4.2 AIR QUALITY

This section of the EIR analyzes the potential environmental effects on air quality from implementation of the proposed project. One comment letter addressing air quality was received in response to the NOP circulated for the proposed project.

Data for this section were taken from California Air Resources Board (CARB), the Draft Technical Report for the South Glendale Community Plan: Air Quality Assessment (Appendix B to this EIR), South Coast Air Basin (SCAB), SCAQMD, and Southern California Association of Governments (SCAG). Full reference-list entries for all cited materials are provided in Section 4.2.5 (References).

4.2.1 Environmental Setting

The proposed SGCP area is located at the eastern end of the San Fernando Valley in Los Angeles County, at the southern base of the Verdugo Mountains; the area is part of the South Coast Air Basin and under the jurisdiction of the SCAQMD). The SCAB is 6,600-square-miles and includes the non-desert portions of Los Angeles, San Bernardino, and Riverside counties, and the entirety of Orange County. The regional climate within the SCAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. Air quality within the SCAB is influenced by a wide range of emission sources, such as dense population centers, heavy vehicular traffic, industry, and meteorology.

Air quality within SCAB is primarily influenced by meteorology and a wide range of emissions sources, such as dense population centers, heavy vehicular traffic, and industrial activities. The local meteorology of the proposed SGCP area and surrounding area is represented by measurements recorded at the Western Regional Climate Center Glendale Stapenhorst station (043450). The normal annual precipitation within SCAB is approximately 16 inches. January temperatures range from a normal minimum of 40 degrees Fahrenheit (°F) to a normal maximum of 65°F. July temperatures range from a normal minimum of 59°F to a normal maximum of 81°F (WRCC 2016).

Criteria Air Contaminants

CARB provides emissions estimates for the portion of Los Angeles County that is within the SCAB in the 2012 inventory – the most recent available inventory. According to this inventory, volatile organic compounds (VOCs) and nitrogen oxide (NO_X) are the largest mobile source contributor to the estimated annual average for air pollutant levels, accounting for approximately 54 percent and 86 percent, respectively, of the total emissions. Area-wide sources account for approximately 43 percent and 46 percent of the County's fine particulate matter (PM_{10} and $PM_{2.5}$) emissions, respectively (CARB 2013).

The SCAB fails to meet the National Ambient Air Quality Standards (NAAQS) for ozone and $PM_{2.5}$ and is therefore considered a federal "nonattainment" area for these pollutants. The SCAB is considered a "nonattainment" area for California Ambient Air Quality Standards (CAAQS) ozone, PM_{10}, and $PM_{2.5}$ (SCAQMD 2016). SCAB's attainment status for the CAAQS and the NAAQS are shown in Table 4.2-1. Monitoring data applicable to the project site is provided in Table 4.2-2.

Table 4.2-1 Attainment Status Designations for South Coast Air Basin

Pollutant	*National Ambient Air Quality Standard*	*California Ambient Air Quality Standard*
Ozone	Nonattainment (1-hour) Classification = Extreme	Nonattainment (1-hour)
	Nonattainment (8-hour)[1] Classification=Extreme	Nonattainment (8-hour)
	Nonattainment (8-hour)[2] Classification=Extreme	
Respirable particulate matter (PM_{10})	Attainment (24-hour) Classification = Maintenance	Nonattainment (24-hour)
		Nonattainment (Annual)
Fine particulate matter ($PM_{2.5}$)	Nonattainment (24-hour) Classification = Serious	(No State Standard for 24-Hour)
	Nonattainment (Annual)[3]	Nonattainment (Annual)
	Nonattainment (Annual)[4] Classification = Serious	
Carbon monoxide (CO)	Attainment (1-hour) Classification=Maintenance	Attainment (1-hour)
	Attainment (8-hour) Classification=Maintenance	Attainment (8-hour)
Nitrogen dioxide (NO_2)	Unclassified/Attainment (1-hour)	Unclassified/Attainment (1-hour)
	Attainment (Annual) Classification=Maintenance	Unclassified/Attainment (8-hour)
Sulfur dioxide (SO_2)	(Designation Pending) (1-Hour)	Unclassifiable/Attainment (1-hour)
		Unclassifiable/Attainment (24-hour)
Lead (Particulate)	Nonattainment (3-month rolling avg.) Classification=Partial	Attainment (30-day average)
Hydrogen Sulfide	No Federal Standard	Attainment (1-hour)
Sulfates		Unclassifiable (24-hour)

[1] 1997 Standard.
[2] 2008 Standard.
[3] 1997 Standard.
[4] 2012 Standard.
Source: Ascent Environmental 2017 (Appendix B to this EIR)

Table 4.2-2 Summary of Annual Data on Ambient Air Quality (2014-2016)[1]

	2014	*2015*	*2016*
Ozone			
Maximum concentration (1-hr/8-hr average ppm)	0.095/0.094	0.074/0.074	0.092/0.078
Number of days State standard exceeded (1-hr/8-hr)	7/6	6/6	4/4
Number of days national standard exceeded (8-hr)	6	6	4
Fine Particulate Matter ($PM_{2.5}$)			
Maximum concentration (24-hour µg/m^3)	59.9	56.4	44.3
Number of days national standard exceeded (24-hour measured)	6	7	2
Respirable Particulate Matter (PM_{10})			
Maximum concentration (µg/m^3)	86.8	88.5	74.6
Number of days State standard exceeded	38	30	21
Number of days national standard exceeded	0	0	0

µg/m3 = micrograms per cubic meter; ppm = parts per million
[1] Measurements from the Los Angeles-North Main Street station for ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).
Source: Ascent Environmental 2017 (Appendix B to this EIR)

Toxic Air Contaminants

Toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs), are airborne substances that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. They include both organic and inorganic chemical substances that may be emitted from a variety of common sources including: gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches. These contaminants are different from the "criteria" pollutants previously discussed, in that ambient air quality standards have not been established for them, largely because there are hundreds of air toxics and their effects on health tend to be local rather than regional.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants, for which acceptable levels of exposure can be determined and for which ambient standards have been established. Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime (70-year period) of exposure. This lifetime cancer risk represents a worst-case map of inhalation cancer risks due to modeled outdoor toxic pollutant levels, not accounting for cancer risks due to other types of exposure. The largest contributors to inhalation cancer risks are diesel engines from trucks and ships operating in and out of the adjacent ports of Los Angeles and Long Beach.

