
IV. ENVIRONMENTAL IMPACT ANALYSIS

C. AIR QUALITY

INTRODUCTION

The information and analysis in this section is based primarily on the following (refer to Appendix C):

- *Air Quality Technical Modeling Results, DKA Planning, January 2017.*

ENVIRONMENTAL SETTING

Pollutants and Effects

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards for outdoor concentrations. The federal and state standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include: carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter 2.5 microns or less in diameter (PM_{2.5}), particulate matter ten microns or less in diameter (PM₁₀), and lead (Pb). These pollutants are discussed below.

- *Carbon Monoxide (CO)* is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. It is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, automobile exhaust accounts for the majority of emissions. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient concentrations generally follow the spatial and temporal distributions of vehicular traffic. Concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February.¹ The highest concentrations occur during the colder months of the year when inversion conditions are more frequent. CO is a health concern because it competes with oxygen, often replacing it in the blood and reducing the blood's ability to transport oxygen to vital organs. Excess CO exposure can lead to dizziness, fatigue, and impair central nervous system functions.
- *Ozone (O₃)* is a colorless gas that is formed in the atmosphere when reactive organic gases (ROG) and nitrogen oxides (NO_x) react in the presence of ultraviolet sunlight. O₃ is not a primary pollutant; rather, it is a secondary pollutant formed by complex interactions of two pollutants

¹ *Inversion is an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air.*

directly emitted into the atmosphere. The primary sources of ROG and NO_x, the components of O₃, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O₃ formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile. Short-term exposure (lasting for a few hours) to O₃ at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

- *Nitrogen Dioxide (NO₂)* like O₃, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO₂ are collectively referred to as NO_x and are major contributors to O₃ formation. NO₂ also contributes to the formation of PM₁₀. High concentrations of NO₂ can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase of bronchitis in children (2-3 years old) has been observed at concentrations below 0.3 ppm.
- *Sulfur Dioxide (SO₂)* is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO₂ are coal and oil used in power plants and industries. Generally, the highest levels of SO₂ are found near large industrial complexes. In recent years, SO₂ concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO₂ and limits on the sulfur content of fuels. SO₂ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO₂ can also yellow plant leaves and erode iron and steel.
- *Particulate Matter (PM)* consists of small liquid and solid particles floating in the air, including smoke, soot, dust, salts, acids, and metals and can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Fine particulate matter, or PM_{2.5}, is roughly 1/28 the diameter of a human hair and results from fuel combustion (e.g. motor vehicles, power generation, industrial facilities), residential fireplaces, and wood stoves. In addition, PM_{2.5} can be formed in the atmosphere from gases such as SO₂, NO_x, and VOC. Inhalable particulate matter, or PM₁₀, is about 1/7 the thickness of a human hair. Major sources of PM₁₀ include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

PM_{2.5} and PM₁₀ pose a greater health risk than larger-size particles. When inhaled, they can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM_{2.5} and PM₁₀ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small

particles of substances, such as lead, sulfates, and nitrates can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body. These substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas PM₁₀ tends to collect in the upper portion of the respiratory system, PM_{2.5} is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

- *Lead (Pb)* in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturers of batteries, paint, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities have become lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

- *Toxic Air Contaminants (TAC)* are airborne pollutants that may increase a person's risk of developing cancer or other serious health effects. TACs include over 700 chemical compounds that are identified by State and federal agencies based on a review of available scientific evidence. In California, TACs are identified through a two-step process established in 1983 that includes risk identification and risk management.

Regulatory Setting

Federal

United States Environmental Protection Agency (the "USEPA"). The USEPA is responsible for enforcing the Federal Clean Air Act (the "CAA"), the legislation that governs air quality in the United States. The USEPA is also responsible for establishing the National Ambient Air Quality Standards (the "NAAQS"). The NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. It has jurisdiction over emission sources outside State waters (e.g., beyond the outer continental shelf) and establishes emission standards, including those for

vehicles sold in States other than California, where automobiles must meet stricter emission standards set by the State.

As required by the CAA, the NAAQS have been established for seven major air pollutants: CO, NO₂, O₃, PM_{2.5}, PM₁₀, SO₂, and Pb. The CAA requires the USEPA to designate areas as attainment, nonattainment, or maintenance for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized on Table IV.C-1. The USEPA has classified the Los Angeles County portion of the South Coast Air Basin as nonattainment for O₃ and PM_{2.5}, attainment for PM₁₀, and attainment/unclassified for CO and NO₂.

State

California Air Resources Board (CARB). In addition to being subject to the requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (the “CCAA”). CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for administering the CCAA and establishing the California Ambient Air Quality Standards (the “CAAQS”). The CCAA, as amended in 1992, requires all air districts in the State to achieve and maintain the CAAQS, which are generally more stringent than the federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

CARB has broad authority to regulate mobile air pollution sources, such as motor vehicles. It is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels. The State standards are summarized in Table IV.C-1.

The CCAA requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard and are not used as a basis for designating areas as nonattainment.

**Table IV.C-1
State and National Ambient Air Quality Standards and Attainment Status
for the South Coast Air Basin**

Pollutant	Averaging Period	California		Federal	
		Standards	Attainment Status	Standards	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm (180 µg/m ³)	Nonattainment	--	--
	8-hour	0.070 ppm (137 µg/m ³)	/a/	0.070 ppm (137 µg/m ³)	Nonattainment
Respirable Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	Nonattainment	150 µg/m ³	Attainment
	Annual Arithmetic Mean	20 µg/m ³	Nonattainment	--	--
Fine Particulate Matter (PM _{2.5})	24-hour	--	--	35 µg/m ³	Nonattainment
	Annual Arithmetic Mean	12 µg/m ³	Nonattainment	12 µg/m ³	Nonattainment
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Maintenance
	1-hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Maintenance
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Attainment	53 ppb (100 µg/m ³)	Unclassified/ Attainment
	1-hour	0.18 ppm (338 µg/m ³)	Attainment	100 ppb (188 µg/m ³)	Unclassified/ Attainment
Sulfur Dioxide (SO ₂)	24-hour	0.04 ppm (105 µg/m ³)	Attainment	--	Attainment
	1-hour	0.25 ppm (655 µg/m ³)	Attainment	75 ppb (196 µg/m ³)	Attainment
Lead (Pb)	30-day average	1.5 µg/m ³	Attainment	--	--
	Calendar Quarter	--	--	0.15 µg/m ³	Nonattainment

/a/ CARB has not determined 8-hour O₃ attainment status.
Source: California Air Resources Board, Ambient Air Quality Standards, and attainment status, accessed March 14, 2017 (www.arb.ca.gov/desig/adm/adm.htm)

Local

South Coast Air Quality Management District (the "SCAQMD")

The 1977 Lewis Air Quality Management Act merged four air pollution control districts to create the SCAQMD to coordinate air quality planning efforts throughout Southern California. It is responsible for

monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain State and federal ambient air quality standards. Programs include air quality rules and regulations that regulate stationary sources, area sources, point sources, and certain mobile source emissions. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

The SCAQMD monitors air quality over its jurisdiction of 10,743 square miles, including the South Coast Air Basin, which covers 6,745 square miles and is bounded by the Pacific Ocean to the west, the San Gabriel, San Bernardino and San Jacinto mountains to the north and east, and San Diego County to the south. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The SCAQMD also regulates the Riverside County portion of the Salton Sea Air Basin and Mojave Desert Air Basin.

