Tetley Street Residential Development
Focused Air Quality and Greenhouse Gas Analysis

Prepared by:

Synectecology
10232 Overhill Drive
Santa Ana, CA 92705

Prepared for:

The Olson Company
3010 Old Ranch Parkway, Suite 100
Seal Beach, CA 90740-2751

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1.0 Methodology

This air quality evaluation was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to determine if significant air quality or greenhouse gas impacts are likely to occur in conjunction with the type and scale of development associated with the proposed Tetley Street residential development project proposed by The Olson Company. The project is to be located in the Hacienda Heights portion of unincorporated Los Angeles County and includes the development of 33 semi-attached townhome units on approximately 2.16 acres of land. The project is to be sited along the south side of Tetley Street west of Hacienda Boulevard. The SR-60 (Pomona) Freeway lies about a mile to the north.

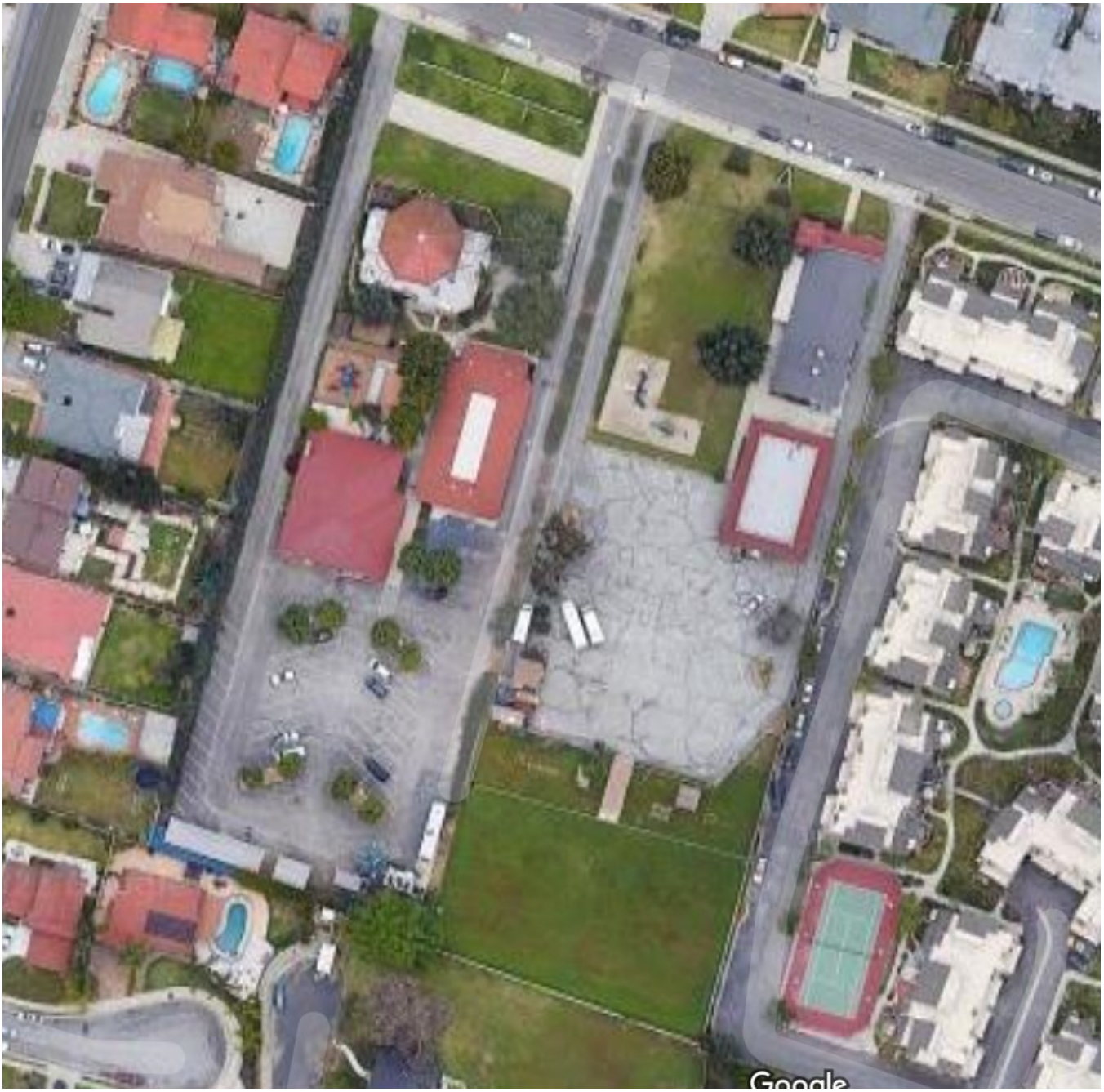
The project consists of the removal of existing land uses and the construction and operation of 33 dwelling units. The project site includes the Hacienda Heights Christian Church and preschool, located at 15716 Tetley. The structures are estimated at approximately 3,156 square feet for the community church with an additional 4,320 square feet used for a preschool, and would be removed at project implementation. The site is depicted in Figure 1.

The impact analysis contained in this report was prepared in accordance with the methodologies provided by the South Coast Air Quality Management District (SCAQMD) as included in *CEQA Air Quality Handbook* (April 1993) (*Handbook*) as well as updates included on the SCAQMD Internet web site. The analysis makes use of the California Emissions Estimator Model (CalEEMod Version 2016.3.2) distributed by the SCAQMD, and screening tables included in the SCAQMD's *Final Localized Significance Threshold Methodology* (June 2003) and *Sample Construction Scenarios for Projects Less than Five Acres in Size*, (February 2005).

The CalEEMod model uses EMFAC2014 emissions factors for vehicle traffic and the OFFROAD2011 emissions factors for construction equipment. For the purposes of this analysis, construction is estimated to begin on January 3, 2022 and follows the CalEEMod default construction schedule.

The subsequent occupation of the site in 2023 is also based on the CalEEMod model using modified traffic-projections provided by RK Engineering Group (RK) as included in the 10th Edition of the *ITE Trip Generation Manual*. It should be noted here that the CalEEMod model was released before the new ITE manual and uses the 9th Edition of the *ITE Trip Generation Manual*. As such, the trip generation rates included in the model were modified to reflect the later trip generation rates provided by RK. The derivation of these trip rates is discussed in Section 4.2.2, below, and Appendix M.

Figure 1
SITE LOCATION



2.0 Existing Conditions

2.1 Climate/Meteorology

The project area lies in the South Coast Air Basin (SCAB or Basin). The SCAB includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter. The general region lies in the semi-

permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild climatological pattern is infrequently interrupted by periods of extremely hot weather, winter storms, or Santa Ana winds.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station located nearest to the site in Pomona reports a yearly average of 62°F. The average low is reported at 38°F in January while the average high is 91°F in both July and August. All areas in the Basin have recorded temperatures above 100°F in recent years and temperatures as high as 114°F have been recorded at the Pomona station. January is typically the coldest month in this area of the Basin, with minimum temperatures in the 30s.

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 17.4 inches per year in the project area as measured in Covina.

Although the Basin has a semi-arid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by off-shore winds, the ocean effect is dominant. Periods of heavy fog, especially along the coastline, are frequent; and low stratus clouds, often referred to as "high fog" are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the east portions of the Basin.

Wind patterns across the south coastal region are characterized by westerly and southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season. Annually, typical winds in the project area average about 5 to 8 miles per hour during the day and 2 to 5 miles per hour during the night.

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

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." This mixing height can change under conditions when the top of the inversion does not change. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer, and the generally good air quality in the winter in the project area.

2.2 Ambient Air Quality

The following characterization of the baseline atmospheric environment includes an evaluation of the ambient air quality and applicable rules, regulations, and standards for the area. Because the project has the ability to release gaseous emissions of criteria pollutants and dust into the ambient air, it falls under the ambient air quality standards promulgated on the local, State, and federal levels.

2.2.1 Affected Environment

Topographical features that affect the transport and diffusion of pollutants in the project area include the mountain ranges to the northeast that prevent the transport of pollutants. Air quality in the SCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

The quality of the ambient air is affected by pollutants emitted into the air from stationary and mobile sources. Stationary sources can be divided into two major subcategories: point sources and area sources. Point sources consist of one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial processing plants. Area sources are widely distributed and produce many small emissions.

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 a combination of emissions from automobiles, trucks, and indirect sources. Indirect sources are sources that, by themselves, may not emit air contaminants; however, they indirectly cause the generation of air pollutants by attracting vehicle trips or consuming energy. Examples of indirect sources include a commercial center that generates vehicle trips and consumes energy resources through the use of natural gas for space and water heating. Indirect sources also include actions proposed by local governments, such as public and private development projects. In addition, indirect sources include those emissions created by the distance vehicles travel. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

2.2.2 Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by State and federal law. These regulated air pollutants are known as "criteria air pollutants" and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NOx), sulfur dioxide (SO_2), and most fine particulate matter (PM_{10} and $PM_{2.5}$) including lead (Pb) and fugitive dust are primary air pollutants. Of these CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NOx are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reaction in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Presented below is a description of each of these primary and secondary criteria air pollutants and their known health effects. Other pollutants, such as carbon dioxide (CO_2), a natural by-product of animal respiration that is also produced in the combustion process, have been linked to such phenomena as global warming. These emissions are now regulated and there are thresholds for their release. However, these pollutants do not jeopardize the attainment status of the SCAB.

Carbon monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances (e.g., gasoline or diesel fuel). The primary adverse health effect associated with CO is the interference of normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Reactive organic gases (ROGs) are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion, associated with motor vehicle usage, is the major source of hydrocarbons. Other sources of ROG include the evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG to form secondary pollutants. Note that for the purposes of this analysis ROG and **volatile organic compounds** (VOC), such as the emissions released from paint, are synonymous.

Nitrogen oxides (NOx) serve as integral participants in the process of photochemical smog production. The two major forms of NOx are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen (O). NOx acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Nitrogen dioxide (NO_2) is a by-product of fuel combustion. The principal form of NO_2 produced by combustion is nitric oxide (NO). NO reacts to form NO_2, creating the mixture of NO and NO_2 commonly called NOx. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2-3 years old) has been observed at concentrations below 0.3 ppm. NO_2 absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. NO_2 also contributes to the formation of PM_{10} (particulates having an aerodynamic diameter of 10 microns or 0.0004 inch or less in diameter).

Sulfur dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO_2. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations, when combined with particulates, SO_2 may injure lung tissue.

Particulate matter (PM) consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulate are now recognized. Course particles (PM_{10}) include that portion of the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Fine particles ($PM_{2.5}$) have an aerodynamic diameter of 2.5 microns (i.e., 2.5 one-millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Wind action on the arid landscape also contributes substantially to the local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Fugitive dust poses primarily two public health and safety concerns. The first concern is that of respiratory problems attributable to the suspended particulates in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent. Fugitive dust can also result in a nuisance factor due to the soiling of proximate structures and vehicles.

Ozone (O_3) is one of a number of substances called photochemical oxidants that are formed when reactive organic compounds (ROC) and NOx (both by-products of the internal combustion engine) react with sunlight. O_3 is present in relatively high concentrations in the SCAB and the damaging effects of photochemical smog are generally related to the concentrations of O_3. O_3 may pose a health threat to those who already suffer from respiratory diseases as well as healthy people. O_3 has been tied to crop damage (typically in the form of stunted growth and pre-mature death) and acts as a corrosive (resulting in property damage such as the embitterment of rubber products).

2.2.3 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TAC) is an environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The H&SC defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP), pursuant to Section 112(b) of the CAA (42 U.S.C. 7412[b]) is a TAC.

Under State law, the California Environmental Protection Agency (CalEPA), acting through the CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or serious illness or which may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bills 1807 (Tanner Air Toxics Act) and 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology (T-BACT) to minimize emissions.

Air toxics from stationary sources are regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the AQMD or APCD. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. To date, the CARB has designated nearly 200 compounds as TACs. Additionally, the CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel PM).

In 2000, the SCAQMD conducted a 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 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk.

2.2.4 Other Effects of Air Pollution

Just as humans are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants that can stunt their development or cause premature death, as well as interfere with their ability to convert CO_2 to oxygen. There are also numerous impacts to our economy including lost workdays due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

2.2.5 Greenhouse Gas Emissions

Federal Regulations

Office of the President

In 2021 President Biden rejoined the United States into the Paris climate accord. The Paris climate accord, known as the "Paris Agreement" by the United Nations, is an international agreement reached in 2015 aimed at reducing carbon emissions, slowing rising global temperatures and helping countries deal with the effects of climate change.

Under the terms of the agreement, signatories committed to "holding the increase in the global average temperature to well below 2° C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5° C above pre-industrial levels."