Gasoline dispensing facilities and dry cleaners are existing sources of TACs within the proposed SGCP area. Other sources of TACs near the proposed SGCP area include major freeways, associated with the presence of diesel PM emissions from vehicle exhaust. Interstate (I-)5 is located approximately 1,700 feet to the west of the project site; SR-134 is located along the northern edge of the project site; and SR-2 is located along the eastern edge of the project site. A health risk assessment (HRA) was prepared to assess the existing level of cancer risk exposure within the proposed SGCP area.

Odors

The science of odor as a health concern is still new. Merely identifying the hundreds of VOCs that cause odors poses a big challenge. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat; which can reduce respiratory volume. Second, the VOCs that cause odors can stimulate sensory nerves and result in neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

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 present pollutants. Schools are also considered to be sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution because exercise places a high demand on respiratory functions, which can be impaired by air pollution.

4.2.2 Regulatory Framework

Federal

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990. See details below for further discussion.

Clean Air Act

The CAA required the EPA to establish the NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable, PM_{10} and $PM_{2.5}$, and lead. Table 4.2-3 includes the primary and secondary NAAQS. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan, referred to as a state implementation plan (SIP), for areas that do not attain the NAAQS. The federal CAA Amendments of 1990 (CAA) added requirements for states with areas that are not in attainment of all NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and permitting of stationary air pollution sources in the nonattainment air basin. Under CAA requirements, each nonattainment area throughout the state is required to develop a regional air quality management plan. Collectively, all regional air quality management plans throughout the state constitute the SIP.

Table 4.2-3 Ambient Air Quality Standards

Pollutant	*Averaging Time*	*California*[1,2]	*National*[3]	
			Primary[1,4]	*Secondary*[2, 5]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	—— [5]	Same as primary standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m3)	35 ppm (40 mg/m^3)	Same as primary standard
	8-hour	9 ppm[6] (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)[7]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	N/A
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	N/A	N/A
	3-hour	N/A	N/A	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	N/A
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	N/A	Same as primary standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	15 µg/m^3
	24-hour	N/A	35 µg/m^3	Same as primary standard
Lead	Calendar quarter	N/A	1.5 µg/m^3	Same as primary standard
	30-Day average	1.5 µg/m^3	N/A	N/A
	Rolling 3-Month Average	N/A	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No national standards	
Sulfates	24-hour	25 µg/m^3		
Vinyl chloride[6]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m^3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million.

(1) California standards for ozone, carbon monoxide, SO_2 (1- and 24-hour), NO_2, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

(2) Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

(3) National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies.

(4) National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

(5) National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(6) CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB 2016

State

California Air Resources Board

The CARB, a part of the California EPA (Cal/EPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards CAAQS, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's SIP), and works closely with the federal government and the local air districts.

California Clean Air Act

The California CAA (CCAA) requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest date practical. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in standards are generally explained by the health effects studies considered during the standard-setting process, and interpretation of those studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

Tanner Air Toxics Act and the Air Toxics Hot Spots Information and Assessment Act of 1987

TACs in California are regulated primarily through the Tanner Air Toxics Act AB 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Act; AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, PM exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and

will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000 (CARB 2000). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Regional

South Coast Air Quality Management District

SCAQMD is the primary agency responsible for planning to meet NAAQS and CAAQS in the SCAB. SCAQMD periodically updates the Air Quality Management Plan (AQMP) which is submitted to be included in the State SIP (SCAQMD 2016). The SIP is a compilation of plans and regulations that govern how the region and State will comply with the CAA requirements to attain and maintain the NAAQS for ozone and $PM_{2.5}$. As stated above, CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA. California law authorizes CARB to set ambient (outdoor) air pollution standards (California Health and Safety Code section 39606) in consideration of public health, safety, and welfare. CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants.

Criteria Air Pollutants

SCAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria pollutants and TACs, and also make recommendations for conducting air quality analyses. After SCAQMD guidelines have been consulted and the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by SCAQMD who submits comments and suggestions to the lead agency for incorporation into the environmental document.

All projects are subject to adopted SCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include but are not limited to the following:

- **Regulation II, Rule 201:** Permit to Construct. A person shall not build, erect, install, alter, or replace any equipment permit unit, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants without first obtaining written authorization for such construction from the Executive Officer. A permit to construct shall remain in effect until the permit to operate the equipment for which the application was filed as granted or denied, or the application is canceled.
- **Regulation II, Rule 203:** Permit to Operate. A person shall not operate or use any equipment permit unit, the use of which may cause the issuance of air contaminants, or the use of which may reduce or control the issuance of air contaminants, without first obtaining a written permit to operate from the Executive Officer.
- **Regulation IV, Rule 402:** Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort,

repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- **Regulation IV, Rule 403:** Fugitive Dust. The developer or contractor is required to implement Best Available Control Measures for all sources, and all forms of visible PM are prohibited from crossing any property line.
- **Regulation XI, Rule 1113:** Architectural Coatings. The manufacturer, distributor, and end user of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- **Regulation XII, Rule 1186:** PM10 Emissions from Paved and Unpaved Roads, and Livestock Operations. The purpose of this rule is to reduce the amount of PM entrained in the ambient air as a result of vehicular travel on paved and unpaved public roads.
- **Regulation XIII, Rule 1301:** New Source Review, General. The purpose of this rule is to set forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the NAAQS, and that future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors.
- **Regulation XIV, Rule 1401:** New Source Review of Toxic Air Contaminants. The rule specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants.
- **Regulation XIV, Rule 1403:** Asbestos Emissions from Demolition/Renovation Activities. The owner or operator of any demolition or renovation activity is required to have an asbestos study performed prior to demolition and to provide notification to SCAQMD prior to commencing demolition activities.