All areas designated as nonattainment under the CCAA are required to prepare plans showing how they will meet the air quality standards. The SCAQMD regularly prepares an Air Quality Management Plan (AQMP) to address CAA and CCAA requirements by identifying policies and control measures. On December 7, 2012, the SCAQMD adopted its 2012 AQMP (the “AQMP”), which is now the legally enforceable plan for meeting the 24-hour PM_{2.5} strategy standard. In October 2016, the SCAQMD’s released its revised Draft 2016 AQMP, which proposed strategies to meet the NAAQS for the 8-hour ozone standard by 2032, the annual PM_{2.5} standard by 2021-2025, the 1-hour ozone standard by 2023, and the 24-hour PM_{2.5} standard by 2019. In its role as the local air quality regulatory agency, the SCAQMD also provides guidance on how environmental analyses should be prepared. This includes recommended thresholds of significance for evaluating air quality impacts.

The Southern California Association of Governments (SCAG) assists in air quality planning efforts by preparing the transportation portion of the AQMP through the adoption of its Regional Transportation Plan (RTP). This includes the preparation of a Sustainable Communities Strategy (SCS) that responds to planning requirements of SB 375 and demonstrates the region’s ability to attain greenhouse gas reduction targets set forth in State law. In April 2016, SCAG adopted its 2016-2040 RTP, a plan to invest \$556.5 billion in transportation systems over a six-county region.

City of La Cañada Flintridge

The City of La Cañada Flintridge’s (LCF) General Plan includes an Air Quality Element that provides a policy framework governing air quality planning within LCF. Adopted in January 2013, the Element includes six goals, 19 objectives, and numerous policies that help define how LCF will achieve its clean air vision. These include the following:

Goal 1: Improve air quality and reduce GHG emissions locally and within the Basin through implementation of land use planning and circulation infrastructure policies and programs that foster sustainable, compact, multi-modal oriented development.

Objective 1.1: Promote land use planning that provides for efficient distribution of land uses and development regulations to achieve reductions in vehicular trips.

Policy 1.1.1: Implement the DVSP to preserve and enhance a small-scale pedestrian-oriented atmosphere with a village character.

Policy 1.1.2: Implement pedestrian and transit-oriented development guidelines and standards proposed in the Land Use Element (see Land Use Element Goals 2 and 3 and supporting objectives and policies) to reduce reliance on passenger vehicles, such as proximity to transit, pedestrian and bicycle facilities, preferential parking for low- /zero-emission vehicles and car- and van-poolers, and energy-conserving buildings.

Policy 1.1.3: Promote commercial/residential mixed use at appropriate locations along Foothill Boulevard, as per the DVSP and new mixed use land use designations in the Land Use Element.

Policy 1.1.4: Promote senior and multi-family housing within walking distance of retail and commercial services.

Policy 1.1.5: Preserve open space within LCF to minimize sprawl and provide GHG “sinks” (natural or human-made reservoirs that absorb and store more GHG from the atmosphere than they release).

Policy 1.1.6: Ensure that new developments implement air quality mitigation measures, such as ventilation systems, adequate buffers, and other pollution reduction measures and carbon sequestration sinks, especially those that are located near existing sensitive receptors.

Policy 1.1.7: Discourage the location of new, or expansion of existing, sensitive receptor land uses adjacent to I-210.

Policy 1.1.8: Encourage site plan designs to provide appropriate set-backs from I-210 and SR-2.

Policy 1.1.9: Encourage a variety of businesses to locate in LCF, including commercial/professional office uses and “clean,” high-technology businesses that provide high-skill/high-wage job opportunities.

Policy 1.1.10: Encourage telecommuting options with new and existing employers through project review and incentives, as appropriate.

Objective 1.2: Reduce air pollution and GHG emissions by proper planning for, and implementation of, LCF’s circulation infrastructure.

Policy 1.2.1: Implement traffic calming techniques and changes to sidewalk and roadway configurations within the DVSP, and implement them along other parts of Foothill Boulevard, to

reduce the speed of traffic along Foothill Boulevard, to increase pedestrian crossing opportunities on Foothill Boulevard, and to increase the ease and convenience of crossing the roadway by reducing the walking distance across the streets.

Policy 1.2.2: Expand the use of traffic calming techniques and changes to sidewalk and roadway configurations identified in the DVSP along other parts of Foothill Boulevard to enhance a pedestrian-oriented environment.

Policy 1.2.3: Promote efficient use of the street system by making improvements, such as coordination of signal time and other intersection improvements, to improve circulation patterns and flow of traffic in LCF.

Policy 1.2.4: Implement the Bicycle Transportation Plan to support and encourage bicycle use as an alternative to passenger vehicle transportation.

Policy 1.2.5: Implement the recommendations of the Parking Study for the DVSP to locate parking appropriately to encourage pedestrian movement.

GOAL 2: Improve air quality and reduce GHG emissions locally and within the Basin by reducing use of passenger vehicles.

Objective 2.1: Reduce the amount of vehicular emissions by promoting alternative modes of transportation and transportation demand management strategies.

Policy 2.1.1: Pursue opportunities to establish a pilot program for an integrated shuttle system to serve school trips and other community needs with a system of vans or small buses.

Policy 2.1.2: Evaluate expansion of local and regional transit services to reduce dependence on passenger vehicles.

Policy 2.1.3: Enhance connections to the Metro Gold Line.

Policy 2.1.4: Promote programs that require special event centers, such as Descanso Gardens and Lanterman Auditorium, to provide transit inducements to their patrons for overall trip reductions.

Policy 2.1.5: Encourage the use of alternative transportation modes such as bicycles for school and employment-related trips.

Objective 2.2: Encourage local employers and businesses to implement policies and programs that reduce their employees' dependence on single-passenger vehicles for travel to and from work.