The deal requires countries to set their own targets for reducing emissions by 2020. The Obama administration committed the U.S. to reducing carbon emissions by 26 to 28 percent by 2025. The agreement also established a $100 billion fund to help vulnerable countries deal with the effects of climate change.

The final text of the agreement was adopted at the Conference of Parties to the U.N. Framework Convention on Climate Change, known as COP_{21}, in December 2015. The U.S., which took the lead in negotiating the deal, signed into agreement in April 2016, along with China, the European Union and 171 other nations. China and the U.S. account for nearly 40 percent of global carbon emissions.

The agreement took effect in November of that year, after nations accounting for 55 percent of global emissions ratified the treaty. As of May 2017, 147 parties have ratified the agreement, out of 195 who signed onto the accord.

The Obama administration committed the U.S. to the agreement without seeking ratification in the Senate, thereby allowing President Trump to withdraw support unilaterally. Under President Trump, the U.S. joins Nicaragua and Syria as the only countries not participating in the agreement.

In June 2013, the Executive Office of the President released *The President's Climate Action Plan* to reduce the causes and impacts of global climate change. The President's comprehensive plan includes numerous steps and measures to reduce climate change. For example, to cut carbon pollution in America, the plan:

- Directs EPA to work closely with states, industry and other stakeholder to establish carbon pollution standards for both new and existing power plants;
- Makes up to $8 billion in loan guarantee authority available for a wide array of advanced fossil energy and efficiency projects to support investments in innovative technologies;
- Directs DOI to permit enough renewables project—like wind and solar – on public lands by 2020 to power more than 6 million homes; designates the first-ever hydropower project for priority permitting; and sets a new goal to install 100 megawatts of renewables on federally assisted housing by 2020; while maintaining the commitment to deploy renewables on military installations;
- Expands the President's Better Building Challenge, focusing on helping commercial, industrial, and multi-family buildings cut waste and become at least 20 percent more energy efficient by 2020;
- Sets a goal to reduce carbon pollution by at least 3 billion metric tons cumulatively by 2030 – more than half of the annual carbon pollution from the U.S. energy sector – through efficiency standards set over the course of the Administration for appliances and federal buildings;
- Commits to partnering with industry and stakeholders to develop fuel economy standards for heavy-duty vehicles to save families money at the pump and further reduce reliance on foreign oil and fuel consumption post-2018; and
- Leverages new opportunities to reduce pollution of highly-potent greenhouse gases known as hydrofluorocarbons; directs agencies to develop a comprehensive methane strategy; and commits to protect our forests and critical landscapes.

To prepare the United States for the impacts of climate change, the plan:

- Directs agencies to support local climate-resilient investment by removing barriers or counterproductive policies and modernizing programs; and establishes a short-term task force of state, local, and tribal officials to advise on key actions the Federal government can take to help strengthen communities on the ground;

- Pilots innovative strategies in the Hurricane Sandy-affected region to strengthen communities against future extreme weather and other climate impacts; and building on a new, consistent flood risk reduction standard established for the Sandy-affected region, agencies will update flood-risk reduction standards for all federally funded projects;

- Launches an effort to create sustainable and resilient hospitals in the face of climate change through a public-private partnership with the healthcare industry;

- Maintains agricultural productivity by delivering tailored, science-based knowledge to farmers, ranchers, and landowners; and helps communities prepare for drought and wildfire by launching a National Drought Resilience Partnership and by expanding and prioritizing forest- and rangeland- restoration efforts to make areas less vulnerable to catastrophic fire; and

- Provides climate preparedness tools and information needed by state, local, and private-sector leaders through a centralized "toolkit" and a new Climate Data Initiative.

Finally, to lead international efforts to address global climate change, the plan:

- Commits to expand major new and existing international initiatives, including bilateral initiatives with China, India, and other major emitting countries;

- Leads global sector public financing towards cleaner energy by calling for the end of U.S. government support for public financing of new coal-fired powers plants overseas, except for the most efficient coal technology available in the world's poorest countries, or facilities deploying carbon capture and sequestration technologies; and

- Strengthens global resilience to climate change by expanding government and local community planning and response capacities.

USEPA

As part of President Obama's Climate Action Plan to cut carbon pollution and lead in clean energy, EPA released its 2013 Strategic Sustainability Performance Plan that outlines actions planned over the next year to cut energy use and waste in agency operations. President Obama signed Executive Order 13514 on Federal Leadership in Environmental, Energy, and Economic Performance in October 2009 setting aggressive targets for reducing waste and pollution in Federal operations by 2020. EPA's 2013 Sustainability Plan builds on four years of progress under the Executive Order and provides an overview of how the agency is saving taxpayer dollars, reducing carbon emissions, and saving energy.

The 2013 Sustainability Plan also helps guide EPA's actions to meet the new goal by directing the federal government to consume 20 percent of its electricity from renewable sources by 2020 – more than double the prior level. Meeting this renewable energy goal reduces pollution in our communities, promotes American energy independence, and supports homegrown energy produced by American workers.

The 2013 Sustainability Plan outlines actions planned for the upcoming year to continue progress in meeting the President's goals, including:

- Pursuing reconstruction of key EPA research infrastructure;
- Consolidating the Research Toxicology Laboratory in Durham, NC into the Main laboratory at Research Triangle Park, NC; and
- Continuing work on EPA's award winning water conservation program.

Additionally, on June 2, 2014, the U.S. Environmental Protection Agency, under President Obama's Climate Action Plan, proposed a commonsense plan to cut carbon pollution from power plants. The EPA's Clean Power Plan cuts carbon pollution from the power sector by 30 percent from 2005 levels. The proposal will also cut pollution that leads to soot and smog by over 25 percent in 2030. Additionally, the plan will lead to climate and health benefits worth an estimated $55 to $93 billion in 2030, including 2,700 to 6,000 premature deaths and 140,000 to 150,000 asthma attacks in children.

State Regulations

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gas would be progressively reduced, as follows:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels; and
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.), which requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide greenhouse gas emissions are reduced to 1990 levels by 2020 (representing an approximate 25 percent reduction in emissions).

In June 2007, CARB directed staff to pursue 37 early actions for reducing greenhouse gas emissions under AB 32. The broad spectrum of strategies to be developed – including a Low Carbon Fuel Standard, regulations for refrigerants with high global warming potentials, guidance and protocols for local governments to facilitate greenhouse gas reductions, and green ports – reflects that the serious threat of climate change requires action as soon as possible.

In addition to approving the greenhouse gas reduction strategies, CARB directed staff to further evaluate early action recommendations made at the June 2007 meeting, and to report back to CARB within 6 months. The general sentiment of CARB suggested a desire to try to pursue greater greenhouse gas emissions reductions in California in the near-term. Since the June 2007 CARB hearing, CARB staff has evaluated all 48 recommendations submitted by several stakeholder and several internally-generated staff ideas and published the *Expanded List of Early Action Measures To Reduce Greenhouse Gas Emissions In California*, recommended for

board consideration in October 2007. Based on its additional analysis, CARB staff is recommending the expansion of the early action list to a total of 44 measures. Nine of the strategies meet the AB 32 definition of discrete early action measures. Discrete early action measures are measures that will be in place and enforceable by January 1, 2010. The discrete early action items include: (1) a Low Carbon Fuel standards for ethanol, biodiesel, hydrogen, electricity, compressed natural gas, liquefied petroleum gas, and biogas; (2) restrictions on High Global Warming Potential Refrigerants; (3) Landfill Methane Capture; (4) Smartway Truck Efficiency; (5) Port Electrification; (6) Reduction of perfluorocarbons from the semiconductor industry; (7) Reduction of propellants in consumer products; (8) Tire inflation; and (9) Sulfur Hexafluoride (SF_6) reductions from non-electricity sector.

The 2020 target reductions are currently estimated to be 174 million metric tons of carbon dioxide (CO_2) equivalent ($MMTCO_2e$). In total, the recommended early actions have the potential to reduce greenhouse gas emissions by at least 42 $MMTCO_2e$ emissions by 2020, representing about 25 percent of the estimated reductions needed by 2020. The CARB Board adopted Resolution 07-55 in December 2007, approving 427 $MMTCO_2e$ as the statewide greenhouse gas emissions limit for 2020, which is equivalent to the 1990 emissions level. The measures are in the sectors of fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, solid waste, cement, oil and gas, electricity, and fire suppression.

The First Update to the AB 32 Scoping Plan was approved by the California Air Resources Board on May 22, 2014, and builds upon the initial Scoping Plan with new strategies and recommendations. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines ARB's climate change priorities for the next five years, and also sets the groundwork to reach long-term goals set forth in Executive Orders S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

2.3 Ambient Air Quality Standards (AAQS)

The Clean Air Act Amendment of 1971 established national Ambient Air Quality Standards (AAQS) with states retaining the option to adopt more stringent standards or to include other pollution species. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health based Ambient Air Quality Standards for six air pollutants. As shown in Table 1, these pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM_{10}, $PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to primary and secondary Ambient Air Quality Standards, the State of California has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants, which actually threaten public health.

Table 1
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	*	
Sulfur Dioxide (SO_2)	Annual Average	*	0.03 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	*	
	24 hours	0.04 ppm	0.14 ppm	
Suspended Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	
Suspended Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	*	35 $\mu g/m^3$	
Lead (Pb)	Monthly	1.5 $\mu g/m^3$	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 $\mu g/m^3$	
Sulfates (SO_4)	24 hours	25 $\mu g/m^3$	*	Industrial processes.

Notes:
ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard is not applicable for this pollutant/duration by this entity.

Source: California Air Resources Board

2.4 Air Quality Management Planning

2.4.1 Local Planning Requirements

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the Air Quality Management Plan (AQMP) for the SCAB. Since 1979, a number of AQMPs have been prepared. The AQMP was designed to comply with State and federal requirements, reduce the high level of pollutant emissions in the SCAB, and ensure clean air for the region through various control measures. To accomplish its task, the AQMP relies on a multilevel partnership of governmental agencies at the federal, State, regional, and local level. These agencies (i.e., the USEPA, CARB, local governments, SCAG, and SCAQMD) are the cornerstones that implement the AQMP programs.

In December 2016, the SCAQMD prepared the Final Draft of the *2016 Air Quality Management Plan*. The SCAQMD reports that the 2016 AQMP includes integrated strategies and measures to meet the following NAAQS 8-hour ozone standard of 75 parts per billion (ppb) by 2032, the annual $PM_{2.5}$ standard of 12 $\mu g/m^3$ by 2021-2025, the 8-hour ozone standard of 80 ppb by 2024 (updated from the 2007 and 2012 AQMPs), the 1-hour ozone standard (120 ppb) by 2023 (updated from the 2012 AQMP), and the 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ by 2019 (updated from the 2012 AQMP). The 2016 AQMP also takes an initial look at proposed new federal 8-hour ozone standard (in the 65-70 ppb range), as well as incorporate energy, transportation, goods movement, infrastructure and other planning efforts that affect future air quality. The SCAQMD presented a Public Hearing presentation for the 2016 AQMP on February 3, 2017 approved 2016 AQMP on March 3, 2017 that demonstrates attainment of the 1-hr and 8-hr ozone NAAQS as well as the latest 24-hr and annual $PM_{2.5}$ standards.

USEPA designates areas throughout the country as attainment or nonattainment with the National Ambient Air Quality Standards (NAAQS) and establishes classifications for the nonattainment areas that dictate statutory attainment dates and requirements pursuant to the Clean Air Act. On February 3, 2017, the USEPA made a finding of failure to submit a State Implementation Plan (SIP) for the 2008 Ozone NAAQS including nonattainment New Source Review (NSR) certification for the South Coast Air Basin and Coachella Valley. The action would not change the existing SCAQMD NSR program or requirements for affected facilities. A Nonattainment NSR Compliance Demonstration was completed and will be considered for certification by the SCAQMD Governing Board.

On December 13, 2017 the SCAQMD convened a working group to address the Implementation of the 2016 AQMP – Stationary Source Incentive Guidelines. The working group discussed strategies and commitments. The SCAQMD also estimated that 12 to 14 billion dollars in funding will be required for the implementation of the Plan and has set up a working group to this end.

Subsequently, the SCAQMD has updated the attainment demonstration of the federal 1979 1-hour ozone standard that was presented in the 2016 AQMP. The emissions inventory in the updated attainment demonstration is based on the final emissions inventory in the 2016 AQMP in order to be consistent with the attainment demonstrations of the 8-hour ozone and $PM_{2.5}$ standards. The updated attainment demonstration also includes revised air quality modeling and an updated attainment strategy for meeting the 1-hour ozone standard.