Toxic Air Contaminants

At the local level, air districts may adopt and enforce CARB control measures for TACs. Under SCAQMD Rule 201 ("Permit to Construct"), Rule 203 ("Permit to Operate"), Rule 1301 ("New Source Review, General"), and Rule 1401 ("New Source Review of Toxic Air Contaminants"), all sources that possess the potential to emit TACs are required to obtain permits from SCAQMD. Permits may be granted to operations that emit TACs if they are constructed and operated in accordance with applicable regulations, including New Source Review standards and air toxics control measures. SCAQMD limits emissions and public exposure to TACs through a number of programs. SCAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SCAQMD. SCAQMD's Rule 402 (Nuisance) regulates odorous emissions.

Local

Glendale General Plan

The following Glendale General Plan policies, goals and objectives located in the Air Quality and Housing Elements are applicable to air quality.

Air Quality Element

- **Goal 1:** Air Quality will be healthful for all residents of Glendale.
  - **Objective 1.a:** Reduce Glendale's contribution to regional emissions in a manner both efficient and equitable to residents and businesses, since emissions generated within Glendale affect regional air quality.
  - **Objective 1.c:** Comply with the Air Quality Management Plan prepared by the SCAQMD and SCAG.
- **Goal 3:** Air emissions from City operations will be minimized, while meeting public service requirements.
  - **Objective 3.a:** Continue the aggressive programs of recycling, energy conservation, and hazardous waste collection in order to minimize emissions from the Grayson power plant and Scholl Canyon landfill.
  - **Objective 3.e:** Provide leadership as a City by utilizing and advancing innovative technology to reduce air emissions.
- **Goal 4:** The reliance on automobile transportation will be reduced.
  - **Objective 4.b:** Promote the use of public transportation and non-polluting transportation in standards for new construction.
  - **Objective 4.c:** Expand existing public transportation and non-polluting transportation systems and develop new systems in order to reach a greater number of potential users. Continue to seek federal, State, and regional funding sources.
  - **Objective 4.d:** Coordinate various transportation modes with transfer facilities to increase convenience.
  - **Objective 4.e:** Coordinate non-automobile transportation systems with surrounding jurisdictions.
  - **Objective 4.f:** Increase carpooling opportunities in Glendale.
  - **Objective 4.g:** Develop incentives for businesses with fewer than 100 employees to reduce vehicle trips. These businesses are not regulated by SCAQMD Rule 1501, but account for the majority of Glendale's work force.
- **Goal 5:** Air quality programs will assist businesses in Glendale.
  - **Objective 5.a:** Inform the businesses of Glendale on ways to reduce air pollution, both directly, as well as by reducing waste, minimizing energy usage, reducing vehicle trips, and managing truck delivery schedules and routes.
  - **Objective 5.b:** Provide incentives for existing and new businesses in Glendale to reduce both stationary and mobile emissions.
  - **Objective 5.c:** Assist businesses, schools, and colleges in reducing vehicle trips by using City-operated services and facilities.

- **Objective 5.d:** Continue and expand public/private partnerships which reduce air pollution.
- **Objective 5.e:** Support the use of new air pollution control technologies by Glendale's business community.
- **Objective 5.f:** Assist the business community with environmental regulations through improved communication and technical assistance.

Housing Element

- **Goal 1:** A City with a wide range of housing types to meet the needs of current and future residents.
  - **Policy 1.3:** Provide higher density residential development in close proximity to public transportation, services, and recreation.
  - **Policy 1.4:** Continue to promote residential/mixed-used development, including live-work units in appropriate locations.
- **Goal 6:** A City with housing that is livable and sustainable.
  - **Policy 6.8:** Continue providing brochures and technical assistance that promotes the use of energy conservation features in new and existing dwellings.
  - **Policy 6.9:** Continue promoting energy and resource efficiency by implementing the City's residential recycling, bulk item collection, household hazardous waste, horse accounts, backyard composting, chopper rebates, Christmas Tree Recycling, electronics recycling, recycling drop-off and worn composting services/programs.
  - **Policy 6.10:** Encourage the use of sustainable building practices in residential developments.
  - **Policy 6.11:** Provide opportunities for residential locations and design that encourage transit, pedestrian, bicycle, and other mobility options.

Greener Glendale Plan

The City has had a long-standing commitment to the environment through eco-friendly programs and projects. In March 2012, the City completed the Greener Glendale Plan, consisting of the Greener Glendale 2010 Report (Glendale 2010), the Greener Glendale Plan for Municipal Operations (Glendale 2011), and the Greener Glendale Plan for Community Activities (Glendale 2012). The Greener Glendale Plan promotes sustainable living and conservation programs within the community and government operations.