Policy 2.2.1: Continue to cooperate with the La Cañada Unified School District to explore opportunities for establishing trip-reduction programs and guidelines for schools. These programs may include evaluating the potential use of Prop-A funds for establishing bus service and trip-reduction programs for the school district or school-oriented trips, such as after-school programs for youth; and/or establishing fixed-route bus routes to serve school sites and residential areas by LCF and/or the school district.

Policy 2.2.2: Encourage employers and businesses to implement transportation demand management strategies, such as telecommuting, ridesharing, work schedule changes (including flex time, compressed work week, staggered work schedule, etc.), and employer-based transportation programs (including employer-subsidized bus passes, guaranteed ride home programs, and vanpool programs).

Policy 2.2.3: Support voluntary, employer-based trip reduction programs, including:

- a. providing assistance to regional and local ridesharing organizations;
- b. advocating for legislation to maintain and expand incentives for employer ridesharing programs;
- c. requiring the development of Transportation Management Associations for large employers and commercial complexes; and
- d. providing public recognition of effective programs through awards, top ten lists, and other mechanisms.

GOAL 3: Reduce air pollution and GHG emissions through conservation activities, policies and programs, regulations, and use of technology.

Objective 3.1: Reduce the amount of fugitive dust emitted into the atmosphere.

Policy 3.1.1: Develop and implement plans to minimize dust from areas within LCF that are prone to soil erosion from wind.

Policy 3.1.2: Require stabilization of land disturbed as a result of construction projects, including short-term methods during construction (e.g., watering active construction areas, covering open stockpiles, applying non-toxic soil stabilizers on unpaved access roads and temporary parking areas) and permanent methods post-construction (e.g., vegetation or revegetation, installation of hardscape, etc.).

Objective 3.2: Reduce air pollution and GHG emissions generated by local employers and businesses through policies that assist them in meeting regulations while cultivating a positive business climate.

Policy 3.2.1: Review all air quality regulations to determine whether such regulations have the potential to adversely affect the predominantly small local businesses.

Policy 3.2.2: Refer businesses to sources of assistance for compliance with air quality requirements, including utility companies and SCAQMD.

Policy 3.2.3: Promote an employee work force for local employers that draws from local residents.

Objective 3.3: Reduce air pollution and GHG emissions through new emission control technologies, increased energy efficiency, and use of renewable energy.

Policy 3.3.1: Support and promote the use of low- and zero-emission vehicles (LEV and ZEV), and alternative fuels, and other measures to directly reduce emissions from motor vehicles, including:

- a. developing the necessary infrastructure to encourage the use of low- and zero-emissions vehicles and clean alternative fuels, such as development of electric vehicle charging facilities and conveniently located alternative fueling stations;
- b. encouraging new construction to include vehicle access to properly wired outdoor receptacles to accommodate ZEV and/or plug in electric hybrids (PHEV); and
- c. encouraging employers and businesses that have fleet vehicles to purchase vehicles that achieve the lowest emissions possible, using a mix of alternate fuels, partial zero emissions vehicle (PZEV) or better fleet mixes.

Policy 3.3.2: Develop and implement a plan to reduce gasoline fuel consumption in each of four light-duty vehicle categories by no less than 5 percent, relative to fleet size, by 2012 (using 2006 as a baseline).

Policy 3.3.3: Continue to implement the 20% Renewable Energy Goal, which established the goal for adding at least 20 percent of renewable energy (including photovoltaic solar panels, solar thermal water heating panels, wind generators, and other renewable technologies) for LCF government operations by 2017.

Policy 3.3.4: Develop and adopt an Urban Heat Island Mitigation policy or program that includes the use of alternative materials for roads and roofing, the planting of shade trees over parking lots on public and private property, and other land use techniques to combat urban heat island effects.

Policy 3.3.5: Continue to implement LCF's Preservation, Protection, and Removal of Trees Ordinance (Chapter 4.26 of the LCF Municipal Code).

Objective 3.4: Reduce air pollution and GHG emissions through energy conservation.

Policy 3.4.1: Conduct energy audits at municipal facilities to identify areas where energy efficiency can be increased, and encourage owners and/or operators of other facilities to do the same.

Policy 3.4.2: Purchase energy efficient products that either meet Energy Star® specifications or are in the upper 25 percent of energy efficiency standards, and encourage residents and businesses to do the same.

Objective 3.5: Reduce air pollution and GHG emissions through waste reduction, diversion of solid waste from landfill operations, and recycling.

Policy 3.5.1: Continue to participate in enhancement and expansion of the existing area-wide hazardous waste collection programs.

Policy 3.5.2: Maintain efforts to reduce municipal use of hazardous materials and ozone-depleting compounds.

Policy 3.5.3: Continue LCF's mandatory green waste collection and recycling program for all single-family residences.

Policy 3.5.4: Consider adopting a mandatory green waste collection program for multi-family residences and commercial operations.

Policy 3.5.5: Adopt a recycling program for multi-family residences and commercial operations pursuant to the Mandatory Commercial Recycling Measure being developed pursuant to the Scoping Plan adopted by the ARB to implement the AB 32.

Policy 3.5.6: Continue to implement LCF's Recycling and Diversion of Construction and Demolition Debris Ordinance (Chapter 9.14 of the LCF Municipal Code) to reduce the amount of GHG emissions associated with the disposal of solid waste into landfills

Policy 3.5.7: Promote diversion of reusable furniture, appliances, building materials, clothing, household and other items to local reuse enterprises such as thrift stores, Habitat for Humanity ReStore, Goodwill, Salvation Army, and the California Materials Exchange (CalMAX).

Policy 3.5.8: Encourage the community to produce less waste by reducing, reusing, and recycling and to purchase reusable and recyclable products and products made from recycled materials.

Policy 3.5.9: Consider adopting a program to increase asphalt recycling and the use of recycled asphalt and cement, including:

- a. requiring recycled asphalt pavement (RAP) for streets and roads;
- b. requiring RAP for community and commercial parking lots, where feasible;
- c. encouraging schools and public agencies to use RAP for parking lots;
- d. for City-sponsored projects, requiring 100 percent in-place recycling of recovered asphalt concrete and Portland cement, where feasible; and
- e. considering modification of LCF's Construction and Demolition Debris Ordinance to increase the minimum diversion rate for asphalt and concrete.

Policy 3.5.10: Continue to work closely with solid waste disposal companies in providing trash pick-up services, and reduce the per capita production of solid waste as defined in LCF's Source Reduction and Recycling Element.

Policy 3.5.11: Continue to comply with the Integrated Waste Management Act by maintaining and implementing an up-to-date Source Reduction and Recycling Element and Non-Disposal Facility Element.

Policy 3.5.12: Seek public input in the development of solid waste management programs as needed.

GOAL 4: Reduce GHG emissions from all activities within LCF boundaries to support the State's efforts under AB 32 and to mitigate the impact of climate change.