The updated attainment strategy relies only on SCAQMD's proposed control measures in the 2016 AQMP, based on the expectation that progress in emission reductions targeted toward attainment of the 1997 8-hour ozone standard by 2023 will ensure attainment of the 1-hour ozone standard by 2022. As such, emission reductions from CARB's State Implementation Plan strategies, including 182(e)5 measures ("black box" measures) are no longer needed to attain the 1-hour standard. The updated attainment strategy successfully demonstrates attainment of the 1-hour ozone standard by 2022.

The Coachella Valley is currently classified as Severe nonattainment for the 1997 8-hour ozone standard and was required to demonstrate attainment by June 15, 2019. Despite air quality improvements in recent years, higher ozone levels were experienced throughout California including in Coachella Valley in 2017 and 2018, resulting in levels greater than the 1997 8-hour ozone standard. Ozone levels in the Coachella Valley are primarily impacted by pollutants directly transported from the SCAB. Because of the recent high ozone levels, the Coachella Valley will not be able to meet the 1997 8-hour ozone standard by June 2019.

Given that additional time is needed to bring the Coachella Valley into attainment of the 1997 8-hour standard, staff recommended submitting a formal request to the USEPA to reclassify the Coachella Valley from Severe to Extreme for the 1997 8-hour ozone standard based on the monitoring data indicating attainment is not practicable by the current attainment date. The SCAQMD conducted two public consultation meetings for the purpose of soliciting information, comments, and suggestions from the public, affected businesses, and stakeholders regarding this voluntary reclassification request. On June 7, 2019, the SCAQMD Governing Board approved the

request for reclassification of the Coachella Valley and the formal request was submitted to the USEPA through CARB.

The SCAQMD has scheduled a public consultation meeting on July 19, 2019 to provide an update on the progress and challenges in meeting the 1997 8-hour ozone NAAQS in the SCAB. SCAQMD is soliciting information, comments, and suggestions from the public, affected businesses, and all stakeholders on this matter.

Meanwhile, until the 2016 AQMP is adopted by the USEPA, the 2012 AQMP still serves as the planning document for air quality in the Basin.

On December 7, 2012, the SCAQMD adopted the *2012 Air Quality Management Plan*. The purposes of the 2012 AQMP for the Basin are to set forth a comprehensive and integrated program that will lead the Basin into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, to satisfy the planning requirements of the federal Clean Air Act, and to provide an update to the Basin's commitments towards meeting the federal 8-hour ozone standards. It also serves to satisfy the recent USEPA proposed requirement for a new attainment demonstration of the revoked 1-hour ozone standard, as well as a VMT emissions offset demonstration. Specifically, the Plan serves as the official SIP submittal for the federal 2006 24-hour $PM_{2.5}$ standard, for which USEPA established a due date of December 14, 2012. In addition, the 2012 AQMP updates specific new control measures and commitments for emissions reductions to implement the attainment strategy for the 8-hour ozone SIP, and thus help to reduce reliance on CAA Section 182(e)(5) long-term measures. Once approved by the District Governing Board and CARB, the 2012 AQMP was submitted to USEPA as the 24-hour $PM_{2.5}$ SIP addressing the 2006 $PM_{2.5}$ NAAQS and as a limited update to the approved 8-hour ozone SIP. The 1-hour ozone attainment demonstration and VMT emissions offset demonstration was also submitted through CARB to the USEPA.

The ozone portion of the 2007 AQMP has been approved by USEPA into the SIP. The "moderate" 24- hour $PM_{2.5}$ elements of the 2012 AQMP have also been approved by USEPA, and in January 2016 the USEPA approved the Basin's re-designation as a "serious" nonattainment area for $PM_{2.5}$. These approvals include SIP revisions submitted in response to USEPA's initial findings.

The District continues to implement the 2012 AQMP, which received a limited approval and limited disapproval by USEPA on April 14, 2016. Progress in implementing the 2012 AQMP can be measured by the progress in implementing control measures and the resulting emission reductions. Emission reduction commitments and reductions which will be achieved in 2014 and 2023 through already-adopted measures are based on the emission inventories and milestone years from the 2012 AQMP.

The 2012 AQMP also includes an update on the air quality status of the Salton Sea Air Basin (SSAB) in the Coachella Valley, a discussion of the emerging issues of ultrafine particle and near-roadway exposures, a report on the health effects of $PM_{2.5}$, and an analysis of the energy supply and demand issues that face the Basin and their relationship to air quality. As noted above, the USEPA required SIP revisions to the $PM_{2.5}$ program in granting approval in January 2016.

The 2012 AQMP incorporates the most recent planning assumptions and the best available information including: revised stationary point and area source emissions inventories; on-road and off-road mobile source emissions inventories based on CARB's latest EMFAC2011 and Off-Road Models; the use of new meteorological episodes for ozone and expanded air quality modeling analysis; and the latest demographic growth forecasts based on the approved 2012 Regional Transportation Plan (2012 RTP) developed by SCAG.

2.4.2 Air Quality Attainment Status

Areas that meet the ambient air quality standards are classified as "attainment" areas while areas that do not meet these standards are classified as "non-attainment" areas. The severities of the classifications for ozone non-

attainment include and range in magnitude from: marginal, moderate, serious, severe, and extreme. The attainment status for the SCAB is included in Table 2.

Table 2
ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN

Pollutant	State Status	Federal Status
Ozone (1-hour)	Extreme Non-attainment	Extreme Non-attainment (under the prior standard)
Ozone (8-hour)	Extreme Non-Attainment	Severe-17 (may petition for Extreme)
PM_{10}	Serious Non-attainment	Serious Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance

Source: California Air Resources Board

The Basin is also designated as attainment of the California Ambient Air Quality Standards (CAAQS) for SO_2, lead, and sulfates. Areas that are designated as Severe-17 for the ozone standard must meet attainment of the 8-hour standard by 2021 (2024 if reclassified to Extreme). Areas considered as serious non-attainment of the PM_{10} standards must have reached attainment by the end of 2006, or as expeditiously as possible. To date, the Basin still does not meet this standard. The $PM_{2.5}$ attainment date was to be met in the year 2015.

2.4.3 State Planning Requirements

Executive Order S-3-05

Under Executive Order S-3-05, as signed by Governor Arnold Schwarzenegger on June 1, 2005, the following greenhouse gas (GHG) emission reduction targets were established for California: (1) by 2010, reduce GHG emissions to 2000 levels; (2) by 2020, reduce GHG emissions to 1990 levels; and (3) by 2050, reduce GHG emissions to 80 percent below 1990 levels. In response, in March 2006, the California Environmental Protection Agency (CalEPA) published a Climate Action Team (CAT) report detailing how State agencies could implement a series of policies to meet the 2010 and 2020 goals. As indicated therein, among the policy actions that are cited are "smart land use and intelligent transportation." The CAT states that smart land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. Intelligent transportation systems (ITS) is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods, and service.

California Health and Safety Code

Section 41700 of the H&SC requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, response, health, or safety of any such person or the public, or which causes, or have a natural tendency to cause, injury or damage to business or property." Section 39606(b) of the H&SC authorizes the California Air Resources Board (CARB) to adopt standards for ambient air quality "in consideration of public health and safety, and welfare, including but not limited to health, illness, irritation to the senses, aesthetic value, interference with visibility, and the effects of air pollution on the

economy." The objective of ambient air quality standards (AAQS) is to provide a basis for preventing or abating adverse health or welfare effects of air pollution (17 CCR 70101).

Section 39607(e) requires that the CARB establish and periodically review area designation criteria. The CARB makes area designations for the following nine pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns (PM_{10}), sulfates (SO_4), lead (Pb), hydrogen sulfide (H_2S), and visibility-reducing particles. Assembly Bill 2595, known as the California Clean Air Act (CCAA), divided non-attainment areas into categories with progressively more stringent requirements (Sections 40918-40920.5, H&SC). As specified, it is the responsibility of each air pollution control district (APCD) and air quality management district (AQMD) within the State to attain and maintain California Ambient Air Quality Standards (CAAQS). The CCAA requires that an attainment plan be developed by all non-attainment districts for O_3, CO, sulfur oxides (SOx), and nitrogen oxides (NOx) that are either receptors or contributors of transported air pollutants. The CAAQS are listed in Table 1. Areas meeting CAAQS are classified as attainment; areas not meeting CAAQS are classified as non-attainment.

Assembly Bill 32 (California Global Warming Solutions Act of 2006), codified in Section 38500 *et seq*. of the H&SC, established a comprehensive program to reduce GHG by 2020 and identifies several major requirements that CARB is required to implement, including: (1) adoption and implementation of a list of discrete and early action GHG reduction measures; (2) approval of a Statewide1990 emission level that becomes the Statewide 2020 emissions limits; (3) adoption of mandatory GHG reporting rules for significant GHG sources; and (4) adoption of regulations to achieve the maximum technologically feasible and cost-effective reductions. As defined in Section 38505 of the H&SC, greenhouse gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

2.4.4 Federal Clean Air Act Requirements

Again, it is possible that the Federal requirements for criteria pollutants will change under the Trump Administration. However, at this time, no such action has been taken and the Federal requirements prior to the Trump Administration still serve as the basis of this analysis.

The Federal Clean Air Act of 1970 (42 U.S.C. Section 7401 *et seq*.) (CAA) requires any new major stationary sources of air pollution and any major modifications to major stationary sources to obtain an air pollution permit before commencing construction. New Source Review (NSR) requirements (42 U.S.C. 7411) differ depending on the attainment status of the area where the major facility is to be located. Prevention of Significant Deterioration (PSD) requirements (42 U.S.C. 7470-7491) apply in areas that are in attainment of the National Ambient Air Quality Standards (NAAQS). Non-attainment area NSR requirements apply to areas that have not been able to demonstrate compliance with the NAAQS.

Section 108 of the CAA directs the USEPA to list pollutants that may reasonably be anticipated to endanger public health and welfare and to issue air quality criteria for those pollutants. The USEPA has set NAAQS for the following pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and sulfur dioxide (SO_2). The NAAQS for those primary pollutants are listed in Table 1. Section 176(c) prohibits federal agencies from taking actions in NAAQS non-attainment or maintenance areas that do not conform to the State Implementation Plan (SIP) for the attainment and maintenance of NAAQS pursuant to Section 110(a).

2.5 Baseline Air Quality

Existing levels of ambient air quality and historical trends and projections in the project area are best documented by measurements made by the SCAQMD. The project is located in the central portion of Source Receptor Area (SRA) 10 (Pomona/Walnut Valley). The SCAQMD maintains an air quality monitoring station for this area that

monitors ozone, carbon monoxide, and nitrogen dioxide. The station does not monitor either PM_{10} or $PM_{2.5}$ particulate matter and these data are inferred from the East San Gabriel Valley station located in SRA 9 to the north of the project site. The results are included in Table 3. These stations show that ozone levels continue to exceed the California and national hourly standards, but appear to be decreasing over the last over the last 5 years.

Table 3
AIR QUALITY MONITORING SUMMARY FOR THE POMONA/WALNUT VALLEY AND EAST SAN GABRIEL VALLEY MONITORING STATIONS
(Number Of Days Standards Were Exceeded And Maximum Levels During Such Violations[1])

State and Federal Pollutant/Standard	*2015*	*2016*	*2017*	*2018*	*2019*
Ozone (O_3)					
State 1-hour > 0.09 ppm	30	20	18	7	1
State 8-hour >0.07 ppm	55	29	35	10	12
Federal 1-hour > 0.124 ppm	2	1	5	0	0
Federal 8-hour > 0.070 ppm	53	26	35	10	12
Max. 1-hour conc. (ppm)	0.136	0.127	0.147	0.112	0.096
Max. 8-hour conc. (ppm)	0.098	0.092	0.114	0.092	0.083
Carbon Monoxide (CO)					
State 8-hour $\geq$ 9.1 ppm	0	0	0	0	0
Max. 8-hour conc. (ppm)	1.6	1.3	1.6	1.8	1.3
Nitrogen Dioxide (NO_2)					
State 1-hour > 180 (ppb)	0	0	0	0	0
Max. 1-hour conc. (ppb)	72.3	69.3	81.2	67.9	64.4
Inhalable Particulates (PM_{10})[2]					
State 24-hour > 50 µg/m^3	12/59	21/362	36/347	20/317	3/308
Federal 24-hour > 150 (µg/m^3)	0/59	0/362	0/347	0/317	0/308
Max. 24-hour conc. (µg/m^3)	101	74	140	101	97
Inhalable Particulates ($PM_{2.5}$)[2]					
Federal 24-Hour > 35 µg/m^3	2/120	0/122	0/115	0/119	0/120
Max. 24-Hour Conc. (µg/m^3)	70.3	32.17	24.90	30.20	28.30

Notes:
[1] With the exception of inhalable particulates (PM_{10} and $PM_{2.5}$), all values are based on 365 days per year.
[2]Violations per number of samples.

