, academic buildings, and performing arts center are currently proposed to include solar zones for the potential installation of rooftop solar panels

These design features would increase the structure's energy efficiency, water efficiency, and overall sustainability. This would be consistent with the SCAG 2016 RTP/SCS and City's Air Quality Element and would not exceed assumptions in the AQMP. In addition, the Project would be subject to compliance by various rules from CARB and SCAQMD listed in the regulatory framework, these include rules for diesel-fueled vehicles, toxic control measures, and construction management procedures such as fugitive dust and architectural coatings.

With compliance with the requirements of the CARB and SCAQMD rules, impacts would be less than significant.

Relocation of District Uses

As part of the Project, the District's Facilities Department and Pupil Services, Enrollment Center, and Special Education offices would be demolished and relocated to a location not on the Project Site. As determined by the District, these existing uses would be accommodated within existing District facilities,

61 California Building Standards Code, 24 California Code of Regulations (CCR).

at Caldwell Elementary School, located at 2300 W. Caldwell Street, and Cesar Chavez Continuation High School located at 12501 N. Wilmington in Compton. The Caldwell Elementary School campus is currently a closed site and is not utilized by students or District staff. Cesar Chavez Continuation High School is currently used by only a few students that attend school at the actual site. Students that do attend at the site, attend once a week for independent study work. Cesar Chavez Continuation High School is currently staffed by six individuals. The relocation of the District uses currently on the Project Site to the Caldwell Elementary School and Cesar Chavez Continuation High School campuses would occur during the spring of 2019.

Upon relocation, the function of these existing District uses would continue similar to existing conditions and are not anticipated to require an increase in operational or staffing capacity. As such, these relocated uses would not conflict with any local or regional plan, including SCAG and the City's Air Quality Element, and therefore would not exceed assumptions in the AQMP.

Impacts would be less than significant.

Threshold AQ-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Reconstruction of CHS Campus

Construction Emissions

The Project includes the demolition of all existing buildings, facilities, and athletic fields for construction the proposed Project. Demolition includes all building and facilities on the existing campus as well all structures on the additional parcel and streets to be acquired.

Construction would take approximately 24 months and would occur through a phase development. The phased development is expected to begin in spring 2021 and be completed by summer 2023. For purposes of categorizing air pollutant emissions, the Project construction activity for the proposed Project is described the following phases: (1) demolition, (2) site preparation, (3) grading, (4) building construction, (5) architectural coating, and (6) paving. Construction of the Project would not interrupt classroom instruction on the campus. However, although the existing high school would have no students and teachers, the daycare center and preschool would be close to construction areas, approximately 50 feet east and 390 feet north, respectively, from the Project Site throughout the 24-month duration of construction activities.

Fugitive dust emissions would result from demolition and construction activities; mobile source emissions would result from the use of haul trucks and on-site construction equipment; and paving operations.

Construction activities would cause short-term emissions of criteria air pollutants. The primary source of NOX, CO, and SOX emissions is the operation of construction equipment. The primary sources of particulate matter (PM10 and PM2.5) emissions include activities that disturb the soil, such as grading and excavation, as well as building demolition and construction. The primary source of VOC emissions is the application of architectural coating and off-gas emissions associated with asphalt paving.

The assessment of construction air quality impacts considers each of these potential sources. Construction emissions can vary substantially from day to day, depending on the level of activity (e.g., construction schedule), the specific type of operation and, for dust, the prevailing weather conditions.

The Project would be subject to regulatory measures (e.g., SCAQMD Rule 201 for a permit to operate, Rule 403 for fugitive dust control, Rule 1113 for architectural coatings, Rule 1403 for new source review, and CARB's Airborne Toxic Control Measures).

The maximum daily emissions for the Project during construction are listed in **Table 4.2-9: Construction Emissions**. The construction-related daily maximum construction emissions (i.e., combined on- and off-site emissions) as shown in **Table 4.2-9**, would not exceed the SCAQMD daily significance thresholds.

With compliance with the CARB and SCAQMD rules, impacts associated with construction emissions would be less than significant impact.