Objective 4.1: By 2020, reduce GHG emissions from within LCF's boundaries to a level 15 percent less than the level that would otherwise occur if all activities continued under a "business as usual" scenario.

Policy 4.1.1: Prepare a Community Climate Action Plan (CCAP), in collaboration with the stakeholders from the community at large, which will include measures to incentivize and support reductions in GHG emissions from community activities, and which will seek to reduce emissions by at least 15 percent by 2020 compared to the 2007 baseline community emissions inventory (including any reductions required by the ARB under AB 32).

Policy 4.1.2: Establish a Municipal Climate Action Plan (MCAP), which will include measures to reduce GHG emissions from municipal activities by at least 15 percent by 2020 compared to the 2007 baseline municipal emissions inventory (including any reductions required by the ARB under AB 32).

Policy 4.1.3: Update LCF's GHG emissions inventories, which include emissions from all sectors within LCF, as necessary to incorporate improved methods, better data, and more accurate tools and methods, and to assess progress.

GOAL 5: Reduce GHG emissions from municipal (City-owned) facilities and operations, and by purchasing goods and services that embody or create fewer GHG emissions.

Objective 5.1: Enhance the energy efficiency of City facilities.

Policy 5.1.1: Prepare and implement a comprehensive plan to improve energy efficiency of municipal facilities, including:

- a. conducting energy audits for all municipal facilities;
- b. retrofitting facilities for energy efficiency where feasible and when remodeling or replacing components, including increasing insulation, and installing green or reflective roofs and low-emissive window glass;
- c. implementing an energy tracking and management system;
- d. installing energy-efficient exit signs, street signs, and traffic lighting;
- e. installing energy-efficient lighting retrofits and occupancy sensors, and instituting a "lights out at night" policy;
- f. retrofitting heating and cooling systems to optimize efficiency (e.g., replace chillers, boilers, fans, pumps, belts, etc.); installing Energy Star appliances and energy-efficient vending machines;
- h. improving efficiency of water pumping and use at municipal facilities, including a schedule to replace or retrofit system components with high-efficiency units (i.e., ultra-low-flow toilets, fixtures, etc.);
- i. providing chilled, filtered water at water fountains and taps in lieu of bottled water;
- j. installing a central irrigation control system and time its operation for off-peak use; and

- k. adopting an accelerated replacement schedule for energy inefficient systems and components.

Policy 5.1.2: Require that any newly constructed, purchased, or leased municipal space meet one or more of the following minimum standards as appropriate, including:

- a. requiring buildings to meet LEED criteria established by the U.S. Green Building Council;
- b. incorporating passive solar design features in new buildings, including daylighting and passive solar heating;
- c. retrofitting existing buildings to meet standards under Title 24 of the California Building Energy Code, or to achieve a higher performance standard as established by LCF/County; and
- d. retrofitting existing buildings to decrease heat gain from non-roof impervious surfaces with cool paving, landscaping, and other techniques.

Policy 5.1.3: Ensure that staff receives appropriate training and support to implement objectives and policies to reduce GHG emissions, including:

- a. providing energy efficiency training to design, engineering, building operations, and maintenance staff; and
- b. providing information on energy use and management, including data from the tracking and management system, to managers and others making decisions that influence energy use.

Policy 5.1.4: Create a Capital Reinvestment Fund to provide capital for future energy efficiency improvements from ongoing energy efficiency savings.

Objective 5.2: Implement measures to reduce City employee vehicle trips and to mitigate emissions impacts from municipal travel.

Policy 5.2.1: Implement a program to reduce vehicle trips by City employees, including:

- a. providing incentives and infrastructure for vanpooling and carpooling, such as pool vehicles, preferred parking, and a website or bulletin board to facilitate ride-sharing;
- b. providing subsidized passes for mass transit;

- c. offering compressed work hours, off-peak work hours, and telecommuting, where appropriate; an
- d. offering a guaranteed ride home for employees who use alternative modes of transportation to commute.

Objective 5.3: Manage LCF's stock of vegetation to reduce GHG emissions.

Policy 5.3.1: Conduct a comprehensive inventory and analysis of the urban forest, and conduct tree maintenance consistent with best management practices.

Policy 5.3.2: Evaluate existing landscaping and options to convert reflective and impervious surfaces to landscaping, and install or replace vegetation with drought-tolerant, low-maintenance native species or edible landscaping that can also provide shade and reduce heat-island effects.

Objective 5.4: Use LCF's purchasing power to promote reductions in GHG emissions by the suppliers of its goods and services.

Policy 5.4.1: Adopt purchasing practices and standards to support reductions in GHG emissions, including preferences for energy-efficient office equipment and the use of recycled materials and manufacturers that have implemented green management practices.

Policy 5.4.2: Establish bidding standards and contracting practices that encourage GHG emissions reductions, including preferences or points for the use of low or zero emission vehicles and equipment, recycled materials, and provider implementation of other green management practices.

Objective 5.5: Implement measures to reduce municipal waste generation.

Policy 5.5.1: Audit facilities to identify opportunities to reduce waste generation, increase material recovery, and increase beneficial use of organic material. Where practical, implement the recommendations of the audits.

GOAL 6: Improve air quality and reduce GHG emissions and the health risks associated with air pollution through regional coordination, cooperation, advocacy, public education, and monitoring of air quality conditions, legislation, and policies.

Objective 6.1: Work with local, regional, and State agencies to reduce vehicular and GHG emissions from freeways.

Policy 6.1.1: Continue to oppose the extension of the I-710 Freeway due to the increase in automobile and truck traffic on the I-210 Freeway that would result from the proposed extension,

and the negative health risks the extension poses for La Cañada Flintridge and surrounding communities due to higher vehicular pollutant levels.

Policy 6.1.2: Continue to monitor air quality impacts on the health of LCF from vehicular emissions associated with freeway traffic.

Policy 6.1.3: Work with regional agencies to develop or expand ridesharing programs, facilities, various modes of public transit, and Park-and-Ride facilities.

Policy 6.1.4: Coordinate with local and regional transportation agencies and cities to plan and construct new multi-modal transportation facilities on the basis of this General Plan that are consistent throughout the neighboring jurisdictions.

Objective 6.2: Stay current regarding research and regulations related to air quality and GHG emissions reductions.

Policy 6.2.1: Monitor changes in State regulations related to air quality and climate change, including implementation of AB 32 and SB 375, and develop policies and programs and update local regulations as appropriate.

Policy 6.2.2: Evaluate and disclose in CEQA documents the contribution new projects could have on climate change and require mitigation measures as appropriate.

Objective 6.3: Coordinate with local, regional, and State agencies to develop and/or implement effective mitigation measures to improve air quality and reduce GHG emissions to implement State and federal laws.