Although NO_2 measurements indicate that no standards were exceeded, NO_2 is a precursor to O_3 formation, which continually does exceed the standards. Hydrocarbons and NO_2 are emitted by both mobile and stationary sources, with the greater portion emanating from mobile sources in the Basin. Pollutants emitted from upwind cities react during their transport downwind to produce the oxidant concentrations measured at the Pomona/Walnut Valley monitoring station. Therefore, all upwind areas within the SCAB contribute to the O_3 production. These concentrations increase during the summer, with concentrations increasing from the late morning through the afternoon.

With regard to particulate matter, no trend is readily apparent. The State standard for PM_{10} was exceeded 92 of the 1,393 (6.6 percent) in the last 5 years that it was monitored. The federal standard has not been violated in more than the last 5 years. However, the federal standard for $PM_{2.5}$ was exceeded twice of the 596 times (0.3 percent) in the last 5 years. Suspended particulate matter (both total suspended particulates [TSP] and PM_{10} and $PM_{2.5}$) is a mixture of natural and manmade materials that include soil particles, biological materials, sulfates, nitrates, organic compounds, and lead. Smaller particles (PM_{10}, $PM_{2.5}$) are created by the combustion of fossil fuels, but are also given off from tire wear and brake dust as well as wild fires.

2.6 Standard Conditions and Uniform Codes

All projects constructed in the SCAB are subject to standard conditions and uniform codes. Compliance with these provisions is mandatory and as such, does not constitute mitigation under CEQA. Those conditions specific to air quality are included below.

- Adherence to SCAQMD Rule 403, which sets requirements for dust control associated with grading and construction activities.
- Adherence to SCAQMD Rules 431.1 and 431.2, which require the use of low sulfur fuel for stationary construction equipment.
- Adherence to SCAQMD Rule 1108, which sets limitations on ROG content in asphalt.
- Adherence to SCAQMD Rule 1113, which sets limitations on ROG content in architectural coatings.
- Adherence to SCAQMD Rule 1143, which sets limitations on ROG content in consumer paint thinners and multipurpose solvents.

Furthermore, the project shall comply with Title 24 energy-efficient design requirements as well as the provision of window glazing, wall insulation, and efficient ventilation methods in accordance with the requirements of the Uniform Building Code (UBC).

During construction, the project would be subject to SCAQMD Rule 403 (Fugitive Dust). SCAQMD Rule 403 does not require a permit for construction activities but sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the Basin. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM_{10} concentration impact at the property line of more than 50 $\mu g/m^3$ as determined through PM_{10} high-volume sampling. The concentration standard and associated PM_{10} sampling do not apply if specific measures identified in the rule are implemented and appropriately documented.

In accordance with Rule 403, the SCAQMD requires that contractors implement Best Available Control Technology (BACT) for construction activities. Rule 403 identifies two sets of specific measures, one for projects less than 50 acres and another set of conditions for projects that exceed 50 acres. The requirements applicable to the project are included in Table 4. Note that these measures are regulatory requirements and as such, do not constitute mitigation under CEQA.

Table 4
SCAQMD REQUIRED BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measures	Guidance
Backfilling	Stabilize backfill material when not actively handling; and Stabilize backfill material during handling; and Stabilize soil at completion of activity	Mix backfill soil with water prior to moving; and Dedicate water truck or high capacity hose to backfilling equipment; and Empty loader bucket slowly so that no dust plumes are generated; and Minimize drop height from loader bucket.

Clearing and Grubbing	Maintain stability of soil through prewatering of site prior to clearing and grubbing; and Stabilize soil during clearing and grubbing activities; and Stabilize soil immediately after clearing and grubbing activities.	Maintain live perennial vegetation where possible; and Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing Forms	Use water spray to clear forms; or Use sweeping and water spray to clear forms; or Use vacuum system to clear forms.	Use of high pressure air to clear forms may cause exceedance of Rule requirements.
Crushing	Stabilize surface soils prior to operation of support equipment; and Stabilize material after crushing.	Follow permit conditions for crushing equipment; and Pre-water material prior to loading into crusher; and Monitor crusher emissions opacity; and Apply water to crushed material to prevent dust plumes.
Cut and Fill	Pre-water soils prior to cut and fill activities; and Stabilize soil during and after cut and fill activities.	For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.
Demolition Mechanical/Manual	Stabilize wind erodible surfaces to reduce dust; and Stabilize surface soil where support equipment and vehicles will operate; and Stabilize loose soil and demolition debris; and Comply with Rule 1403.	Apply water in sufficient quantities to prevent the generation of visible dust plumes.
Disturbed Soil	Stabilize disturbed soil throughout the construction site; and Stabilize disturbed soil between structures	Limit vehicular traffic and disturbances on soils where possible; and If interior block walls are planned, install as early as possible; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Earth-Moving Activities	Pre-apply water to depth of proposed cuts; and Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and Stabilize soils once earth-moving activities are complete.	Grade each project phase separately, timed to coincide with construction phase; and Upwind fencing can prevent material movement on site; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Importing/Exporting of Bulk Materials	Stabilize material while loading to reduce fugitive dust emissions; and Maintain at least six inches of freeboard on haul vehicles; and Stabilize material while transporting to reduce fugitive dust emissions; and Stabilize material while unloading to reduce fugitive dust emissions; and Comply with CVC Section 23114.	Use tarps or other suitable enclosures on haul trucks; and Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and Comply with track-out prevention/mitigation requirements; and Provide water while loading and unloading to reduce visible dust plumes.

Landscaping	Stabilize soils, materials, slopes	Apply water to materials to stabilize; and Maintain materials in a crusted condition; and Maintain effective cover over materials; and Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and Hydroseed prior to rain season.
Road Shoulder Maintenance	Apply water to unpaved shoulders prior to clearing; and Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	Pre-water material prior to screening; and Limit fugitive dust emissions to opacity and plume length standards; and Stabilize material immediately after screening.	Dedicate water truck or high capacity hose to screening operation; and Drop material through the screen slowly and minimize drop height; and Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point.
Staging Areas	Stabilize staging areas during use; and Stabilize staging area soils at project completion.	Limit size of staging area; and Limit vehicle speeds to 15 miles per hour; and Limit number and size of staging area entrances/exits.
Stockpiles/Bulk Material Handling	Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	Add or remove material from the downwind portion of the storage pile; and Maintain storage piles to avoid steep sides or faces.
Traffic Areas for Construction Activities	Stabilize all off-road traffic and parking areas; and Stabilize all haul routes; and Direct construction traffic over established haul routes.	Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	Stabilize surface soils where trencher or excavator and support equipment will operate; and Stabilize soils at the completion of trenching activities.	Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching; and Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.

Truck Loading	Pre-water material prior to loading; and Ensure that freeboard exceeds six inches (CVC 23114)	Empty loader bucket such that no visible dust plumes are created; and Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Turf Overseeding	Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and Cover haul vehicles prior to exiting the site.	Haul waste material immediately off-site.
Unpaved Roads/Parking Lots	Stabilize soils to meet the applicable performance standards; and Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.
Vacant Land	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

2.7 Sensitive Receptors

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

Residential areas are considered to be 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. Schools are also considered as sensitive since children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution since exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

The project includes residential land uses and is to be considered as sensitive in nature. Other sensitive land uses, including residential units, are located proximate to the project immediately to the east and south, and to the north across Tetley Street. A parcel containing the St. Thomas' Episcopal Church and St. Peter's CSI Church lies to the immediate west with residential uses beyond that.

3.0 Threshold of Significance Criteria

Presented below are the threshold of significance criteria identified by the SCAQMD relative to this topical issue. In accordance therewith, the proposed project would normally be deemed to produce a significant land use impact if the project or if project-related activities were to:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- 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 standards.
- Expose sensitive receptors to substantial air pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As indicated in Section 15064(i)(1) of the State CEQA Guidelines, "cumulatively considerable" is defined to mean "that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

In order to determine whether or not the proposed project would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of emissions generated, and its impacts on factors that affect air quality. To accomplish this determination of significance, the SCAQMD has established air pollution thresholds against which a proposed project can be evaluated and assist lead agencies in determining whether or not the proposed project is significant. If the thresholds are exceeded by a proposed project, then it should be considered significant.

While the final determination of whether or not a project is significant is within the purview of the lead agency, the SCAQMD recommends that the following air pollution thresholds be used in determining whether the construction or operational phase of a proposed project is significant. As recommended by the SCAQMD, if the lead agency finds that the proposed project has the potential to exceed any of these air pollution thresholds, the project should be considered significant.

3.1 Construction Phase - Thresholds of Significance

The following significance thresholds for air quality have been established by the SCAQMD on a daily basis for construction emissions:

- 75 pounds per day for ROG
- 100 pounds per day for NOx
- 550 pounds per day for CO
- 150 pounds per day of SOx
- 150 pounds per day for PM_{10}
- 55 pounds per day for $PM_{2.5}$

During construction, if any of the identified daily air pollutant thresholds are exceeded by the proposed project, then the project's air quality impacts may be considered significant.

3.2 Operational Phase - Thresholds of Significance

Criteria Pollutants

Specific criteria air pollutants have been identified by the SCAQMD as pollutants of special regional concern. Based upon this categorization, the following significance thresholds have been established by the SCAQMD for project operations:

- 55 pounds per day of ROG
- 55 pounds per day of NOx
- 550 pounds per day of CO
- 150 pounds per day of SOx
- 150 pounds per day of PM_{10}
- 55 pounds per day for $PM_{2.5}$

Projects within the SCAB with daily operational-related emissions that exceed any of the above emission thresholds may be considered significant. The SCAQMD indicates in Chapter 6 of their *Handbook* that they consider a project to be mitigated to a level of insignificance if its primary effects are mitigated below the thresholds provided above.

Greenhouse Gasses

On September 28, 2010, the SCAQMD presented their proposed significance thresholds for greenhouse gases. At that time they determined a Tier 3 screening significance threshold level of 10,000 MTons CO_2e/year for industrial projects to be adopted where the SCAQMD is the lead agency. Staff also proposed to extend the industrial GHG significance threshold for use by all lead agencies.

Similarly, with regard to numerical residential/commercial GHG significance thresholds, SCAQMD staff presented two options that lead agencies could choose from. Option #1 presents separate numerical thresholds for residential projects (3,500 MTons CO_2e/year), commercial projects (1,400 MTons CO_2e/year), and mixed use projects (3,000 MTons CO_2e/year). Option #2 presents a single numerical threshold for all nonindustrial projects of 3,000 MTons CO_2e/year. If a lead agency chooses one option, it must consistently use that same option for all projects where it is lead agency. The SCAQMD proposal is to recommend the use of Option #2, but allow lead agencies to choose Option #1 if they prefer that approach.

3.3 Local Emission Standards

In addition to the mass daily threshold values presented above, projects that have the ability to exceed or add measurably to an existing excess of the ambient concentrations presented in Table 1 may be considered significant. The following localized significance thresholds have been established by the SCAQMD for individual projects:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm
- California State 1-hour NO_2 standard of 0.18 ppm
- SCAQMD 24-hour construction PM_{10} and $PM_{2.5}$ standards of 10.4 $\mu g/m^3$
- SCAQMD 24-hour operational PM_{10} and $PM_{2.5}$ standards of 2.5 $\mu g/m^3$

If ambient levels already exceed a State or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. In the case of CO, the SCAQMD defines a

measurable amount as 1.0 ppm or more for the 1-hour CO concentration or 0.45 ppm or more for the 8-hour CO concentrations. However, since the Basin has come into attainment of all CO standards, elevated CO concentrations are no longer a concern. The SCAQMD indicates that they consider a project to be mitigated to a level of insignificance if its secondary effects are mitigated below these thresholds.

4.0 Environmental Impacts and Mitigation Measures

The Tetley Street residential development project site is used as a community church and preschool. The structures are estimated at approximately 3,156 square feet for the community church with an additional 4,320 square feet used for a pre-school. Both would be removed at project implementation.

The subsequent use includes the construction and operation of a 33-unit, semi-attached, multifamily housing project with a total floor area of 56,100 square feet on the 2.16-acre parcel of land. The conceptual site plan is included in Figure 2.

Figure 2
CONCEPTUAL SITE PLAN

Projected air emissions are calculated using the California Emissions Estimator Model (CalEEMod Version 2013.3.2) distributed by the SCAQMD. The CalEEMod model uses EMFAC2011 emissions factors for vehicle traffic and the OFFROAD2011 emissions factors for construction equipment.

There is a problem in that the CalEEMod model miscalculates vehicle emissions when the default trip generation rates are modified. Therefore, vehicle emissions projected by the model were updated to represent the latest ITE values as provided by RK with the derivation of these emissions detailed further in this analysis.