Table 4.2-9
Construction Emissions

Source	VOC	NOx	CO	SOx	PM10	PM2.5
	pounds/day					
2021						
Demolition	1	33	25	<1	8	2
Site Preparation	1	34	23	<1	8	5
Grading	2	51	37	<1	5	3
Building Construction	1	24	18	<1	1	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
2022						
Building Construction	1	24	18	<1	1	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
2023						
Building Construction	1	24	18	<1	1	1
Architectural Coating	28	2	2	<1	<1	<1
Paving	1	20	17	<1	1	1
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

*Source: Refer to Air Quality Modeling Data in **Appendix D,** Sections 3.2 through 3.7.*

Operation Emissions

Operation of a new school on the existing campus and acquisition parcels would result in the generation of vehicle trips and new localized air pollutant emissions from nonmobile sources (i.e., area sources and energy use). Overall, however, it is not anticipated that operation of the reconstructed school and campus school would generate long-term air pollutant emissions that would exceed the SCAQMD regional operation significance thresholds. As schools are typically growth accommodating land uses built to serve the local community, a new school would reduce the overall vehicle miles traveled in the region and thereby reduce mobile-source air pollutant emissions. Furthermore, it is not anticipated that the reconstructed campus would generate a substantial amount of nontransportation sources of emissions.

Operational emissions factor in the removal of air emissions from the existing uses and subsequent operations of the Project once complete. Estimates take into account emissions from architectural

coatings, landscaping equipment, energy use, stationary sources such as buildings or facilities that emit air pollutants, regional source emissions, and on-road fugitive dust.

The estimated mobile, area, energy, waste, and water emissions are based on the development of the Project from vehicle emissions; the various energy uses from operation of the classroom, stadium, and the performing arts center; stationary sources, such as the classrooms; and on-road fugitive dust, such as earthmoving activities or vehicular movement from vehicle. The results are presented in **Table 4.2-10: Operational Emissions** and are compared to the SCAQMD-established operational significance threshold. It is important to note that the reconstruction CHS Campus would improve energy and water conservation and efficiency due to the updated design.

The net increase in operational emissions would not exceed the SCAQMD regional operational significance thresholds. The reconstructed campus would replace existing land uses, and the resulting net emissions would be similar to or lower than the emissions shown, given that student enrollment is anticipated to be less than existing.

In addition, after school events at the performing arts center, stadium, and pool have the potential to increase the operational air pollutant concentrations. However, due to the few number and limited nature of such events, the air quality pollutant concentrations would be similar to those of that of existing concentrations. Therefore, any such increase of operational emissions for these events would be negligible.

Impacts associated with operational emissions would be less than significant.

Relocation of District Uses

As part of the Project, the District's Facilities Department and Pupil/Services/Enrollment Center/Special Education classrooms would be demolished and relocated to a location not on the Project Site. These relocated uses would be demolished as part of the Project and is contained within the construction emissions above.

As the relocated uses would be contained within already existing buildings, construction of new buildings is not warranted. These relocated uses would maintain the same operational uses as the existing and therefore would result in minimal change from their existing operational uses.

Impacts would be less than significant.

Table 4.2-10
Operational Emissions

Source	VOC	NOx	CO	SOx	PM10	PM2.5
	pounds/day					
Reconstructed Campus						
Area	7	<1	<1	<1	<1	<1
Energy	<1	1	1	<1	<1	<1
Mobile	1	4	14	<1	5	1
Total Reconstructed Campus	8	5	15	<1	5	1
Existing School	*10*	*10*	*29*	*<1*	*6*	*2*
Existing Acquisition Parcels	*1*	*4*	*12*	*<1*	*2*	*<1*
Net Total	**-3**	**-9**	**-26**	**<1**	**-3**	**-1**
SCAQMD Threshold	55	55	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

*Source: Refer to Air Quality Modeling Data in **Appendices D8: Summer** and **Winter**, Section 2.2: Overall Operational.*
Note: Water and waste emissions are not included because CalEEMod does not populate these for the summer and winter outputs

Threshold AQ-4: Expose sensitive receptors to substantial pollutant concentrations?

Reconstruction of CHS Campus

Construction

Implementation of the proposed Project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevating those levels. Localized concentrations refer to an amount of pollutant in a volume of air (ppm or µg/m3) and can be correlated to potential health effects. LSTs are the amount of project-related emissions generated at which localized concentrations (ppm or µg/m3) would exceed the AAQS for criteria air pollutants for which the Basin is designated a nonattainment area.