4.2.3 Project Impacts and Mitigation

Analytic Method

The air quality impact analysis completed for the proposed project was conducted following the methodology and guidance in SCAQMD's CEQA Air Quality Handbook (SCAQMD 1993). The analysis also uses SCAQMD's established regional thresholds of significance for air pollutants, which are to be used in the analysis of potential air quality impacts from projects (SCAQMD 2015). SCAQMD has established significance thresholds for both construction and operational emissions to assess a project's cumulative air quality impacts over the lifetime of the project.

Construction Emissions

Construction emissions of criteria air pollutants and precursors were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 computer program (CAPCOA 2016), as recommended by SCAQMD. The projected build-out of the plan would include an estimated 10,337 new dwelling units and 3,765 thousand square feet (Ksf) of nonresidential space. Modeling was based on project-specific information where available, and default values in CalEEMod that are based on the project's location and land use type.

For a conservative analysis, construction was modeled to begin in 2018 as future years are anticipated to have lower emission factors for construction equipment. Development within the SGCP is anticipated to occur over a 24-year period at an annual growth rate of 1.01 percent. However, to evaluate a potential worst-case construction scenario, building permit data for Glendale, provided by the U.S. Census Bureau, for the year 2000 through 2015 was used to identify a year in which above average building construction activity occurred in the City. Using this data, a worst-case construction scenario was derived to evaluate construction activities in a year with above average growth. Further, because individual construction activities (e.g., intensity, schedule) are unknown at this program level analysis, it was assumed that construction phases (e.g., site preparation, grading, building construction) could overlap on any given day, generating maximum daily emission estimates. Construction modeling inputs and assumptions are included in Appendix A and D of the South Glendale Community Plan Air Quality Assessment (Ascent Environmental 2017; Appendix B of this EIR).

Operational Emissions

Operational emissions of criteria air pollutants and precursors were evaluated in accordance with SCAQMD's CEQA Air Quality Handbook (SCAQMD 1993). Emissions estimates included long-term operational emissions of ozone precursors (i.e., NO_X and VOC) associated with mobile-sources (i.e., trip generation) and stationary sources (e.g., area wide and energy consumption). Annual trip generation rate and vehicle miles traveled (VMT) were based on information in the project-specific traffic study (Fehr & Peers 2017), included in Appendix F to this EIR. Construction and operational emissions of criteria air pollutants and precursors were calculated using CalEEMod, as recommended by SCAQMD. Land use assumptions, based on anticipated plan buildout, include the addition of 10,337 dwelling units and 3,765 Ksf of nonresidential land uses within the proposed SGCP area.

CO impacts were assessed based on recent SCAQMD monitoring data, available screening criteria, and data included in the project-specific traffic study (Fehr & Peers 2017; Appendix F of this EIR).

The level of health risk from exposure to construction and operation-related TAC emissions was assessed using SCAQMD's CEQA Air Quality Handbook (SCAQMD 1993). The level of health risk from exposure to construction and operation-related TAC emissions was assessed qualitatively. This assessment was based on the proximity of TAC-generating construction activity to off-site sensitive receptors, the number and types of diesel-powered construction equipment being used, and the duration of potential TAC exposure. Exposure from existing TACs to new land uses proposed under the proposed SGCP was evaluated in an HRA, discussed below.

Odors

Impacts related to odors were assessed qualitatively, based on proposed construction activities, equipment types and duration of use, overall construction schedule, distance to nearby sensitive receptors, and proposed land uses types. Specific land use types and locations are not known, and therefore, odor impacts are assessed in a general manner.

Thresholds of Significance

The following thresholds of significance are based on the 2017 CEQA Guidelines Appendix G. For purposes of this EIR, implementation of the proposed project may have a significant adverse impact on air quality if it would do any of the following:

- 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 nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Potentially Significant Impacts

Threshold	Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact 4.2-1 **Implementation of the proposed project would conflict with or obstruct implementation of the applicable air quality plan. This is considered a potentially significant impact. Implementation of mitigation would reduce this impact, but not to a less than significant level. Therefore, this would be a *significant and unavoidable* impact.**

SCAQMD considers a project to be consistent with existing air quality plans and other relevant documents, if the project's land use changes and growth rates remain consistent with those in the existing plan. Projects that do not increase dwelling unit density, vehicle trips, or VMT above the projected rates included in relevant air quality plans are not considered to exceed this threshold (SCAQMD 1993).

The most relevant and applicable air quality plans for the proposed SGCP area is SCAQMD's 2016 AQMP and SCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Regional air quality emissions projections used in the SIP and the AQMP are based on the growth projections included in the RTP/SCS; therefore, projects that are consistent with these growth projections would also be consistent with regional air quality emission projections and attainment status regarding CAAQS and NAAQS.

Table 4.2-4 compares the dwelling units, employment, and annual growth rates of the proposed SGCP area and the growth rates included in the SCAG 2016 RTP/SCS. As seen in Table 4.2-4, population and employment increases within the SGCP area are greater than those included in the growth rates forecasted for Glendale in the SCAG 2016 RTP/SCS. Additionally, the household growth rate in the proposed SGCP area is higher than the regional household growth rates established in the SCAG RTP/SCS.