For the purposes of this analysis, construction is estimated to begin on January 3, 2022 following the CalEEMod default construction schedule. Based on the CalEEMod default construction schedule of 269 actual construction days (does not include weekends), this would complete construction on January 12, 2023 allowing for full occupancy in that year. Daily construction emissions are based on the higher of the summer or winter emissions, regardless of when they actually would occur.

The subsequent occupation of the site in 2023 is also based on the CalEEMod model using the traffic-projections provided by RK. It should be noted here that the RK study is based on the most current version of the *ITE Trip Generation Manual* (10th Edition), whereas the CalEEMod model was released before the new ITE manual and uses the prior version (9th Edition) of the manual for its vehicle projections. As such, the trip generation rates provided by RK were used to modify emissions projected in the CalEEMod model runs.

Again, the project would remove existing land uses, including an operational community church and a preschool. For the purposes of this analysis, the emissions associated with each of these land uses was also modeled using the CalEEMod model so the net change in emissions could be determined.

For ease of the reader, the analysis follows the format included in the California CEQA Guidelines, Appendix G: Environmental Checklist Form for Section III. AIR QUALITY and Section VII. GREENHOUSE GAS EMISSIONS addressing each issue included in those sections, respectively.

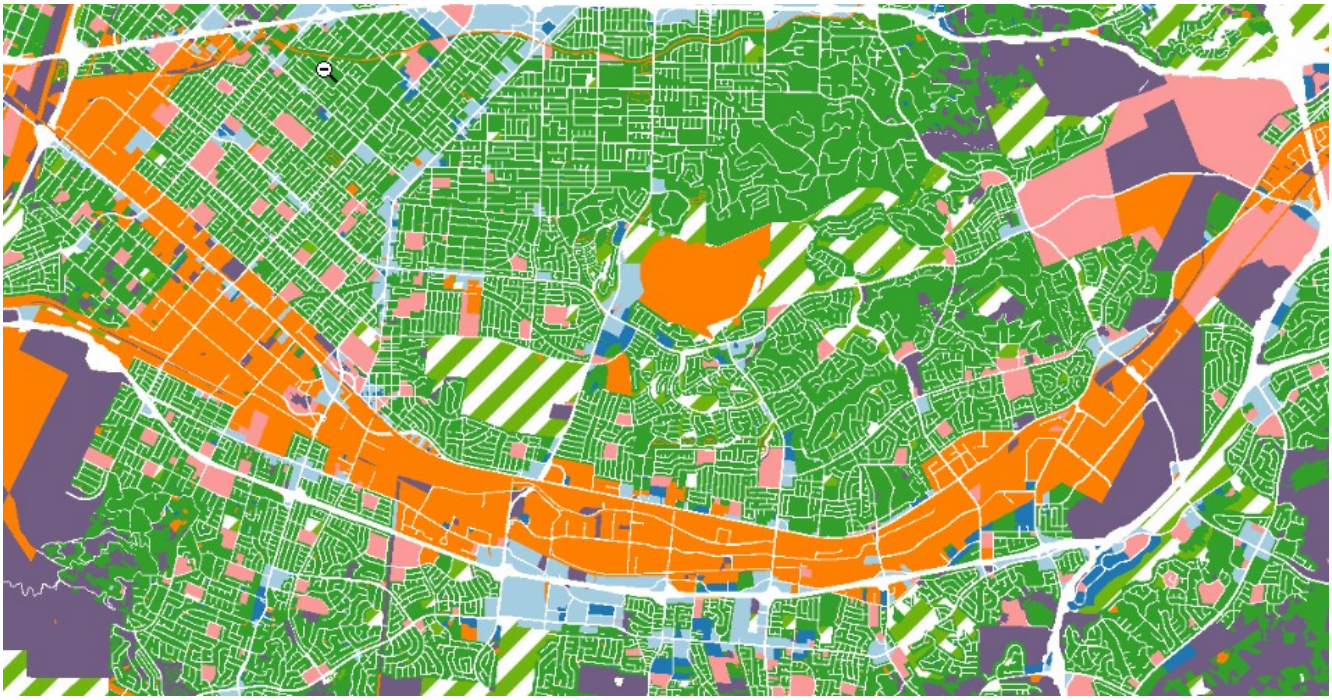
4.1 Project Potential to Conflict With or Obstruct Implementation of the Applicable Air Quality Plan?

Less than Significant Impact. CEQA requires that projects be consistent with the AQMP. A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the AQMP in the following ways: (1) it fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are fully addressed; and (2) it provides the local agency with ongoing information assuring local decision-makers that they are making real contributions to clean air goals contained in the AQMP.

Only new or amended general plan elements, specific plans, and regionally significant projects need to undergo a consistency review. This is because the AQMP strategy is based on projections from local general plans. Projects that are consistent with the local general plan are, therefore, considered consistent with the air quality management plan. The *County of Los Angeles Existing General Plan* land use designations are included in Figure 3 with green representing residential uses. The project is located in the residential designation just west of Hacienda and south of Tetley Street.

As proposed, the Applicant seeks approval for a 33-unit residential development on 2.16 acres of land. The project represents infill development. Neither the construction (Table 5) nor the operation (Table 8) of the project is projected to exceed the daily threshold values suggested by the SCAQMD. Additionally, the project would not result in significant localized air quality impacts. As such, the project is consistent with the goals of the AQMP and, in that respect, does not present a significant air quality impact.

Figure 3
COUNTY OF LOS ANGELES EXISTING GENERAL PLAN LAND USE DESIGNATIONS



4.2 Project Potential to 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?

4.2.1 Construction Impacts

Less than Significant Impact. The potential air quality impacts associated with and attributable to the construction and operation of the project are addressed separately below.

Equipment, Vehicles, and Dust

Air quality impacts may occur during demolition, site preparation, and construction activities required to implement the proposed land use. Major sources of emissions during construction include exhaust emissions, fugitive dust generated as a result of soil disturbance during site preparation and grading activities, and the emission of ROGs during the painting of the structures.

As noted, the project involves the construction of 33 residential townhouse units. Based on the proposed land use, by default the CalEEMod model allocates the construction over 269 working days and this schedule was retained for the analysis. Construction is assumed to begin on January 3, 2022 and end on January 12, 2023 allowing for full occupancy in 2023.

The project site is used as a community church and preschool, totaling about 7,500 square feet to be removed at project implementation. Additionally, approximately 0.75 acres of paving would be removed during demolition.

With respect to the demolition of the existing structures, the CalEEMod model estimates that each square foot of floor area generates 0.046 ton of waste material.

7,500 square feet x 0.046 ton/square foot = 345 tons

Typical paving would have a depth of 6 inches. Based on an area of about 0.75 acre and a depth of 0.5 foot:

0.75 acre x 43,560 square feet/acre x 0.5 foot / 27 cubic feet/cubic yard = 605 cubic yards to be removed

Asphaltic concrete has a weight of about 3,780 pounds per cubic yard.

605 cubic yards x 3,780 pounds per cubic yard = 1,186,900 pounds / 2,000 pounds/ton = 1,143 tons

The total amount of material to be removed is then calculated below:

345 tons + 1,143 tons = 1,488 tons

The CalEEMod model default puts site demolition at 20 days. The CalEEMod model assumes that this movement of materials would generate 147 truck hauls over the 20 day period, or about seven to eight hauls per day.

With respect to the installation of residential paving, the CalEEMod model calculates the equipment and worker trip emissions, but does not calculate the off-gas emissions from the application of the asphalt. The CalEEMod sets a default area paved for residential structures that is neither user adjustable, *nor is it disclosed in any of the CalEEMod literature*. However, because the off-gassing emissions from paving residential development are typically so small, the model doesn't even calculate or present them. On the other hand, the CalEEMod literature does indicate that the model uses a value of 2.62 pounds of ROG per acre paved divided over the paving schedule in the development of parking lots.

Approximately 0.75 acres of the site would be paved to include parking and driveways over the default period of 10 working days:

0.75 acre x 2.62 pounds per acre / 10 days = 0.20 pound per day

SCAQMD's Rule 403 governs fugitive dust emissions from construction projects. This rule sets forth a list of control measures that must be undertaken for all construction projects to ensure that no dust emissions from the project are visible beyond the property boundaries. Adherence to Rule 403 is mandatory and as such, does not denote mitigation under CEQA. The following analysis assumes the use of the minimal measures specified in Rule 403 that overlap between the rule and the CalEEMod model. These include: (1) soil stabilizers shall be applied to unpaved roads; (2) ground cover shall be quickly applied in all disturbed areas; and (3) the active construction site shall be watered twice daily. The model assigns a control efficiency of 55 percent for twice daily watering and a similar efficiency was assumed for other controlled dust-producing, heavy equipment activities. In actuality, Rule 403 specifies several measures that the CalEEMod model does not consider (Table 4), so the modeled PM_{10} and $PM_{2.5}$ emissions associated with fugitive dust are considered conservative.

Table 5 includes the daily emissions projected for site construction. Note that all emissions are within their respective threshold values and the impact is less than significant. Furthermore, all values are so low such that even if phases were to overlap, the impact would remain less than significant.

Table 5
COMPARISON OF PROJECTED CONSTRUCTION EMISSIONS AND DAILY CRITERIA VALUES (pounds/day)[1]

Source	ROG	NOx	CO	SO_2	PM_{10} Dust	PM_{10} Exhaust	PM_{10} Total	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	$PM_{2.5}$ Total
Demolition										
Off Road Diesel	1.69	16.62	13.96	0.02	0.32	0.84	1.16	0.05	0.78	0.83
On Road Diesel	0.06	1.85	0.48	0.01	0.13	0.01	0.13	0.04	0.01	0.04
Worker Trips	0.06	0.04	0.48	0.00	0.15	0.00	0.15	0.04	0.00	0.04
Totals	1.81	18.51	14.92	0.03	0.60	0.85	1.44	0.13	0.79	0.91
Site Preparation										
Off Road Diesel	1.39	15.67	10.06	0.02	0.32	0.60	0.92	0.03	0.55	0.58
Worker Trips	0.04	0.02	0.27	0.00	0.09	0.00	0.09	0.02	0.00	0.02
Totals	1.43	15.69	10.33	0.02	0.41	0.60	1.01	0.05	0.55	0.60
Grading										
Off Road Diesel	1.54	16.98	9.22	0.02	1.33	0.74	2.07	0.68	0.68	1.36
Worker Trips	0.04	0.03	0.37	0.00	0.11	0.00	0.11	0.03	0.00	0.03
Totals	1.58	17.01	9.59	0.02	1.44	0.74	2.18	0.71	0.68	1.39
Building Construction										
Off Road Diesel	1.86	14.60	14.35	0.02	0.00	0.70	0.70	0.00	0.67	0.67
Vendor Trips	0.01	0.37	0.11	0.00	0.03	0.00	0.03	0.01	0.00	0.01
Worker Trips	0.11	0.07	0.89	0.00	0.27	0.00	0.27	0.07	0.00	0.07
Totals	1.98	15.04	15.35	0.02	0.30	0.70	1.00	0.08	0.67	0.75
Asphalt Paving										
Off-Gas	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off Road Diesel	0.94	9.33	11.70	0.02	0.00	0.49	0.49	0.00	0.45	0.45
Worker Trips	0.07	0.04	0.56	0.00	0.17	0.00	0.17	0.04	0.00	0.05
Asphalt Totals	1.21	9.37	12.26	0.02	0.17	0.49	0.66	0.04	0.45	0.50
Coating										
Off-Gas	35.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off Road Diesel	0.20	1.41	1.81	0.00	0.00	0.08	0.08	0.00	0.08	0.08
Worker Trips	0.02	0.01	0.19	0.00	0.06	0.00	0.06	0.01	0.00	0.02
Coating Totals	35.32	1.42	2.00	0.00	0.06	0.08	0.14	0.01	0.08	0.10
Daily Threshold	75	100	550	150	→	→	150	→	→	55
Exceeds Threshold?	No	No	No	No			No			No

Notes:
[1] The CalEEMod model projects summer and winter emissions and the higher of the two values is included in the table.

4.2.2 Operational Impacts

Less than Significant Impact. The major source of long-term air quality impacts is that associated with the emissions produced from project-generated vehicle trips. Stationary sources add only minimally to these values.

As previously noted, this analysis assumes that the project includes the operation of 33 semi-attached townhomes and their operation would result in the generation of emissions. However, the project is to replace a community church and preschool. These existing uses would also generate both mobile and stationary source emissions. As

such, these emissions (Year 2023) were also quantified using the CalEEMod model to determine the net difference in project implementation.

RK estimates that based on the *ITE Trip Generation Manual* (*10th Edition*), the proposed project would generate 242 Average Daily Trips (ADT) on a weekday. The ITE Trip Generation Manual also specifies that the project would generate 8.14 trips per unit on a Saturday (269 ADT), and 6.28 trips per unit on a Sunday (207 ADT).