Shown in **Figure 4.2-1**, the nearest sensitive receptors to the Project Site are the single- and multifamily residential units, approximately 50 feet north and east from the Project Site, and the daycare facility 50 feet southeast from the Project Site. As such, the LST analysis uses the distance of 25 meters (82 feet), the shortest distance applicable for a sensitive receptor within this range, and for a Project Site of 5 acres, the largest extent of acres disturbed applicable for a 42-acre site based on the LST methodology.[62]

62 SCAQMD, "Final Localized Significance Methodology.".

The results of the construction LST analysis is provided in **Table 4.2-11: Localized Construction Emissions**. These estimates assume the maximum area that would be disturbed during construction on any given day during construction. As shown in **Table 4.2-11**: maximum localized construction emission for off-site sensitive receptors would not exceed the LST for NOX, CO, PM10, and PM.2.5.

Table 4.2-11
Localized Construction Emissions

	NOx	CO	PM10	PM2.5
Source	**pounds/day**			
Total maximum Project emissions	51	36	8	5
LST threshold	98	630	13	7
Threshold Exceeded?	**No**	**No**	**No**	**No**

*Source: Refer to Air Quality Modeling Data in **Appendices Summer** and **Winter,** Sections 3.2 through 3.7.*

Operation

Operation of schools would not generate substantial quantities of emission from on-site, stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from SCAQMD include industrial land uses, such as chemical processing, and warehousing operations where substantial truck idling could occur on site. Schools do not fall within these categories of uses. While operation of schools would possibly result in the use of standard on-site mechanical equipment, air pollutant emissions generated from operation of this system would be nominal, as shown in **Table 4.2-12: Localized Operational Emissions.**

In addition, after school events at the performing arts center, stadium, and pool have the potential to increase the operational air pollutant concentrations. However, due to the few number and limited nature of such events, the air quality pollutant concentrations would be similar to those of that of existing concentrations. Therefore, any such increase of operational emissions for these events would be negligible.

Impacts from stationary source emissions during operation would be less than significant.

Toxic Air Contaminants

TACs during construction would be from DPM emissions associated with heavy equipment operations during demolition and grading activities. The SCAQMD's methodology for assessing potential health risks from TAC emissions assumes a continuous exposure over a 70-year time frame. It is important to note that the phases requiring the most heavy-duty diesel equipment usage, such as demolition, site

preparation and grading, would last for a much shorter duration (i.e., approximately 5 months). However, a construction HRA was conducted to address toxic air contaminants to nearby sensitive receptors during construction.

Table 4.2-12
Localized Operational Emissions

	NOx	CO	PM10	PM2.5
Source	**pounds/day**			
Total maximum Project emissions	1	1	<1	<1
Total existing Project Site emissions	*1*	*3*	*<1*	*<1*
Net on-site emissions	<1	-2	<1	<1
LST threshold	98	630	4	2
Threshold Exceeded?	**No**	**No**	**No**	**No**

*Source: Refer to Air Quality Modeling Data in **Appendices D8 (Summer)** and **D9 (Winter),** Section 2.2: Overall Operational.*

The Project is not anticipated to use hazardous materials in appreciable quantities. Hazardous substances currently are regulated under the California Accidental Release Prevention (CalARP) Program. The CalARP Program satisfies the requirements of the Federal Risk Management Plan Program and contains additional State requirements. The CalARP Program applies to regulated substances in excess of specific quantity thresholds. The majority of the substances have thresholds in the range of 100 to 10,000 pounds. The residential land uses associated with the Project may contain small, if any, amounts of these hazardous substances in commercial cleaners and other products. However, typical use of these products would not result in quantities at any one location that exceed the thresholds. Moreover, significant amounts of hazardous substances would typically be expected at industrial, manufacturing, and complex water or wastewater treatment land uses and not school uses.

Impacts from toxic air contaminants would be less than significant.

Carcinogenic Chemical Risk

The SCAQMD recommends that projects that could emit or result in the emissions of TACs that exceed the maximum individual cancer risk of 10 in one million would be considered significant and cumulatively considerable. **Table 4.2-13: Maximum Receptor/Carcinogenic Risk,** presents the maximum predicted receptor carcinogenic risk estimates during construction. As shown in **Table 4.2-13**, the maximum

carcinogenic risk estimate would be 8 in 1 million (8.8E-06), below the significance risk threshold of 10 in 1 million (1.0E-06).

Impacts related to carcinogenic chemical risk would be less than significant.

Table 4.2-13
Maximum Receptor/Carcinogenic Risk

	Mass GLC				Carcinogenic Risk			
Source	µg/m³	mg/m³	Weight Fraction	Contaminant	URF (µg/m³)⁻¹	CPF (mg/kg/day)⁻¹	Dose (mg/kg/day⁻¹)	Risk
Construction	6.7E-02	6.7E-05	1	Diesel Particulate	3.0E-04	1.1	5.9E-04	8.8E-06

*Source: Refer to **Appendix D** for Quantification of Carcinogenic Risk worksheet.*
Notes: µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; GLC = ground level concentration; URF = unit risk factor; CPF = chemical or compound cancer potency factor; kg = kilograms.