Policy 6.3.1: Continue to participate in the Arroyo-Verdugo Subregional Council of Governments to coordinate infrastructure policies and programs with adjacent and nearby cities to develop a needed area-wide transportation infrastructure.

Policy 6.3.2: Utilize Proposition A (1/2-cent sales tax) funds in concert with other cities to maximize air quality goals for developing local transportation programs that may include bicycle facilities, a school bus program, and/or shuttle service or community bus program.

Policy 6.3.3: Ensure that new and innovative air quality and GHG emissions reduction policies established by any jurisdiction are communicated to other jurisdictions through the Arroyo-Verdugo Subregional Council of Governments, San Gabriel Valley Council of Governments (SGVCOG), and other area-wide task forces.

Policy 6.3.4: Cooperate with other jurisdictions in the Arroyo-Verdugo Subregion and SGVCOG to further the strategies outlined in the SGVCOG Air Quality Plan and/or in the development of a regional or subregional sustainable communities strategy (SCS) for the RTP.

Policy 6.3.5: Encourage the County of Los Angeles to establish programs that support the Arroyo-Verdugo Subregion and SGVCOG air quality policies and apply such policies to the unincorporated pockets within the Arroyo-Verdugo Subregion and the SGVCOG for consistency with local programs.

Policy 6.3.6: Monitor the SCAQMD and the ARB in their development of improved ambient air quality and GHG monitoring capabilities and establishment of standards, thresholds, and rules to address, and where necessary mitigate, the air quality impacts of new development.

Policy 6.3.7: Identify and pursue funding opportunities to develop and implement mitigation activities.

Objective 6.4: Increase public awareness of air quality and climate change issues through public outreach and education, including publicizing the importance of reducing GHG emissions and steps community members can take to reduce their individual impacts.

Policy 6.4.1: Promote programs that educate the public about regional and local air quality issues, opportunities, and solutions.

Policy 6.4.2: Facilitate public compliance with regional air quality regulation through improved public education programs and curricula.

Policy 6.4.3: Encourage greater public participation in voluntary efforts to reduce air pollution and GHG emissions through local public education programs, speaker's bureaus, and other measures.

Air Pollution Climatology

The Project site is located within the Los Angeles County non-desert portion of the South Coast Air Basin. The Basin is in an area of high air pollution potential due to its climate and topography. The region lies in the semi-permanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The Basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of its perimeter. The mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region.

The Basin experiences frequent temperature inversions that help to form smog. While temperature typically decreases with height, it actually increases under inversion conditions as altitude increases, thereby preventing air close to the ground from mixing with the air above. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere. This interaction creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO₂ react under strong sunlight, creating smog. Light daytime winds, predominantly from the west, further aggravate the condition by driving air pollutants inland toward the mountains.

Air quality problems also occur during the fall and winter, when CO and NO₂ emissions tend to be higher. CO concentrations are generally worse in the morning and late evening (around 10:00 p.m.) when temperatures are cooler. High CO levels during the late evenings result from stagnant atmospheric conditions trapping CO. Since CO emissions are produced almost entirely from automobiles; the highest CO concentrations in the Basin are associated with heavy traffic. NO₂ concentrations are also generally higher during fall and winter days.

Air Monitoring Data

The SCAQMD monitors air quality conditions at 45 locations throughout the Basin. The Project site is located in SCAQMD's West San Gabriel Valley receptor area 8. Historical data from the area was used to characterize existing conditions in the vicinity of the Project area. Table IV-C-2 shows pollutant levels, State and federal standards, and the number of exceedances recorded in the area from 2013 through 2015. The one-hour State standard for O₃ was exceeded 20 times while the federal standard was exceeded 14 times during this three-year period. Meanwhile, the daily State standard for PM_{2.5} was exceeded three times. CO and NO₂ levels did not exceed the CAAQS from 2013 to 2015.

**Table IV.C-2
2013-2015 Ambient Air Quality Data in Project Site Vicinity**

Pollutant	Pollutant Concentration & Standards	West San Gabriel Valley		
		2013	2014	2015
Ozone	Maximum 1-hour Concentration (ppm)	0.099	0.124	0.111
	Days > 0.09 ppm (State 1-hour standard)	2	6	12
	Days > 0.075 ppm (Federal 8-hour standard)	0	7	7
Carbon Monoxide	Maximum 1-hour Concentration (ppm)	N/A	3.0	2.6
	Days > 20 ppm (State 1-hour standard)	N/A	0	0
	Maximum 8-hour Concentration (ppm)	1.7	1.8	1.6
	Days > 9.0 ppm (State 8-hour standard)	0	0	0
Nitrogen Dioxide	Maximum 1-hour Concentration (ppm)	0.0667	0.0752	0.0749
	Days > 0.18 ppm (State 1-hour standard)	0	0	0
PM ₁₀	Maximum 24-hour Concentration (µg/m ³)	N/A	N/A	N/A
	Days > 50 µg/m ³ (State 24-hour standard)	N/A	N/A	N/A
PM _{2.5}	Maximum 24-hour Concentration (µg/m ³)	25.7	38.8	48.5
	Days > 35 µg/m ³ (Federal 24-hour standard)	0	1	2
Sulfur Dioxide	Maximum 24-hour Concentration (ppm)	N/A	N/A	N/A
	Days > 0.04 ppm (State 24-hour standard)	N/A	N/A	N/A
Source: SCAQMD annual monitoring data (www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year) accessed January 6, 2017.				
N/A: Not available at this monitoring station.				

Existing Site Emissions

The Project site includes a college preparatory high school that accommodates up to 425 students. Emissions associated with existing uses at the Project site are shown on Table IV.C-3.

**Table IV.C-3
Estimated Existing Daily Emissions at Project Site**

Emission Source	Pounds per Day					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Sources	5	<1	<1	<1	<1	<1
Energy Sources	<1	1	1	<1	<1	<1
Mobile Sources	2	10	34	<1	7	2
Total Operations	7	11	35	<1	7	2
Source: DKA Planning, 2017 based on CalEEMod 2016.3.1 model runs.						

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. ARB has identified the following typical groups who are most likely to be affected by air pollution: children under 14; the elderly over 65 years of age; athletes; and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

Sensitive receptors in the vicinity of the Project site consist mostly of single-family residences, including but not limited to the following:

- Single-family residence, 400 Palmerstone Drive; 45 feet west of the Project site.
- Single-family residence, 450 Euston Place; 45 feet east of the Project site.
- Single-family residences, Via Serrano; as close as 390 feet east of the Project site.
- Single-family residence, 390 St. Katherine Drive; 710 feet east of the Project site.
- Single-family residence, 525 Bramley Way; 40 feet east of the Project site.
- Single-family residence, 500 St. Katherine Drive; as close as 100 feet south of the Project site.
- Single-family residences, 500 block of Palmerstone Drive; 275 feet west of the Project site.