Table 4.2-4 Summary of Project, City and Regional Forecasted Growth Rates

	2015	*2040*	*Annual Growth Increase*
Proposed SGCP Growth			
Dwelling Units	37,903	48,240	1.1%
Population	102,338	130,248	1.1%
Employment	46,511	57,747	1%
SCAG RTP/SCS Glendale Forecast			
Dwelling Units	72,400	81,100	0.4%
Population	193,200	214,000	0.4%
Employment	111,300	127,000	0.5%
SCAG RTP/SCS Regional Forecast			
Dwelling Unit	5,885,000	7,412,000	0.9%
Population	18,322,000	22,138,000	0.7%
Employment	7,440,000	9,872,000	1.2%

Source: Ascent Environmental 2017 (Appendix B to this EIR)

According to the Transportation Analysis Report (Appendix F of this EIR), although project buildout would generate approximately 14 percent more VMT over existing conditions, the project increases dwelling units in the proposed SGCP area by 27 percent and nonresidential land uses by 19 percent over existing conditions, resulting in a net decrease of per capita VMT. Specifically, based on 2015 SGCP population (102,338) and SGCP daily (VMT 3,870,000), existing VMT per capita within the SGCP area is 37.8. Based on project-generated VMT (4,410,000) at plan buildout and future projected SGCP population (130,248), VMT per capita within the SGCP area is expected to be 33.9, representing a 10.3 percent decrease in VMT/capital, which would be consistent with VMT per capita reduction goals of 7.4 percent established by the RTP/SCS. While this per capita VMT reduction helps reduce emissions in the proposed SGCP area, the growth rate associated with the proposed SGCP would remain higher than the SCAG 2016 RTP/SCS, as shown in Table 4.2-4, given the overall volume of forecasted new growth as a result of the proposed SGCP. Therefore, per capita VMT would likely decrease, but overall VMT would increase beyond what is forecast in the SGAG 2016 RTP/SCS. Due to this inconsistency, this impact would be potentially significant. Implementation of mitigation measures *MM 4.2-1* and *MM 4.2-2* would reduce this impact, but not to a less than significant level. Therefore, the proposed project would conflict with an air quality plan (s) (SCAQMD's 2016 AQMP and SCAG's 2016 RTP/SCS, and the impact would remain significant and unavoidable.

Threshold	Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?
Threshold	Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Impact 4.2-2 **Implementation of the proposed project would violate any air quality standards or contribute substantially to an existing or projected air quality violation. This is considered a potentially significant impact. Implementation of mitigation would reduce this impact, but not to a less than significant level. Therefore, this would be *significant and unavoidable* impacts.**

Impact 4.2-3 **Implementation of the proposed project would result in a cumulatively considerable net increase of any criteria pollutants for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). This is considered a potentially significant impact. Implementation of mitigation would reduce this impact, but not to a less than significant level. Therefore, this would be a *significant and unavoidable* impact.**

Construction Related Impacts

Construction-related activities associated with development occurring within the SGCP would result in emissions of Reactive Organic Gases (ROG), NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$ from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust emissions of PM_{10} and $PM_{2.5}$ are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and mobile-sources. Emissions of ozone precursors are emitted in the exhaust of construction equipment and on-road vehicles. Paving and the application of architectural coatings also results in off-gas emissions of VOC. PM_{10} and $PM_{2.5}$ are also contained in equipment and vehicle exhaust.

Typical construction activities would require all-terrain forks, fork lifts, cranes, pick-up and fuel trucks, compressors, loaders, backhoes, excavators, dozers, scrapers, pavement compactors, welders, concrete pumps, concrete trucks, and off-road haul trucks, as well as other diesel-fueled equipment as necessary. As discussed above, specific construction phasing and intensity is unknown. Further, based on the anticipated SGCP gradual buildout rate of about 1.0 percent, emissions from individual development construction may not exceed applicable SCAQMD daily thresholds, depending on specific project size and construction phasing/schedule; however, these details are not available at this program-level analysis. A worst-case construction day, where multiple construction activities could occur at one time was evaluated. Based on anticipated land uses, daily maximum emissions were estimated for the construction of residential and nonresidential land uses. Table 4.2-5 below includes the land use types and quantities used to estimate construction emissions and Table 4.2-6 includes modeled worst-day construction emissions.

As shown in Table 4.2-6, maximum daily emissions of NO_X would potentially exceed applicable mass emission threshold of 100 lb/day. Daily emissions of VOC, PM_{10}, $PM_{2.5}$, SO_X, and CO would not exceed the respective thresholds.

Additionally, due to the nonattainment status of the SCAB with respect to the NAAQS and CAAQS for ozone, construction-generated NO_x emissions, an ozone precursor, may result in adverse air quality impacts to existing surrounding land uses and may contribute to the existing adverse air quality condition in the SCAB. Ozone impacts are the result of cumulative emissions from numerous sources within and outside the region; therefore, construction impacts associated with the development of land uses allowable under the proposed SGCP would result in a cumulatively considerable net increase of a criteria

pollutant for which the project region is in nonattainment; therefore, project related construction activities would result in a potentially significant impact.

Table 4.2-5 Construction Land Use Assumptions

Residential Land Uses (dwelling units)	673
Nonresidential Land Uses (square feet)	266,071

Source: Ascent Environmental 2017 (Appendix B to this EIR)

Table 4.2-6 Modeled Maximum Construction Emissions of Criteria Air Pollutants and Precursors during Worst-Case Year (2018)

	Maximum Daily Emissions (lb/day)					
Construction Phase	*VOC*	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*SO_x*	*CO*
Demolition	4	38	2	2	<1	23
Site Preparation	5	48	21	12	<1	22
Grading	5	60	13	6	<1	61
Building Construction	6	40	9	4	<1	53
Paving	2	17	1	<1	<1	15
Architectural Coating	35	2	1	<1	<1	8
Maximum Daily Emissions	**57**	**205**	**47**	**25**	**<1**	**157**
SCAQMD Threshold of Significance	75	100	150	55	150	550
Exceed Significance Threshold?	No	**Yes**	No	No	No	No

Source: Ascent Environmental 2017 (Appendix B to this EIR)

Operational Related Impacts

Operations associated with the proposed project would result in the generation of long-term operational emissions of VOC, NO_X, PM_{10}, $PM_{2.5}$, SO_X and CO as a result of mobile, stationary, and area sources. Mobile-source emissions would result from new vehicle trips generated by anticipated land use development (i.e., 10,337 new dwelling units and associated non-residential development). Stationary and area-wide sources would include the combustion of natural gas for space and water heating (i.e., energy use), the use of landscaping equipment and other small equipment, the periodic application of architectural coatings, and the use of consumer products. The total number of dwelling units and nonresidential development, within the proposed SGCP area, used for conducting the operational emissions modeling are shown in Table 4.2-4 above.