Noncarcinogenic Hazards

The SCAQMD recommends that projects that could emit or result in the emissions of TACs that exceed the incremental chronic or acute noncancer Hazard Index of 1.0 would be considered significant and cumulatively considerable. **Table 4.2-14: Quantification of Noncarcinogenic Hazards**, presents the REL and corresponding reference dose values used in the evaluation of chronic noncarcinogenic exposure during construction. As shown**,** the hazard index total is less than 1.0 (1.3E-02) and would be within acceptable limits.

Impacts would be less than significant.

Table 4.2-14
Quantification of Noncarcinogenic Hazards

	Mass GLC				Noncarcinogenic Hazards/Toxicological Endpoints		
Source	µg/m³	mg/m³	Weight Fraction	Contaminant	REL (µg/m³)	RfD (mg/kg/day)	RESP
Construction	6.7E-02	6.7E-05	1	Diesel Particulate	5	1.4E-03	1.3E-02

*Source: Refer to **Appendix D** for Quantification of Noncarcinogenic Risk worksheet.*
Notes: µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; GLC = ground level concentration; REL = reference exposure level; RfD = reference dose factor; RESP = Respiratory System.

Relocation of CHS Campus

As part of the Project, the District's Facilities Department and Pupil Services, Enrollment Center, and Special Education offices would be demolished and relocated to a location not on the Project Site.

Given that the relocated uses would be contained within already existing buildings, construction of new buildings is not warranted. Therefore, further construction emissions would not occur.

Impacts would be less than significant.

Threshold AQ-5: Is the boundary of the proposed (school) site within 500 feet of the edge of the closest traffic lane of a freeway or busy traffic corridor? If yes, would the project create an air quality health risk due to the placement of the school.

Reconstruction of CHS Campus

The major arterial roadway within the Project area include W. Alondra Boulevard, which is a four-lane roadway that runs in the east–west direction adjacent to the Project Site. California Education Code Section 17213 states that a busy traffic corridor is defined as having 50,000 or more average daily trips (ADT) in a rural area or 100,000 or more ADT in an urban area.[63]

Based on the Traffic Study traffic turn counts, included in **Appendix O**, there would be a maximum ADT of 20,320 ADT for Rosecrans Avenue, west of Acacia Avenue during the morning peak hour for the Future with Project scenario. Therefore, less than the 50,000 or more ADT in a rural area or 100,000 or more ADT in an urban area. This roadway segment contains the highest roadway ADT in the Project vicinity analyzed in the Traffic Study.[64]

As shown in the Traffic Study, the Project would reduce trips from the existing high school campus. The existing high school would have 6,468 trips, while the reconstruction of the high school would result in 5,075 trips due to a lower student capacity. This would result in 1,393 fewer trips per day and thus fewer vehicle emissions.

Impacts related to air quality health risk due to the reconstruction of the CHS campus would be considered less than significant.

63 California Legislative Information, California Education Code Section 17213, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=EDC&sectionNum=17213.

64 Based on the traffic counts for intersection 9 of the Traffic Study, found in Appendix O for roadway noise shows the ADT.

Localized Carbon Monoxide Hotspots Analysis

Motor vehicles are a primary source of pollutants within the Project vicinity. Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed State and/or federal standards are termed CO "hot spots." Such hot spots are defined as locations where the ambient CO concentrations exceed the State or federal AAQS. CO is produced in greatest quantities from vehicle combustion and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create CO hot spots that exceed the State ambient air quality 1-hour standard of 20 ppm or the 8-hour standard of 9 ppm. The federal levels are less stringent than the State standards. Thus, an exceedance condition would occur based on the State standards prior to exceedance of the federal standard.

Projects that typically worsen traffic conditions at signalized intersections to level of service (LOS) E or F or worsen conditions at intersections that currently operate at LOS E or F, will be analyzed. As discussed in **Section 4.13: Transportation and Traffic**, all 19 of the study intersections are projected to continue to operate at LOS D or better during the morning peak hour because the proposed Project would reduce daily trips to the Project Site. Therefore, the Project would not cause any intersection to operate at LOS E or F, and would not increase delays at any intersection currently operating at LOS E or F.