ENVIRONMENTAL IMPACTS

Thresholds of Significance

Appendix G of the CEQA Guidelines

In accordance Appendix G of the *CEQA Guidelines*, a project could have a significant air quality impact if the project would cause any of the following to occur:

- (a) Conflict with or obstruct implementation of the applicable air quality plan;
- (b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- (c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including release in emissions which exceed quantitative thresholds for ozone precursors);

(d) Expose sensitive receptors to substantial pollutant concentrations; or

(e) Create objectionable odors affecting a substantial number of people.

As discussed in Section IV.A (Impacts Found to be Less Than Significant), no impacts related to issue “e” would occur as a result of the Project. Thus, no further analysis of this issue is required.

SCAQMD Significance Criteria

For air quality, LCF has not adopted specific citywide significance thresholds, but instead relies on regional significance thresholds identified by the SCAQMD in its CEQA *Air Quality Handbook* (SCAQMD CEQA Handbook), as revised in November 1993 and approved by the SCAQMD’s Board of Directors.

Construction Emissions

Based on guidance from the SCAQMD, the Project would have a significant impact if the following would occur:

- Daily regional construction emissions exceed SCAQMD construction emissions thresholds for VOC, NO_x, CO, SO_x, PM_{2.5}, or PM₁₀, as presented on Table IV.C-4;
- Daily localized construction emissions exceed SCAQMD construction emissions thresholds for NO_x, CO, PM_{2.5}, or PM₁₀, as presented on Table IV.C-4;
- The Project would generate TAC emissions that generate a health risk that exceeds ten persons in one million; and/or
- The Project would create an odor nuisance.

**Table IV.C-4
SCAQMD Construction Emissions Thresholds**

Criteria Pollutant	Regional Emissions (Pounds Per Day)	Localized Emissions (Pounds Per Day) /a/
Volatile Organic Compounds (VOC)	75	--
Nitrogen Oxides (NO _x)	100	238
Carbon Monoxide (CO)	550	3,573
Sulfur Oxides (SO _x)	150	--
Fine Particulates (PM _{2.5})	55	22
Particulates (PM ₁₀)	150	88

/a/ Localized thresholds based on 150-meter receptor distance and a five acre per day grading schedule in the Central Los Angeles County receptor area.

Source: SCAQMD Local Significance Thresholds guidance.

As discussed in Section IV.A (Impacts Found to be Less Than Significant), no impacts related to odors would occur as a result of the Project. Thus, no further analysis of this issue is required.

Operational Emissions

Based on SCAQMD guidance, the Project would have a significant impact if the following would occur:

- Daily operational emissions exceed SCAQMD operational thresholds for VOC, NO_x, CO, SO_x, PM_{2.5}, or PM₁₀, as presented on Table IV.C-5;
- Project-related traffic causes CO concentrations at study intersections to violate the CAAQS for either the one- or eight-hour period. The CAAQS for the one- and eight-hour periods are 20 ppm and 9.0 ppm, respectively;
- The Project would generate significant emissions of TACs;
- The Project would create an odor nuisance; and/or
- The Project would not be consistent with the AQMP.

Table IV.C-5
SCAQMD Daily Operational Emissions Thresholds

Criteria Pollutant	Pounds Per Day
Volatile Organic Compounds (VOC)	55
Nitrogen Oxides (NO _x)	55
Carbon Monoxide (CO)	550
Sulfur Oxides (SO _x)	150
Fine Particulates (PM _{2.5})	55
Particulates (PM ₁₀)	150
<i>Source: SCAQMD, 2012.</i>	

Project Impacts

Flintridge Sacred Heart Academy Campus

Consistency with Air Quality Management Plan

The SCAQMD's AQMP focuses on achieving clean air standards while accommodating population growth forecasts by the Southern California Association of Governments (SCAG). Growth considered to be consistent with the AQMP would not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. SCAG's growth forecasts from the 2012 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) are largely built off local growth forecasts from local governments like LCF. The 2012 RTP/SCS accommodates up to 20,400 persons;

7,000 households; and 10,200 jobs in LCF by 2020. The 2016 RTP/SCS accommodates 21,600 persons; 7,300 households; and 8,300 jobs by 2040.

The Project does not include an increase in student enrollment or the number of faculty at the school. As such, the Project would not generate population growth in the Project area that has not been accounted for in the AQMP. Thus, the Project would not conflict with the AQMP. Therefore, no significant impacts related to consistency with the AQMP would occur as a result of the Project.

Construction

As discussed in Section III, Project Description, implementation of the Specific Plan would occur over a 15-year period, with major individual improvement projects staged so that no one is underway at any one time. However, to provide for a conservative assessment of the Project's emissions, this analysis assumes that all of the major individual improvement projects would occur sequentially and non-overlapping. The Project's conservative construction schedule is shown on Table IV.C-6. Construction-related emissions were estimated using the SCAQMD's CalEEMod 2016.3.1 model based on assumptions from the Project developer, including the Project's construction schedule.

Regional Emissions

As shown on Table IV.C-7, the construction of the Project would not produce VOC, CO, SO_x, PM₁₀ and PM_{2.5} emissions that exceed the SCAQMD's regional thresholds. However, NO_x emissions during Phase One would exceed the threshold for this ozone precursor. As a result, construction of the Project could contribute substantially to an existing violation of air quality standards for regional pollutants (e.g., ozone). Without mitigation, this impact would be significant.

It should be noted that these emissions would include helicopter activities in Phase One A associated with the replacement/installation of up to 13 sub-transmission poles by SCE. While the types of helicopters and engines are not known at this time, the installation of each pole would involve helicopter operations that would include the following modes: taxi/idle, takeoff, climbout, approach, and landing. In simpler terms, each helicopter operation would include a landing and takeoff (LTO) cycle, which includes takeoff, landing, or touch-and-go. Based on emission factors established for a similar effort to install utility poles, the installation of each pole could produce about 1.028 lb/day of VOC emissions, 4.5 lb/day of NO_x, and 4.5 lb/day of CO emissions.² Assuming the installation of one pole per day, these emissions would add incrementally to emissions from construction equipment, haul trucks, employee commuting, and other ground-based emissions.