Table 4.2-7 summarizes the maximum daily operational-related emissions of criteria air pollutants during the summer season (higher emissions scenario). Emissions were calculated based on trip rates and trip lengths from the project-specific traffic study (Fehr & Peers 2017; Appendix F to this EIR).

As shown in Table 4.2-7, operation-related activities would result in mass emissions of VOC, NO_X, PM_{10}, $PM_{2.5}$, and CO that exceed the SCAQMD-recommended thresholds of significance. Thus, VOC, NO_X, PM_{10}, $PM_{2.5}$, and CO emissions generated under full buildout of the proposed SGCP may result in adverse air quality impacts to existing surrounding land uses and may contribute to the existing adverse air quality condition in the SCAB. This would be a potentially significant impact.

Additionally, due to the nonattainment status of the SCAB with respect to the NAAQS and CAAQS for ozone, operational NO_X emissions, an ozone precursor, may result in adverse air quality impacts to existing surrounding land uses and may contribute to the existing adverse air quality condition in the SCAB; therefore, operational impacts associated with the development of land uses allowable under the proposed SGCP would result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment.

Table 4.2-7 Summary of Maximum Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2040)

	Maximum Daily Emissions (lb/day)					
Source Type	*VOC*	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*SO_x*	*CO*
Area[1]	3,096	224	794	794	13	6,107
Energy	9	84	7	7	<1	58
Mobile	99	713	437	118	5	888
Total	**3,205**	**1,021**	**1,238**	**919**	**19**	**7,054**
SCAQMD Threshold of Significance[2]	55	55	150	55	150	550
Exceed Significance Threshold?	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**

[1] Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings.

[2] Mass emission significance criteria apply to the sum of area, energy, and mobile sources.

Notes: Total values may not add correctly due to rounding.

Source: Ascent Environmental 2017 (Appendix B to this EIR)

Proposed SGCP construction and operational impacts associated with an applicable air quality standard is considered potentially significant. Implementation of mitigation measures *MM 4.2-1* and *MM 4.2-2* would reduce this impact, but not to a less than significant level. Therefore, project related operational impacts would remain a significant and unavoidable.

Threshold	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact 4.2-4 Implementation of the proposed project would expose sensitive receptors to substantial pollutant concentrations. This is considered a potentially significant impact. Implementation of mitigation would reduce this impact, but not to a less than significant level. Therefore, this would be a *significant and unavoidable* impact.

The exposure of sensitive receptors to TAC emissions from project-related construction and operational sources is discussed separately below. The TAC that is the focus of this analysis is diesel PM, because it is the TAC of primary concern when evaluating health risk (CARB 2000). Although other TACs exist (e.g., benzene, 1,3-butadiene, hexavalent chromium, formaldehyde, methylene chloride), they are primarily associated with industrial operations. It should be noted that the proposed project does not directly propose new stationary sources or mobile sources of emissions, but implementation of the proposed SGCP would result in an indirect increase of stationary and mobile TAC emitting sources.

Construction

Construction-related activities associated with the proposed SGCP would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment use for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road

truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary TAC of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations.

Diesel PM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of diesel PM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003). With regards to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher level of health risk for any exposed receptor. The California Office of Environmental Health Hazard Assessment (OEHHA) 2015 Guidance details the risk assessment guidelines for evaluating cancer risk associated with exposure of sensitive receptors to TAC emissions. Exposure durations of 9-, 30-, and 70-years are used for cancer risk evaluations at individual receptors. The 9 and 70-year exposure duration present potential impacts over the range of residency periods, while the 30-year exposure duration is recommended for use as the basis for estimating cancer risk at the maximally exposed individual resident in all health risk assessments. Furthermore, 70-year exposure period is required for estimating cancer burden or providing an estimate of population-wide risk (OEHHA 2015).

The use of off-road heavy-duty diesel equipment would be limited to the construction phase. As construction progresses, activity intensity and duration would vary throughout individual construction sites throughout the proposed SGCP area. As such, it is unlikely that diesel PM-emitting construction activity would not take place near any single existing or future receptor for extended periods of time. Further, policies associated with mitigation measure *MM 4.2-1* would further reduce exhaust emissions from construction equipment using best available control technology, cleaner fuels, and higher tiered engines.

Existing residential receptors are located throughout the proposed SGCP area. Studies cited in the CARB Air Quality and Land Use Handbook (CARB 2005) show that diesel PM is highly dispersive, and receptors must be near emission sources to result in the possibility of exposure to concentrations of concern and must be in close proximity for a long duration of time; some of the studies cited specifically considered the link between traffic emissions and respiratory symptoms in children. Given the temporary and intermittent nature of construction activities likely to occur within specific locations in the proposed SGCP area (i.e., construction is not likely to occur in any one part of the proposed SGCP area for an extended time), the dose of any exposure to diesel PM of any one receptor would be limited. Therefore, considering the relatively short duration of diesel PM-emitting construction activity at any one location of the proposed SGCP area, the distance to the nearest off-site sensitive receptors, the highly dispersive properties of diesel PM, and policies in place that would reduce construction-related exhaust emissions, construction-related TAC emissions would not expose residences to substantial concentrations.