With respect to summer and winter daily emissions, the CalEEMod model reports the day with the highest emissions production, which in this case actually works out to be Saturday. The estimations of weekday and Sunday values are used in the calculation of the annual and greenhouse gas emissions.

Furthermore, the emissions generated by the use of the existing church and preschool would be removed. For the church, the *ITE Manual* (*10th Edition*) puts the weekday ADT at 6.95 trips per thousand square feet, 5.99 trips per day per thousand square feet on a Saturday, and 27.63 trips per day per thousand square feet on a Sunday. Based on the estimated 3,156 square feet for the existing use, the weekday ADT is estimated at 22 trips, the Saturday ADT at 19 trips, and Sundays at 87 trips. Existing emissions would peak on a Sunday and this value would be used in the CalEEMod peak day analysis.

As noted, the site also includes a preschool. RK estimates use ITE Code 565 for the preschool. The CalEEMod model includes grammar schools and day-care centers, but does not include preschools in the included land uses. RK estimates that based on an area of 4,320 square feet, in accordance with the *ITE 10th Edition*, the preschool generates 47.62 trips per thousand square feet on a weekday. RK also estimates that the preschool generates about six trips per thousand square feet on a Saturday or Sunday. Based on these trip rates, the preschool generates about 206 ADT on a weekday and about 25 ADT on a Saturday or Sunday.

In this case, the peak emissions for the proposed land use, as well as the two existing uses all fall on different "days" (i.e. Saturday, Sunday, and weekday). Therefore for the purposes of this analysis, while daily peak emission days are displayed in the model runs and their associated tables, the net change in daily emissions is taken from the yearly emissions divided by 365 days per year. Furthermore, each of the three land uses is modeled separately so that direct comparisons may be considered. In this case, modeling for each land use is conducted for the year 2023, and as such, these would be "future existing conditions" for the existing uses.

It should be noted that there is an error in the CalEEMod model in that when changing the trip generation rates from the default *ITE Manual 9th Edition* to the values included in the *ITE Manual 10th Edition*, the model miscalculates the resultant emissions. While the difference is fairly small for residential land uses, it is quite large in the case of churches. *The error is known to all California Air Districts as well as Trinity Consultants who administer the model.*

To get around this error, the following methodology was used.

The project, church, and preschool were all modeled using the CalEEMod default trip rates for summer, winter, and annual emissions. Theoretically, this provides the proper emissions for the miles traveled as the trip rates are unaltered.

Because there are three "types of trips" (i.e., Home-to-Work, Home-to-Shop, and Home-to-Other) and each has a different length, one cannot simply compare the projected difference in the number of Average Daily Trips (ADT) projected by the *ITE 9th Edition*, and scale that value up or down to the values in the *ITE 10th Edition* and adjust the daily emissions accordingly.

However, the model also projects the total yearly emissions as well as the total annual mileage. By dividing the total annual emissions by the total annual miles, one can determine an "emission's per mile value." And because

the total annual emissions consider such things as summer and winter conditions, hot and cold starts, hot soaks, and road dust; and the three trip-types are considered in the calculation, the value is "all-inclusive."

Therefore:

- The model run for the annual emissions was examined and the total annual mileage and pollutant emissions' values per mile traveled were ascertained using the model's default (*ITE 9th Edition*) values.

- The trip rates were then altered to reflect the values included in the *ITE 10th Edition* and the CalEEMod model was re-run to determine total annual mileage.

- The total mileage determined using the *ITE 10th Edition* values was divided by the total mileage determined using the *ITE 9th Edition* and a percentage increase/decrease was ascertained. This percentage was then applied to each pollutant species to determine the new average daily pollutant loading.

- The annual pollutant values were then divided by 365 to determine the average daily pollutant values.

- Because impacts are based on the maximum day's pollutant loading, and not the annual average, the peak day loading from the *ITE Manual 9th Edition* was compared with its annual average day value and a percentage increase was ascertained. This same percentage is then applied to the new annual average daily loading based on the percentage change associated with the *ITE 10th Edition*.

All calculations are included in the appendix. Again, in the case of peak day emissions, both summer and winter scenarios were modeled and the higher of the two values is included in Tables 6, 7, and 8. Note all emissions are within their criteria values and the impact is less than significant.

Table 6
COMPARISON OF PROJECTED PEAK (SUNDAY) AND ANNUAL AVERAGE DAILY OPERATIONAL EMISSIONS FOR THE EXISTING CHURCH AND DAILY CRITERIA VALUES (pounds/day)[1]

Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Peak Day Emissions (Sunday)						
Mobile Sources	0.12	0.47	2.85	0.01	0.39	0.11
Natural Gas	0.00	0.02	0.01	0.00	0.00	0.00
Structural Maintenance	0.01	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.06	0.00	0.00	0.00	0.00	0.00
Landscape Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Total Daily Emissions	0.19	0.48	2.86	0.01	0.39	0.11
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No
Annual Average Daily Emissions						
Mobile Sources	0.03	0.17	0.46	0.00	0.17	0.04
Natural Gas	0.00	0.02	0.01	0.00	0.00	0.00
Structural Maintenance	0.01	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.06	0.00	0.00	0.00	0.00	0.00
Landscape Maintenance	0.00	0.00	0.00	0.00	0.00	0.00

Total Daily Emissions	0.10	0.19	0.47	0.00	0.17	0.04
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] The CalEEMod model projects summer and winter emissions. These can differ for mobile sources and the higher of the two values were included in the table.

Table 7
COMPARISON OF PROJECTED PEAK (WEEKDAY) AND ANNUAL AVERAGE DAILY OPERATIONAL EMISSIONS FOR THE EXISTING PRESCHOOL AND DAILY CRITERIA VALUES (pounds/day)[1]

Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Peak Day Emissions (Weekday)						
Mobile Sources	0.26	0.99	2.40	0.01	0.65	0.18
Natural Gas	0.00	0.01	0.01	0.00	0.00	0.00
Structural Maintenance	0.01	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.09	0.00	0.00	0.00	0.00	0.00
Landscape Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Total Daily Emissions	0.36	1.00	2.41	0.01	0.65	0.18
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No
Annual Average Daily Emissions						
Mobile Sources	0.18	0.75	1.75	0.01	0.47	0.13
Natural Gas	0.00	0.01	0.01	0.00	0.00	0.00
Structural Maintenance	0.01	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.09	0.00	0.00	0.00	0.00	0.00
Landscape Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Total Daily Emissions	0.28	0.76	1.76	0.01	0.47	0.13
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] The CalEEMod model projects summer and winter emissions. These can differ for mobile sources and the higher of the two values were included in the table.

Table 8
COMPARISON OF PROJECTED PEAK (SATURDAY) AND ANNUAL AVERAGE DAILY OPERATIONAL EMISSIONS FOR THE PROPOSED PROJECT AND DAILY CRITERIA VALUES (pounds/day)[1]

Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Peak Day Emissions (Saturday)						
Mobile Sources	0.41	1.73	6.27	0.02	1.81	0.50
Natural Gas	0.02	0.24	0.10	0.00	0.02	0.02
Structural Maintenance	0.10	0.00	0.00	0.00	0.00	0.00

Consumer Products	1.11	0.00	0.00	0.00	0.00	0.00
Landscape Maintenance	0.08	0.03	2.72	0.00	0.02	0.02
Hearths[2]	9.94	0.72	19.51	0.04	2.54	2.54
Total Daily Emissions	11.66	2.72	28.60	0.06	4.39	3.08
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No
Annual Average Daily Emissions						
Mobile Sources	0.37	1.71	5.25	0.02	1.71	0.47
Natural Gas	0.02	0.14	0.06	0.00	0.01	0.01
Structural Maintenance	0.09	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.11	0.00	0.00	0.00	0.00	0.00
Hearths[2]	0.59	0.05	1.15	0.00	0.18	0.18
Landscape Maintenance	0.06	0.02	1.87	0.00	0.01	0.01
Total Daily Emissions	2.24	1.92	8.33	0.02	1.91	0.67
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] The CalEEMod model projects summer and winter emissions. These can differ for mobile sources and the higher of the two values were included in the table.
[2] No "hearths/fireplaces" are proposed for the development, but are reported by the model. Resultant values are sufficiently low such that for the purposes of this analysis, these emissions have been retained in the inventory. Also note the difference between peak day and annual average for these emissions resulting from their limited use over the course of the year.

Table 8 demonstrates that even if no land uses were removed, the project would not result in significant impacts with respect to the daily threshold levels suggested by the SCAQMD.

But, the project would displace an existing community church and preschool. Table 9 compares the net increase in annual average daily emissions associated with the project and existing land uses. Again, all values are less than the suggested significance threshold levels and the impact is less than significant.

Table 9
COMPARISON OF PROJECTED ANNUAL AVERAGE DAILY OPERATIONAL EMISSIONS FOR THE PROPOSED PROJECT LESS THE EXISTING LAND USES
(pounds/day)

Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Proposed Project Annual Average Daily Emissions						
Proposed Project Annual Average Daily Emissions	2.24	1.92	8.33	0.02	1.91	0.67
Proposed Project Minus Existing Church and Preschool Annual Average Daily Emissions						
Proposed Project Annual Average Daily Emissions	2.24	1.92	8.33	0.02	1.91	0.67
Existing Church Annual Average Daily Emissions[1]	0.10	0.19	0.47	0.00	0.17	0.04
Existing Preschool Annual Average Daily Emissions	0.28	0.76	1.76	0.01	0.47	0.13

Net Daily Increase	1.86	0.97	6.10	0.01	1.27	0.50
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

4.3 Project Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations

4.3.1 Short-Term Localized Impacts

Less than Significant Impact. In addition to the mass daily threshold standards discussed above, project construction has the potential to raise localized ambient pollutant concentrations. This could present a significant impact if these concentrations were to exceed the ambient air quality standards included in Table 1 at receptor locations.

The SCAQMD has developed screening tables for the construction and operation of projects up to five acres in size. These tables are included in the SCAQMD's *Final Localized Significance Threshold Methodology* (June 2003) and are periodically updated on the SCAQMD Internet web site. The most current update was in 2008 and these data are use in the analysis. It should be noted that the emissions values included in the screening tables are based on the emissions produced from on-site sources and do not include off-site mobile source emissions (i.e., trucks and worker vehicles) that are spread over a much larger area. Rather than using the entirety of the site, the CalEEMod emissions model bases the area of disturbance on equipment use. Dozers, graders, and crawler tractors are estimated to disturb an area of 0.5 acre while scrapers are estimated to disturb 1.0 acre over an 8-hour work day.

The CalEEMod model estimates that grading would cover an area of 1 acre per day resulting in the highest levels of daily particulate emissions. Site preparation results in lower particulate levels and disturbs an area of 1.5 acres per day. Because the airborne concentrations are directly proportional to the amount of emissions released and inversely proportional to the area over which they are spread, grading results in the higher concentrations and greatest potential for impact serving as the worse of the two cases.

The screening tables include sites of 1, 2, and 5 acres with receptors at 25, 50, 100, 200, and 500 meters away. The provided methodology notes that site sizes and receptor distances that lie between those values included in the screening manual may be determined by linear interpolation. The methodology also denotes that the 25 meter distance is the minimum distance to be used, even if receptors are located closer than this distance.

Local sensitive land uses, including residential units, are located proximate to the project immediately to the east and south, and to the north across Tetley Street. A parcel containing St. Thomas' Episcopal Church and St. Peter's CSI Church lies to the immediate west with residential uses beyond that. Based on these locations, the 25 meter minimal distance was used in the analysis.

Allowable emissions are based on the source receptor area in which they are produced. In this case, the project lies within SRA 10 (Pomona/Walnut Valley) and the screening level for a 1-acre site for CO with receptors at 25 meters is 612 pounds per day. Similarly, the screening level for a 1-acre site for NO_2 with receptors at 25 meters is 103 pounds per day. At peak values of 9.22 and 16.98 pounds per day for CO and NOx, respectively during grading, these construction emissions would not create localized impacts.

Because the Basin is a non-attainment area for particulate matter, the thresholds for both PM_{10} and $PM_{2.5}$ are much more stringent than those for CO and NOx. In this case, the screening level for a 1-acre site for PM_{10} with receptors at 25 meters is 4 pounds per day. At 2.07 pounds per day, PM_{10} would not exceed the value presented in the screening table.

Similarly, the screening level for a 1-acre site for $PM_{2.5}$ with receptors at 25 meters is 3 pounds per day, and at 1.36 pounds per day, $PM_{2.5}$ also would not exceed the value presented in the screening table and no significant localized impacts would occur.