² *San Diego Gas & Electric, Off-Road Emission Factors. Assumes use of Hughes 500E helicopter with Allison 250-C208 engine with one LTO and three hours of installation for each pole. Accessed at https://www.sdge.com/sites/default/files/regulatory/Appendix%204.3-A_Emissions%20Spreadsheets.pdf*

**Table IV.C-6
Proposed Construction Schedule**

Phase	Subphase	Duration	Notes
Phase One A	Demolition of fire pump	1/1/18-1/8/18	360 cubic yards of debris from fire pump enclosure
	Site preparation for fire protection plan	1/9/18-1/23/18	
	Grading for fire protection plan	1/24/18-2/9/18	1,644 net cubic yards of export
	Paving of fire truck access road	2/10/18-3/10/18	
	Site preparation for SCE	3/11/18-5/11/18	Replacing/installing up to 13 66-kV sub-transmission poles by truck and by helicopter; removing 3 4-kV distribution poles; installing 4 new 16-kV distribution poles; blading approximately 0.7 acre access road
Phase One B	Demolition of Cottages 1 and 2	7/2/18-7/9/18	1,200 cubic yards of debris export
	Grading for Art Center and Dominican Garden	7/10/18-8/10/18	790 cubic yards of cut and 1,500 cubic yards of fill
	Building construction for Art Center	8/11/18-2/11/19	
	Architectural coatings for Art Center	2/12/19-4/12/19	
Phase Two	Demolition of parking lot	4/13/19-4/20/19	690 cubic yards of parking lot asphalt hauled away
	Grading of parking structure site	4/21/19-5/21/19	13,436 cubic yards of soil excavated, with 12,890 cubic yards exported to Lot A Palmerstone Property for athletic concourse and parking
	Building Construction of parking structure	5/22/19-1/15/20	239-space garage
Phase Three	Site Preparation for high school expansion	1/16/20-1/23/20	
	Grading of high school expansion	1/24/20-2/24/20	5,589 cubic yards of cut
	Building construction of high school expansion	2/25/20-10/25/20	
	Paving of parking lot D with courtyard and surface parking	10/26/20-11/26/20	
	Architectural coatings for high school expansion	11/27/20-1/20/21	
Phase Four	Site preparation of athletic concourse at Palmerstone Property	1/21/21-2/21/21	
	Grading of athletic concourse	2/22/21-8/22/21	No net export or import

Source: DKA Planning, 2017

Localized Emissions

In terms of local air quality, the Project would not produce emissions that would exceed the SCAQMD’s recommended localized standards of significance for NO₂ and CO during the construction phase (refer to Table IV.C-7). However, construction activities could produce PM₁₀ and PM_{2.5} emissions that would exceed localized thresholds recommended by the SCAQMD, primarily from vehicle exhaust and fugitive dust emissions from off-road construction vehicles during the site grading and excavation phase. Therefore, without mitigation, Project impacts related to localized construction emissions would be significant.

Sensitive Receptors

As illustrated on Table IV.C-7, nearby receptors could be exposed to concentrations of localized pollutants PM₁₀ and PM_{2.5} from construction of the Project in excess of SCAQMD LST thresholds for PM₁₀ and PM_{2.5}. Therefore, without mitigation, Project impacts related to exposure of sensitive receptors to substantial concentrations of localized pollutants during construction would be significant.

**Table IV.C-7
Estimated Daily Construction Emissions – Unmitigated**

Construction Phase Year	Pounds Per Day					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2018	12	131	63	<1	24	15
2019	7	40	27	<1	3	5
2020	8	42	26	<1	20	12
2021	8	41	22	<1	20	12
Maximum Regional Total	12	131	63	<1	24	15
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	Yes	No	No	No	No
Maximum Localized Total	12	131	63	<1	24	15
Localized Significance Threshold	--	148	1,540	--	12	7
Exceed Threshold?	N/A	No	No	N/A	Yes	Yes

Source: DKA Planning, 2017 based on CalEEMod 2016.3.1 model runs. LST analyses based on 5-acre site with 25-meter distance to receptors in West San Gabriel Valley source receptor area. CalEEMod screening tables provide Localized Thresholds of Significance for 1, 2, and 5 acre scenarios. Sites larger than 5 acres are to use the 5-acre LSTs. The Project includes disturbance of approximately 7.2 acres. (Refer to Appendix C.)

Operation

The operational emissions discussed below are based on full buildout of the Specific Plan.

Regional Emissions

As shown on Table IV.C-8, the Project's operational emissions would not exceed the SCAQMD's regional significance thresholds for VOC, NO_x, CO, PM₁₀, and PM_{2.5} emissions. As a result, the Project's operational impacts on regional air quality would be less than significant.

Localized Emissions

With regard to localized air quality impacts, the Project would emit minimal emissions of NO₂, CO, PM₁₀, and PM_{2.5} from area and energy sources on-site. These localized emissions would not approach the SCAQMD's localized significance thresholds that signal when there could be human health impacts at nearby sensitive receptors during long-term operations. Therefore, Project impacts related to localized operational emissions would be less than significant.

Sensitive Receptors

The Project would generate long-term emissions from area and energy sources that would generate negligible pollutant concentrations of CO, NO₂, PM_{2.5}, or PM₁₀ at sensitive receptors that would not exceed SCAQMD significance thresholds. Therefore, Project impacts related to sensitive receptors during the operational phase would be less than significant.

Table IV.C-8
Estimated Daily Project Operational Emissions

Emission Source	Pounds per Day					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Sources	<1	<1	<1	<1	<1	<1
Energy Sources	<1	<1	<1	<1	<1	<1
Net Regional Total	<1	<1	<1	<1	<1	<1
Regional Significance Threshold	55	55	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No
Net Localized Total	<1	<1	<1	<1	<1	<1
Localized Significance Threshold	--	148	1,540	--	3	2
Exceed Threshold?	N/A	No	No	N/A	No	No

Source: DKA Planning, 2017 based on CalEEMod 2016.3.1 model runs. LST analyses based on 5-acre site with 25-meter distance to receptors in West San Gabriel Valley source receptor area. CalEEMod screening tables provide Localized Thresholds of Significance for 1, 2, and 5 acre scenarios. Sites larger than 5 acres are to use the 5-acre LSTs. The Project includes disturbance of approximately 6.5 acres. (Refer to Appendix C.)

Southern California Edison Sub-Transmission Pole/Line Replacement

As shown on Table IV.C-6, the activities associated with the proposed replacement/installation of the 13 existing SCE poles and line to the school campus would occur during the Project's Phase One A of the overall construction schedule. The emissions associated with all of Phase One A (and part of Phase One B) would occur during Construction Phase Year 2018 and are shown on Table IV.C-7. As shown, the construction of the Project during Construction Phase Year 2018 would not produce VOC, CO, SO_x, PM₁₀ and PM_{2.5} emissions that exceed the SCAQMD's regional thresholds. However, NO_x emissions during Phase One A (and part of Phase One B) would exceed the threshold for this ozone precursor. As a result, construction of the Project could contribute substantially to an existing violation of air quality standards for regional pollutants (e.g., ozone). Without mitigation, this impact would be significant.