Operation Related Impacts

The operational TAC analysis evaluates new sources associated with SGCP buildout (e.g., increased vehicular traffic, stationary or commercial land uses) and the placement of new sensitive receptors in close proximity to existing TAC sources. The analysis is based on available guidance from CARB and SCAQMD shown below in Table 4.2-8.

Operation of new land uses could generate new sources of TACs from commercial and industrial land uses (e.g., gasoline dispensing facilities and dry cleaners). Land uses that have the potential to generate stationary source emissions would be required to obtain a permit from SCAQMD. If the facility has the

potential to generate health risks above established risk levels, facilities are required to distribute public notifications to both residential, nonresidential, and parents of children attending school within the area of impact and develop and implement a risk reduction plan. Due to the program level scope of this analysis, specific land use types and location of future development are not available. However, it is possible that future development within the proposed SGCP area would result in new stationary sources associated with commercial and industrial land use development, that would result in TAC exposure to existing or future planned sensitive land uses.

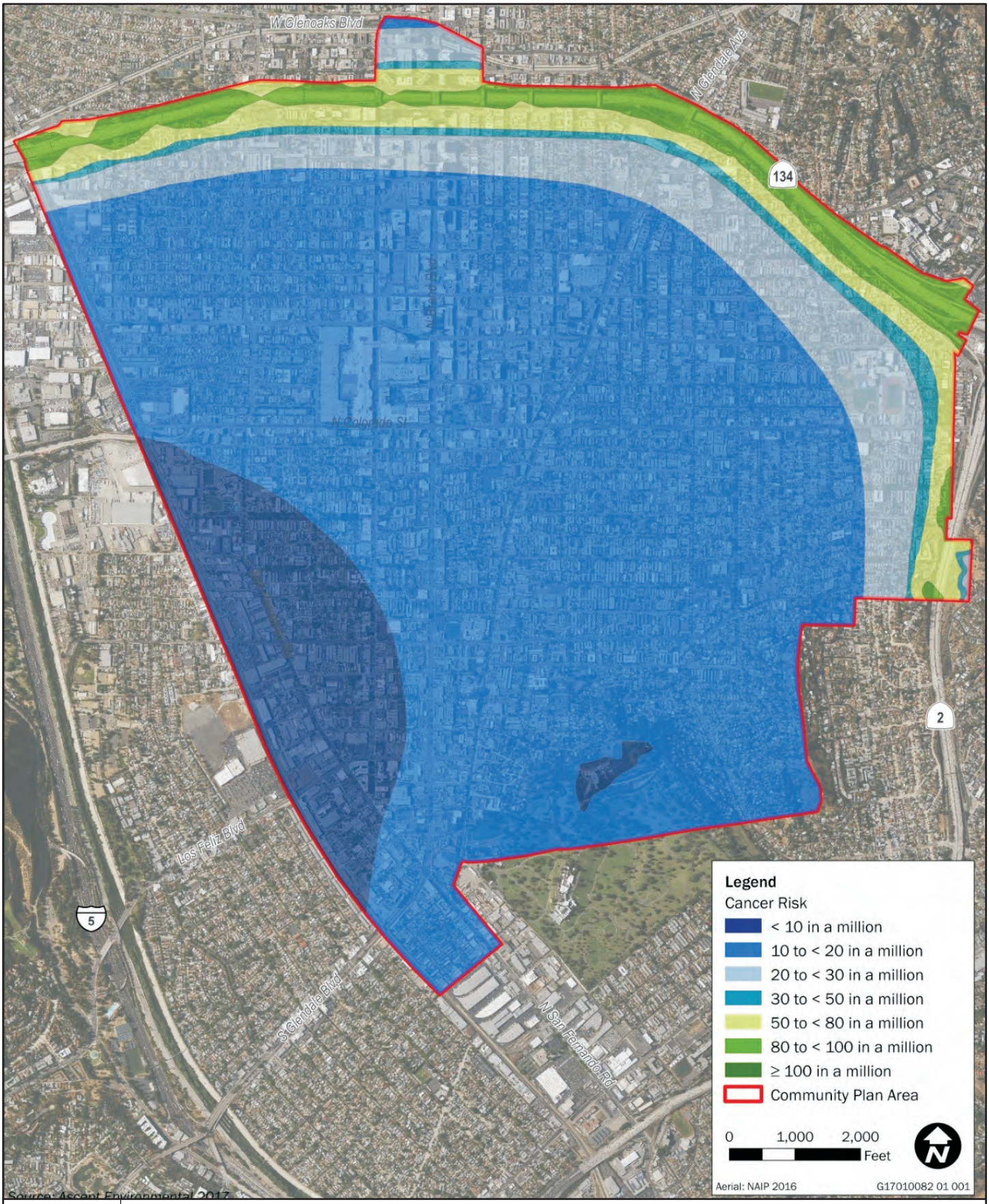
Table 4.2-8 CARB Recommendations on Siting New Sensitive Land Uses

Source Category	*Advisory Recommendations*
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with transportation refrigeration unit operating per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the CARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: CARB 2005 cited in Ascent Environmental 2017 (Appendix B to this EIR)

In addition to new stationary sources, the proposed SGCP would result in an increase in 619,500 vehicle trips, distributed over the project-affected roadways and intersections. In accordance with CARB guidance, high volume roads and freeways are the primary sources of TACs within urban areas (CARB 2005). Freeways or urban roads experiencing 100,000 or more vehicles/day could expose sensitive receptors to adverse health risks. Although all project-generated trips would not occur on any single road, the project would result in a substantial increase in trips to the surrounding roadway network, and therefore, could result in a substantial increase to existing health risk levels associated with vehicular traffic, exposing existing and future planned land uses to increased TAC levels.