4.3.2 Long-Term Localized Impacts, Off-site Criteria Pollutants

Less than Significant Impact. Long-term effects of the proposed project could also be significant if they exceed the CAAQS. As noted for construction, these criteria only apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. CO and NO_2 would be significant if the project were to raise existing levels above those values included in the CAAQS. Again, because the Basin is a non-attainment area for particulate matter, the operational thresholds for both PM_{10} and $PM_{2.5}$ are set at a measurable increase of 2.5 $\mu g/m^3$.

Unlike construction equipment that generates exhaust and dust in a set area, the primary source of emissions from project operations is due to the addition of vehicles on the roadway system. These emissions are then spread over a vast area and do not result in localized concentrations in proximity to the project site. As such, localized modeling for the project operations is not prepared for residential, limited commercial, or light industrial development that does not include a truck terminal.

Because CO is the criteria pollutant that is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, long-term adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. In the past, areas of vehicle congestion had the potential to create "pockets" of CO called "hot spots." However, the SCAB has now been designated as an Attainment area of both the State and federal CO standards, and no hot spots have been reported in project area in more than the last 5 years. CO is no longer a localized pollutant of concern near roadways and as such this analysis is no longer necessary.

4.4 Project Potential to Create Objectionable Odors

Less than Significant Impact. Project construction would involve the use of heavy equipment creating exhaust pollutants from on-site earth movement and from equipment bringing asphalt and other building materials to the site. With regards to nuisance odors, any air quality impacts will be confined to the immediate vicinity of the equipment itself. By the time such emissions reach any sensitive receptor sites away from the project site, they will be diluted to well below any level of air quality concern. An occasional "whiff" of diesel exhaust from passing equipment and trucks accessing the site from public roadways may result. Such brief exhaust odors are an adverse but less-than-significant, air quality impact. Additionally, some odor would be produced from the application of asphalt, paints, and coatings. Any exposure to these common odors would be of short-term duration and, while potentially adverse, are less than significant.

Operational odors could be produced from on-site food preparation. These odors are common in the environment and would not constitute a significant impact.

4.5 Project Potential to Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that may have a Significant Impact on the Environment

Less than Significant Impact. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the SCAQMD has convened a GHG CEQA Significance Threshold Working Group. The SCAQMD is in the process of establishing a threshold for GHG emissions to determine a project's regional contribution toward global climate change impacts for California.

On December 5, 2008, SCAQMD recommended actions for determination of greenhouse gas significance. The recommendations were tiered to determine what projects would be subject analysis and mitigation.

- Tier 1 consists of determining if the project would be quality for exemption under CEQA.

- Tier 2 consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines §§15064(h)(3), 15125(d), or 15152(a). The GHG reduction plan must, at a minimum, comply with AB 32 GHG reduction goals; include emissions estimates agreed upon by either CARB or the AQMD, have been analyzed under CEQA, and have a certified Final CEQA document. Further, the GHG reduction plan must include a GHG emissions inventory tracking mechanism; process to monitor progress in achieving GHG emission reduction targets, and a commitment to remedy the excess emissions if GHG reduction goals are not met (enforcement). If the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If the project is not consistent with a local GHG reduction plan, there is no approved plan, or the GHG reduction plan does not include all of the components described above, the project would move to Tier 3.

- Tier 3 establishes a screening significance threshold level of 10,000 MTons per year for industrial facilities. This is based on a 90 percent emission capture rate. If a project exceeds the GHG screening significance threshold level and GHG emissions cannot be mitigated to less than the screening level, the project would move to Tier 4.

- Tier 4 consists of a "decision tree" that would allow lead agencies one of three compliance options based on performance standards. Tier 4 was not recommended for approval by the SCAQMD.

- Tier 5 would allow a Project Proponent to implement off-site mitigation to reduce applicant emissions to less than screening levels.

As noted, the tiered approach above was intended for industrial facilities. With respect to residential development, to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors and implement a "fair share" approach to reducing emission increases from each sector, staff discussed with the working group a proposal combining performance standards and screening thresholds. The performance standards primarily focus on energy efficiency measures beyond Title 24 and a screening level of 3,000 Mtons CO_2e/year based on the relative GHG emissions contribution between residential/commercial sectors and stationary source (industrial) sectors. With respect to construction, the SCAQMD recommends that the construction emissions be totaled and amortized over a period of 30 years, then added to the emissions generated by the project's operation.

On September 28, 2010, the SCAQMD presented their proposed significance thresholds for greenhouse gases. At that time they determined a Tier 3 screening significance threshold level of 10,000 MTons CO_2e/year for industrial projects to be adopted where the SCAQMD is the lead agency. Staff also proposed to extend the industrial GHG significance threshold for use by all lead agencies.

Similarly, with regard to numerical residential/commercial GHG significance thresholds, SCAQMD staff presented two options that lead agencies could choose from. Option #1 presents separate numerical thresholds for residential projects (3,500 MTons CO_2e/year), commercial projects (1,400 MTons CO_2e/year), and mixed use projects (3,000 MTons CO_2e/year). Option #2 presents a single numerical threshold for all nonindustrial projects of 3,000 MTons CO_2e/year. If a lead agency chooses one option, it must consistently use that same option for all projects where it is lead agency. The SCAQMD proposal is to recommend the use of Option #2, but allow lead agencies to choose Option #1 if they prefer that approach.

For the purposes of this analysis, the impact would be considered as significant if the project were to generate greenhouse gases in excess of the recommendation by the SCAQMD for Option #2 land uses (i.e., 3,000 MTons CO_2e/year).

Construction

The CalEEMod default estimates that construction would take 269 working days to complete. For the purposes of this analysis, construction is assumed to begin on January 3, 2022 and end on January 12, 2023 allowing for full occupancy in 2023.

Construction activities would consume fuel and result in the generation of greenhouse gases. Construction CO_2e emissions are as projected using the CalEEMod computer model and included in Table 10.

Table 10
CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS
(Mtons/year)

Year	CO_2	CH_4	N_2O	Total CO_2e[1]
2022	309.93	0.06	0.00	311.34
2023	1.36	0.00	0.00	1.36
Total	311.29	0.06	0.00	312.70
Total per Year[2]	10.38	0.00	0.00	10.42

Notes:
[1] Because different gases have different conversion factors, totals may not equal.
[2] Averaged over a period of 30 years.

Site Operations

In the case of site operations, the majority of greenhouse gas emissions, and specifically CO_2, is due to vehicle travel and energy consumption. Again, the existing land uses would also produce emissions that would be removed with project implementation.

Tables 11, 12, and 13 show the annual greenhouse gas emissions for the existing church, preschool, and the proposed development. In the case of the proposed development, the emissions also include the construction emissions presented in Table 10 as averaged over 30 years.

Table 11
YEARLY OPERATIONAL GREENHOUSE GAS EMISSIONS
FOR THE EXISTING CHURCH
(Mtons/year)

Source	CO_2	CH_4	N_2O	Total CO_2e[1]
Mobile Sources	27.89	0.00	0.00	27.92
Electricity	19.51	0.00	0.00	19.55
Natural Gas	3.05	0.00	0.00	3.07
Landscape Maintenance	0.00	0.00	0.00	0.00
Water Use	1.71	0.00	0.00	1.81
Waste Disposal	3.66	0.22	0.00	9.06
Total Yearly Emissions	55.82	0.22	0.00	61.41

Threshold	---	---	---	3,000
Exceeds Threshold?				No

Notes:
[1] Because different gases have different conversion factors, totals may not equal.

Table 12
YEARLY OPERATIONAL GREENHOUSE GAS EMISSIONS
FOR THE EXISTING PRESCHOOL
(Mtons/year)

Source	CO_2	CH_4	N_2O	Total CO_2e[1]
Mobile Sources	98.77	0.01	0.00	98.90
Electricity	14.24	0.00	0.00	14.27
Natural Gas	2.40	0.00	0.00	2.41
Landscape Maintenance	0.00	0.00	0.00	0.00
Water Use	4.35	0.01	0.00	4.55
Waste Disposal	1.14	0.07	0.00	2.83
Total Yearly Emissions	120.90	0.09	0.00	122.96
Threshold	---	---	---	3,000
Exceeds Threshold?				No

Notes:
[1] Because different gases have different conversion factors, totals may not equal.

Table 13
YEARLY OPERATIONAL GREENHOUSE GAS EMISSIONS
FOR THE PROPOSED PROJECT
(Mtons/year)

Source	CO_2	CH_4	N_2O	Total CO_2e[1]
Mobile Sources	337.25	0.02	0.00	337.66
Electricity	92.63	0.00	0.00	92.82
Natural Gas	30.25	0.00	0.00	30.43
Hearth[2]	10.24	0.01	0.00	10.57
Landscape Maintenance	0.56	0.00	0.00	0.57
Water Use	24.66	0.07	0.00	26.96
Waste Disposal	3.08	0.18	0.00	7.63
Sub-Total	498.67	0.28	0.00	879.00
Construction Amortization	10.38	0.00	0.00	10.42
Total Yearly Emissions	509.05	0.28	0.00	889.42
Threshold	---	---	---	3,000
Exceeds Threshold?				No

Notes:
[1] Because different gases have different conversion factors, totals may not equal.
[2] No "hearths/fireplaces" are proposed for the development, but are reported by the model. Resultant values are sufficiently low such that for the purposes of this analysis, these emissions have been retained in the inventory.

As shown in Table 13, the CalEEMod model projects that for the proposed development, combined, mobile, area source, energy, waste, and water conveyance would generate 879.00 Mtons of CO_2e on an annual basis. When the construction emissions are amortized over 30 years (i.e., 10.42 Mtons of CO_2e) and added to this value, the total is increased to 889.42 Mtons of CO_2e per year. This value is under the suggested threshold of 3,000 Mtons per year and the impact is less than significant.

But, again, the project would displace an existing community church and preschool. Table 14 compares the net increase in annual greenhouse gas emissions associated with the project and existing land uses. Again, all values are less than the suggested significance threshold level and the impact is less than significant.

Table 14
COMPARISON OF PROJECTED ANNUAL GREENHOUSE GAS EMISSIONS FOR THE PROPOSED PROJECT MINUS THE EXISTING LAND USES
(pounds/day)

Source	CO_2	CH_4	N_2O	Total CO_2e[1]
Proposed Project Annual Emissions				
Proposed Project	509.05	0.28	0.00	889.42
Proposed Project Minus Existing Church and School Annual Emissions				
Proposed Project	509.05	0.28	0.00	889.42
Existing Church[1]	55.82	0.22	0.00	61.41
Existing Preschool	120.90	0.09	0.00	122.96
Net Daily Increase	332.33	[0.03]	0.00	705.05
Threshold	---	---	---	3,000
Exceeds Threshold?				No

[1] Due to an inherent flaw in the CalEEMod model for Places of Worship, these values are underestimated by a factor of over 5 times.

4.6 Project potential to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Less than Significant Impact. An impact can also be potentially significant if the project does not comply with the applicable plans necessary for the reduction of greenhouse gases.

The SCAQMD notes that it may be likely that projects can achieve the 2035 efficiency threshold because the SB375 target GHG reductions are expected to be met primarily through cleaner vehicles as a result of fleet turnover and reducing VMT. Consequently, fleet turnover plus a small increment of GHG reductions from land use projects could potentially achieve the 2035 efficiency threshold.

The Los Angeles County *Community Climate Action Plan* discusses the County's Emissions Reductions Target of 11 percent below 2010 levels by 2020 through the implementation of various measures and programs. With respect to residential development, the CCAP notes that adherence to Title 24 Standards coupled with the *encouragement* for energy efficiency in new development and the removal of restrictions for "cool roofs" will satisfy the County requirements of AB 32.

Commensurate with the CCAP, the project will:

- Ensure Title 22 compatibility for environmentally friendly roofs and pavements. (Green Building Development, BE-1)

- All garages shall be fitted for electric vehicle support with no less than 240 volt, 40 amp service. (Electric Vehicle Infrastructure, LUT-8)
- Idle Reduction Signs (5 Minute Limit) shall be posted during all construction, and in any guest parking and/or loading areas. (Idle Reduction, LUT-9)
- Include no fewer than one tree per 5,000 square feet of floor area. Based on a proposed area of 76,116 square feet, the project shall include no fewer than 16 trees. Species and planting requirements are as included in the Los Angeles County Code, Part 20, *Tree Planting Requirements* and further described in the Department of Regional Planning *Tree Planting Guide*.

Inclusion of these measures will ensure that the project does not conflict with the County's Community Climate Action Plan and the impact is less than significant.