CUMULATIVE IMPACTS

SCAQMD recommends that any construction-related emissions and operational emissions from individual development projects that exceed the project-specific mass daily emissions thresholds identified above also be considered cumulatively considerable.³ Individual projects that generate emissions not in excess of SCAQMD's significance thresholds would not contribute considerably to any potential cumulative impact. SCAQMD neither recommends quantified analyses of the emissions generated by a set of cumulative development projects nor provides thresholds of significance to be used to assess the impacts associated with these emissions.

AQMP Consistency

Cumulative development is not expected to result in a significant impact in terms of conflicting with, or obstructing implementation of, the AQMP. As discussed previously, growth considered to be consistent with the AQMP would not interfere with attainment because this growth is included in the projections utilized in the formulation of the AQMP. Consequently, as long as growth in the Basin is within the projections for growth identified in the 2012 RTP/SCS, implementation of the AQMP will not be obstructed by such growth. As discussed previously, the Project does not include any increase in student enrollment or the number of faculty at the school and would be consistent with the AQMP. Therefore, the Project's contribution to the cumulative impact to the AQMP would not be cumulatively considerable and therefore, would be less than significant.

Construction Impacts

Cumulative construction emissions are considered when projects within close proximity of each other

³ *White Paper on Regulatory Options for Addressing Cumulative Impacts from Air Pollution Emissions, SCAQMD Board Meeting, September 5, 2003, Agenda No. 29, Appendix D, p. D-3.*

could result in larger impacts on local sensitive receptors. There are no related projects in close proximity of the Project site (refer to Figure II-6 in Section II, Environmental Setting).

Construction of the Project would produce cumulatively considerable emissions of localized nonattainment pollutants PM₁₀ and PM_{2.5}, as the anticipated emissions would exceed LST thresholds set by the SCAQMD. This is considered a significant impact. However, Mitigation Measures C-1 through C-3 would require the use of cleaner off-road construction equipment and good housekeeping measures that substantially reduce PM₁₀ and PM_{2.5} emissions during on-site construction activities. As a result, construction of the Project would not contribute to significant cumulative impacts on pollutant concentrations at nearby receptors with implementation of Mitigation Measures C-1 through C-3.

Operational Impacts

With respect to cumulative operational impacts, the Project would not produce cumulatively considerable emissions of non-attainment pollutants at the regional or local level. Because the Project's air quality impacts would not exceed the SCAQMD's operational thresholds of significance as noted on Table IV.C-8, the Project's impacts on cumulative emissions of non-attainment pollutants is considered less than significant. Long-term operation of the Project would not result in a cumulatively considerable net increase of any non-attainment criteria pollutant.

MITIGATION MEASURES

Because the Project would exceed SCAQMD's LST for construction emissions and would expose sensitive receptors to localized pollutant emissions, the following mitigation measures are required:⁴

- C-1: All off-road construction equipment greater than 50 hp shall meet USEPA Tier 3 emission standards, where available, to reduce NO_x, PM₁₀, and PM_{2.5} emissions at the Project site. In addition, all construction equipment shall be outfitted with Best Available Control Technology devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations. At the time of mobilization of each applicable unit of equipment, a copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided.
- C-2 The Project developer shall use 2010 and newer diesel haul trucks (e.g., material delivery trucks and soil import/export). If the Lead Agency determines that 2010 model year or newer diesel

⁴ *Mitigation Measures C-1 through C-3 apply to both the construction activities associated with the Southern California Edison Transmission Pole/Line Replacement and those at the Flintridge Sacred Heart Academy Campus, unless otherwise indicated.*

trucks cannot be obtained, the Lead Agency shall require trucks that meet U.S. EPA 2007 model year NO_x emissions requirements.

- C-3: Construction activities shall comply with SCAQMD Rule 403, including the following measures:
- Apply water to disturbed areas of the site three times a day (applies to Flintridge Sacred Heart Academy Campus construction activities only)
 - Require the use of a gravel apron or other equivalent methods to reduce mud and dirt trackout onto truck exit routes
 - Appoint a construction relations officer to act as a community liaison concerning on-site construction activity including resolution of issues related to PM generation.
 - Limit soil disturbance to the amounts analyzed in this air quality analysis.
 - All materials transported off-site shall be securely covered.
 - Apply non-toxic soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for ten days or more).
 - Traffic speeds on all unpaved roads to be reduced to 15 mph or less.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

AQMP Consistency

Project impacts related to AQMP consistency would be less than significant.

Construction

Regional and Localized Emissions

Mitigation Measures C-1 and C-2 call for the use of readily-available construction equipment that uses EPA-certified Tier 3 engines to reduce combustion-related NO_x, PM₁₀, and PM_{2.5} emissions. Mitigation Measure C-3 addresses fugitive dust emissions of PM₁₀ and PM_{2.5} that would be regulated by SCAQMD Rule 403, which calls for Best Available Control Measures (BACM) that include watering portions of the site that are disturbed during grading activities and minimizing tracking of dirt onto local streets. As shown on Table IV.C-9, with implementation of mitigation measures C-1 and C-2, the Project's localized emissions of PM₁₀ and PM_{2.5} would fall below SCAQMD's significance threshold. (It should be noted that Table IV.C-9 conservatively does not assume the application of BACMs to control fugitive dust.) Therefore, the Project's regional and localized construction emissions would be less than significant.

**Table IV.C-9
Estimated Daily Construction Emissions - Mitigated**

Construction Phase Year	Pounds Per Day					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2018	4	80	88	<1	10	<7
2019	7	23	28	<1	3	2
2020	8	22	27	<1	8	5
2021	8	19	24	<1	8	5
Maximum Regional Total	8	80	88	<1	10	<7
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No
Maximum Localized Total	7	87	88	<1	10	<7
Localized Significance Threshold	--	148	1,540	--	12	7
Exceed Threshold?	N/A	No	No	N/A	No	No
<i>Source: DKA Planning, 2017 based on CalEEMod 2016.3.1 model runs. LST analyses based on 5-acre site with 25-meter distance to receptors in West San Gabriel Valley source receptor area. Refer to Appendix C.</i>						

Sensitive Receptors

With implementation of Mitigation Measures C-1 through C-3, the Project's localized PM₁₀ and PM_{2.5} emissions would not exceed SCQAMD's significance thresholds. Thus, the Project would not expose sensitive receptors to substantial pollutant emissions. Therefore, Project impacts related to sensitive receptors would be less than significant.

Operational Emissions

The Project would not result in a significant air quality impact during long-term Project operation.