Given that the 19 study intersections are projected to continue to operate at LOS D or better, this would not result in CO levels higher than the 20 ppm 1-hour standard or the 9 ppm 8-hour CO and further analysis not needed.

Impacts would be less than significant.

Relocation of District Uses

As part of the Project, the District's Facilities Department and Pupil/Services/Enrollment Center/Special Education classrooms would be demolished and relocated to a location not on the Project Site.

The roadway volumes for the existing and the proposed relocated uses would be similar and would therefore not result in a significant increase in volume.

Impacts would be less than significant.

CUMULATIVE IMPACTS

As discussed in **Section 3.0: Environmental Setting**, a number of related development projects are proposed for sites within the City in addition the Project Site. The proposed Project, in combination with these related projects, would increase development in the City. **Table 3.0-2: Related Projects,** in **Section 3.0,** identifies 15 related projects that are planned or are under construction in the City. The related projects primarily reflect infill development within the City, consisting of various commercial, retail, and residential uses.

The Project and the related projects would be required to comply with all CARB and SCAQMD rules for construction and operation of the projects.

Construction

Development of the Project in conjunction with the related projects would result in an increase in construction emissions in developed area of the City. As noted, the Project would comply with all regulatory requirements, including SCAQMD and CARB rules, and the adopted AQMP emissions control measures.

Cumulative air quality impacts from construction of the related projects, based on SCAQMD guidelines, are not analyzed in a manner similar to project-specific air quality impacts. Instead, the SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed utilizing the same significance criteria as those for project-specific impacts.

According to the SCAQMD, individual development projects that generate construction emissions exceeding the SCAQMD-recommended daily regional or localized thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment. In accordance with the SCAQMD methodology, emissions that exceed the regional significance thresholds would cumulatively contribute to the nonattainment designations of the Basin. The Basin is designated nonattainment for O3 and particulate matter (PM10 and PM2.5). Emissions of VOC and NOx are precursors to the formation of O3. In addition, NOX is a precursor to the formation of particulate matter (PM10 and PM2.5). Thus, a large project may cumulatively contribute to the nonattainment designations of the Basin for O3 and particulate matter (PM10 and PM2.5).

As shown in **Table 4.2-9** and **Table 4.2-11**, construction-related daily emissions at the Project Site would not exceed any of the SCAQMD's regional or localized significance thresholds. Thus, the Project's contribution to cumulative construction-related regional emissions would not be cumulatively considerable.

Similar to the Project, the greatest potential for TAC emissions at each related project would involve diesel particulate emissions associated with heavy equipment operations during demolition activities. As noted previously, the HRA showed that carcinogenic and noncarcinogenic hazards would have less than significant impacts.

Construction impacts associated with TACs during construction of the related project would be cumulatively considerable.

Operation

According to the SCAQMD, individual development projects that generate operational emissions, based on the operational land use mix of each property, exceeding the SCAQMD-recommended daily regional or localized thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment. It is not anticipated that the overall operational phase emissions generated by the related projects would exceed the SCAQMD thresholds of significance.

As shown in **Table 4.2-10** and **Table 4.2-12**, operational emissions from the Project would not exceed any of the SCAQMD's regional or localized significance thresholds. Therefore, the Project's and the related projects' contributions to cumulative operational-related regional and localized emissions would not be cumulatively considerable.

With respect to TAC emissions, neither the Project nor any of the related projects would represent a substantial source of TAC emissions, which are typically associated with large-scale industrial, manufacturing, and transportation hub facilities. SCAQMD has adopted numerous rules that specifically address TAC emissions, such as Rule 1401.[65] These rules have resulted in and will continue to result in substantial Basin-wide TAC emissions reductions.

The Project and related projects would be consistent with CARB's Land Use Guidelines and each of SCAQMD's rules discussed above in Regulatory Framework. As such, cumulative TAC emissions during long-term operations would be less than significant. In addition, the Project would not result in any substantial sources of TACs that have been identified by CARB's Air Quality and Land Use Guidelines.[66]

Impacts associated the cumulative projects would not be cumulatively considerable.

---

65 SCAQMD, "Rule 1401: New Source Review of Toxic Air Contaminants" (amended September 1, 2017), https://avaqmd.ca.gov/files/8e1294bb5/AV1401.pdf.

66 CARB, *Air Quality and Land Use Handbook: A Community Health Perspective*.

MITIGATION MEASURES

No mitigation is required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Air quality impacts would be less than significant.