5.0 References

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APPENDICIES

Appendix A ***CalEEMod Model Results for the Proposed Project's Winter Emissions, ITE 9th Ed***

Appendix B ***CalEEMod Model Results for the Proposed Project's Summer Emissions, ITE 9th Ed***

Appendix C ***CalEEMod Model Results for the Proposed Project's Annual Emissions, ITE 9th Ed***

Appendix D ***CalEEMod Model Results for the Proposed Project's Annual Emissions, ITE 10th Ed***

Appendix E ***CalEEMod Model Results for the Existing Church's Winter Emissions, ITE 9th Ed***

Appendix F ***CalEEMod Model Results for the Existing Church's Summer Emissions, ITE 9th Ed***

Appendix G ***CalEEMod Model Results for the Existing Church's Annual Emissions, ITE 9th Ed***

Appendix H ***CalEEMod Model Results for the Existing Church's Annual Emissions, ITE 10th Ed***

Appendix I ***CalEEMod Model Results for the Existing School's Winter Emissions, ITE 9th Ed***

Appendix J ***CalEEMod Model Results for the Existing School's Summer Emissions, ITE 9th Ed***

Appendix K ***CalEEMod Model Results for the Existing School's Annual Emissions, ITE 9th Ed***

Appendix L ***CalEEMod Model Results for the Existing School's Annual Emissions, ITE 10th Ed***

Appendix M Calculation of Daily Mobile Source Emissions

The model run for the annual emissions was examined and the total annual mileage and pollutant emissions' values per mile traveled were ascertained using the model's default (*ITE 9th Edition*) values.

The trip rates were then altered to reflect the values included in the *ITE 10th Edition* and the CalEEMod model was re-run to determine total annual mileage.

The total mileage determined using the *ITE 10th Edition* values was divided by the total mileage determined using the *ITE 9th Edition* and a percentage increase/decrease was ascertained. This percentage was then applied to each pollutant species to determine the new average daily pollutant loading.

The annual pollutant values were then divided by 365 to determine the average daily pollutant values.

Because impacts are based on the maximum day's pollutant loading, and not the annual average, the peak day loading from the *ITE Manual 9th Edition* was compared with its annual average day value and a percentage increase was ascertained. This same percentage is then applied to the new annual average daily loading based on the percentage change associated with the *ITE 10th Edition*.

Townhomes

The 33 townhomes modeled using the ITE 9th Edition default show 637,289 annual VMT. Using the values included in the 10th Edition, this value comes out to be 821,903 annual VMT.

821,903 VMT / 637,289 VMT = 1.2897 (multiplier factor)

ROG

Annual ROG = 0.0530 tons/yr x 2,000 lb/ton / 365 days/yr = 0.2904 lb/day

0.2904 lb/day x 1.2897 = 0.3745 lb/day

Peak day ROG is then determined from examining the summer and winter daily emissions as modeled using the default *ITE 9th Edition* default, determining which is the higher value, then determining its percentage increase and applying in this percentage to the New Annual average daily value.

Winter ROG (*ITE 9th Edition*) = 0.3063 lb/day
Summer ROG (*ITE 9th Edition*) = 0.3162 lb/day

Because the summer value is higher, it represents the peak day.

0.3162 lb/day / 0.2904 lb/day = 1.0888 (multiplier factor)

ROG = 0.3745 lb/day x 1.0888 = 0.4078 lb/day

NOx

Annual NOx = 0.2420 tons/yr x 2,000 lb/ton / 365 days/yr = 1.3260 lb/day

1.3260 lb/day x 1.2897 = 1.7102 lb/day

Winter NOx (*ITE 9th Edition*) = 1.3097 lb/day
Summer NOx (*ITE 9th Edition*) = 1.3436 lb/day

1.3436 lb/day /1.3260 lb/day = 1.0133 (multiplier factor)

NOx = 1.0133 lb/day x 1.7102 = 1.7329 lb/day

CO

Annual CO = 0.7427 tons/yr x 2,000 lb/ton / 365 days/yr = 4.0696 lb/day

4.0696 lb/day x 1.2897 = 5.2485 lb/day

Winter CO (*ITE 9th Edition*) = 4.1305 lb/day
Summer CO (*ITE 9th Edition*) = 4.8636 lb/day

4.8636 lb/day /4.0696 lb/day = 1.1951 (multiplier factor)

CO = 5.2485 lb/day x 1.1951 = 6.2725 lb/day

SOx

Annual SOx = 2.83×10^{-3} tons/yr x 2,000 lb/ton / 365 days/yr = 0.0155 lb/day

0.0155 lb/day x 1.2897 = 0.0200 lb/day

Winter SOx (*ITE 9th Edition*) = 0.0158 lb/day
Summer SOx (*ITE 9th Edition*) = 0.0166 lb/day

0.0166 lb/day / 0.0155 lb/day = 1.0710 (multiplier factor)

SOx = 0.0200 lb/day x 1.0710 = 0.0214 lb/day

PM_{10}

Annual PM_{10} = 0.2419 tons/yr x 2,000 lb/ton / 365 days/yr = 1.3255 lb/day

1.3255 lb/day x 1.2897 = 1.7095 lb/day

Winter/Summer PM_{10} (*ITE 9th Edition*) = 1.4053 lb/day

1.4053 lb/day / 1.3255 lb/day = 1.0602 (multiplier factor)

PM_{10} = 1.7095 lb/day x 1.0602 = 1.8124 lb/day

$PM_{2.5}$

Annual $PM_{2.5}$ = 0.0668 tons/yr x 2,000 lb/ton / 365 days/yr = 0.3660 lb/day

0.3660 lb/day x 1.2897 = 0.4721 lb/day

Winter/Summer $PM_{2.5}$ (*ITE 9th Edition*) = 0.3841 lb/day

0.3841 lb/day / 0.3660 lb/day = 1.0495 (multiplier factor)

$PM_{2.5}$ = 0.4721 lb/day x 1.0495 = 0.4955 lb/day

Church

The church modeled using the ITE 9th Edition default shows 88,995 annual VMT. Using the values included in the 10th Edition, this value comes out to be 65,827 annual VMT.

65,827 VMT / 88,995 VMT = 0.7397 (multiplier factor)

ROG

Annual ROG = 7.23^{-3} tons/yr x 2,000 lb/ton / 365 days/yr = 0.0396 lb/day

0.0396 lb/day x 0.7397 = 0.0293 lb/day

Peak day ROG is then determined from examining the summer and winter daily emissions as modeled using the default *ITE 9th Edition* default, determining which is the higher value, then determining its percentage increase and applying in this percentage to the New Annual average daily value.

Winter ROG (*ITE 9th Edition*) = 0.1532 lb/day
Summer ROG (*ITE 9th Edition*) = 0.1584 lb/day

Because the summer value is higher, it represents the peak day.

0.1584 lb/day / 0.0396 lb/day = 4.0253 (multiplier factor)

ROG = 0.0293 lb/day x 4.0253 = 0.1179 lb/day

NOx

Annual NOx = 0.0428 tons/yr x 2,000 lb/ton / 365 days/yr = 0.2345 lb/day

0.2345 lb/day x 0.7397 = 0.1735 lb/day

Winter NOx (*ITE 9th Edition*) = 0.6406 lb/day
Summer NOx (*ITE 9th Edition*) = 0.6302 lb/day

0.6406 lb/day /0.2345 lb/day = 2.7318 (multiplier factor)

NOx = 0.1735 lb/day x 2.7318 = 0.4740 lb/day

CO

Annual CO = 0.1139 tons/yr x 2,000 lb/ton / 365 days/yr = 0.6241 lb/day

0.6241 lb/day x 0.7397 = 0.4616 lb/day

Winter CO (*ITE 9th Edition*) = 1.7163 lb/day
Summer CO (*ITE 9th Edition*) = 1.7793 lb/day

1.7793 lb/day / 0.6241 lb/day = 2.8510 (multiplier factor)

CO = 0.4616 lb/day x 2.8510 = 1.3160 lb/day

SOx

Annual SOx = 4.10×10^{-4} tons/yr x 2,000 lb/ton / 365 days/yr = 0.0022 lb/day

0.0022 lb/day x 0.7397 = 0.0017 lb/day

Winter SOx (*ITE 9th Edition*) = 6.11^{-3} lb/day
Summer SOx (*ITE 9th Edition*) = 6.43^{-3} lb/day

6.43^{-3} lb/day / 0.0022 lb/day = 2.9227 (multiplier factor)

SOx = 0.0017 lb/day x 2.9227 = 0.0050 lb/day

PM_{10}

Annual PM_{10} = 0.0431 tons/yr x 2,000 lb/ton / 365 days/yr = 0.2362 lb/day

0.2362 lb/day x 0.7397 = 0.1747 lb/day

Winter/Summer PM_{10} (*ITE 9th Edition*) = 0.5291 lb/day

0.5291 lb/day / 0.2362 lb/day = 2.2401 (multiplier factor)

PM_{10} = 0.1747 lb/day x 2.2401 = 0.3913 lb/day

$PM_{2.5}$

Annual $PM_{2.5}$ = 9.35^{-3} tons/yr x 2,000 lb/ton / 365 days/yr = 0.0512 lb/day

0.0512 lb/day x 0.7397 = 0.0379 lb/day

Winter/Summer $PM_{2.5}$ (*ITE 9th Edition*) = 0.1448 lb/day

0.1448 lb/day / 0.0512 lb/day = 2.8281 (multiplier factor)

$PM_{2.5}$ = 0.03791 lb/day x 2.8281 = 0.1072 lb/day

Preschool

The preschool modeled as a day-care center using the ITE 9th Edition default shows 343,102 annual VMT. Using the values for a preschool as included in the 10th Edition, this value comes out to be 224,433 annual VMT.

224,433 VMT / 343,102 VMT = 0.6541 (multiplier factor)

ROG

Annual ROG = 0.0490 tons/yr x 2,000 lb/ton / 365 days/yr = 0.2685 lb/day

0.2685 lb/day x 0.6541 = 0.1756 lb/day

Peak day ROG is then determined from examining the summer and winter daily emissions as modeled using the default *ITE 9th Edition* default, determining which is the higher value, then determining its percentage increase and applying in this percentage to the New Annual average daily value.

Winter ROG (*ITE 9th Edition*) = 0.3778 lb/day
Summer ROG (*ITE 9th Edition*) = 0.3910 lb/day

Because the summer value is higher, it represents the peak day.

0.3910 lb/day / 0.2685 lb/day = 1.4562 (multiplier factor)

ROG = 0.1756 lb/day x 1.4562 = 0.2557 lb/day

NOx

Annual NOx = 0.2078 tons/yr x 2,000 lb/ton / 365 days/yr = 1.1386 lb/day

1.1386 lb/day x 0.6541 = 0.7448 lb/day

Winter NOx (*ITE 9th Edition*) = 1.5247 lb/day
Summer NOx (*ITE 9th Edition*) = 1.5109 lb/day

1.5109 lb/day /1.1386 lb/day = 1.3270 (multiplier factor)

NOx = 0.7448 lb/day x 1.3270 = 0.9883 lb/day

CO

Annual CO = 0.4881 tons/yr x 2,000 lb/ton / 365 days/yr = 2.6745 lb/day

2.5745 lb/day x 0.6541 = 1.7494 lb/day

Winter CO (*ITE 9th Edition*) = 3.6175 lb/day
Summer CO (*ITE 9th Edition*) = 3.6742 lb/day

3.6742 lb/day /2.6745 lb/day = 1.3738 (multiplier factor)

CO = 1.7494 lb/day x 1.3738 = 2.4033 lb/day

SOx

Annual SOx = 1.63×10^{-3} tons/yr x 2,000 lb/ton / 365 days/yr = 0.0089 lb/day

0.0089 lb/day x 0.6541 = 0.0058 lb/day

Winter SOx (*ITE 9th Edition*) = 0.0120 lb/day
Summer SOx (*ITE 9th Edition*) = 0.0126 lb/day

0.0126 lb/day / 0.0089 lb/day = 1.4157 (multiplier factor)

SOx = 0.0058 lb/day x 1.4157 = 0.0082 lb/day

PM_{10}

Annual PM_{10} = 0.1315 tons/yr x 2,000 lb/ton / 365 days/yr = 0.7205 lb/day

0.7205 lb/day x 0.6541 = 0.4713 lb/day

Winter/Summer PM_{10} (*ITE 9th Edition*) = 0.9989 lb/day

0.9989 lb/day / 0.7205 lb/day = 1.3864 (multiplier factor)

PM_{10} = 0.4713 lb/day x 1.3864 = 0.6534 lb/day

$PM_{2.5}$

Annual $PM_{2.5}$ = 0.0361 tons/yr x 2,000 lb/ton / 365 days/yr = 0.1978 lb/day

0.1978 lb/day x 0.6541 = 0.1294 lb/day

Winter/Summer $PM_{2.5}$ (*ITE 9th Edition*) = 0.2737 lb/day

0.2737 lb/day / 0.1978 lb/day = 1.3837 (multiplier factor)

$PM_{2.5}$ = 0.1294 lb/day x 1.3837 = 0.1791 lb/day