Results of the existing risk levels are included below in Figure 2.4-1. The figure indicates the estimated levels of cancer risk across the proposed SGCP area from a 30-year exposure to diesel PM emitted by SR-134 and SR-2 in the base year 2019. The risk isopleth presented in Figure 2.4-1 was developed using the cancer risk levels estimated for each point in the receptor grid. Cancer risk is a function of traffic on freeways that carry volumes of vehicle traffic, particularly trucks. As shown in Figure 2.4-1, cancer risk generally decreases from greater than 100 in a million to 50 in a million at approximately 500 feet from the freeways; furthermore, cancer risk generally decreases from greater than 100 in a million to 30 in a million at approximately 1,000 to 1,500 feet from the freeways.



Source: Ascent Environmental 2017

ATKINS

FIGURE 4.2-1
Estimate Levels of Cancer Risk from Exposure to Diesel PM within the SGCP Area

Source: Ascent Environmental 2017

100042606 South Glendale Community Plan PEIR

The Glendale General Plan includes goals or policies that would reduce TAC exposure to existing and future sensitive receptors, as does the Greener Glendale Plan (Community Activities, Objective EH1 – Reduce use of toxics citywide; Municipal Activities, Objective EH1 – Reduce criteria air pollution from vehicles; Municipal Activities, Objective EH2 – Reduce use of toxics). However, proposed SGCP buildout would result in additional stationary and mobile sources of TACs that would contribute to the existing risk level in the proposed SGCP area; thus, potentially exposing existing and newly planned development to increased risk levels. This impact would be potentially significant. Implementation of mitigation measures *MM 4.2-3* would reduce this impact, but not to a less than significant level. Therefore, project related operational impacts would remain significant and unavoidable.

Threshold	Would the project create objectionable odors affecting a substantial number of people?

Impact 4.2-5 Implementation of the proposed project would create objectionable odors affecting a substantial number of people. This is considered a potentially significant impact. However, implementation of mitigation would reduce this impact to a *less than significant* level.

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generate citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose a substantial number of people to objectionable odors would be deemed to have a significant impact. SCAQMD's Rule 402 (Nuisance) regulates odorous emissions and states that "no person shall discharge any air contaminant that may "cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public" (SCAQMD Rule 402). Odors are evaluated for construction and operation, separately below.

Minor odors from the use of heavy-duty diesel equipment, and the laying of asphalt during project related construction activities would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. While construction would occur intermittently over an approximately 24-year buildout period, these types of odor-generating activities would not occur at any single location, or within proximity to off-site receptors, for an extended period.

Facilities developed under the project would be subject to SCAQMD Rule 402 (Nuisance) regarding the control of nuisances, including odors. Receptors located in the general vicinity of such sources may be exposed to odorous emissions. Considering that specific nonresidential land use designations are not included in the project, future nonresidential land uses or specific facilities in the proposed SGCP area may include odor emissions considered a nuisance. Common examples of odor emissions sources from nonresidential land uses in the proposed SGCP area include dry cleaning facilities, food processing facilities or coffee roasting facilities. Proposed land use designations within the proposed SGCP area that could potentially generate odor emissions include Industrial/Creative and Mixed-Use designations of varying densities.

As a result, potential exposure of sensitive receptors to odors associated with proposed land uses in the proposed SGCP area and the siting of new sensitive receptors in proximity to existing odor sources would be considered potentially significant. However, implementation of mitigation measure *MM 4.2-4* would reduce this impact to a less than significant level.

Mitigation Measures

MM 4.2-1 *The following policies shall be incorporated into the SGCP to reduce construction related emissions associated with future development projects implemented under the proposed SGCP.*

- ***Policy AQ-1:*** *Require conditions of approval for construction projects near sensitive receptors and/or that would generate substantial levels of mass emission to implement emissions reduction strategies such as:*
  - *(a) Install PM or other exhaust reducing filters on generators;*
  - *(b) Require construction contractors to use off-road equipment that meets CARB's most recent certification for off-road diesel engines or Best Available Control Technology (BACT);*
  - *(c) Use of electric-powered construction equipment;*
  - *(d) Phase construction activities;*
  - *(e) Provide grid or renewable electricity in place of generators;*
  - *(f) Use alternative fuel such as high performance renewable diesel for construction equipment and vehicles;*
  - *(g) Ensure that construction equipment is maintained and tuned according to manufacturer specifications; and/or*
  - (h) *Require construction contractors to provide clear signage that posts the California Code of Regulations, Title 13, section 2449 (d) (3) and 2485 requirement to reduce idling time to 5 minutes or less at construction sites.*
- ***Policy AQ-2:*** *Require area businesses, residents, and partnering organizations to provide information about best management practices that can be implemented on a voluntary basis to reduce exposure of sensitive receptors to TACs, which encourage voluntary reduction of construction exhaust emissions, as well as exposure to these emissions;*
- ***Policy AQ-3:*** *The City shall continue to work with CARB and SCAQMD in order to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution and*
- ***Policy AQ-4:*** *The City shall review proposed development projects to ensure projects incorporate feasible measures that reduce construction emissions for VOC, NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) through project design.*

MM 4.2-2 *The following policies shall be incorporated into the SGCP to reduce operational emissions associated with future development projects implemented under the proposed SGCP.*

- ***Policy AQ-5:*** *Create a more multi-modal transportation network of comprehensive, integrated, and connected network of transportation facilities and services for all modes of travel, which would lead to reduced VMT, thereby reducing operational emissions;*
- ***Policy AQ-6:*** *Provide a complete streets design that balances the diverse needs of users of the public right-of-way, which would reduce VMT, thereby reducing operational emissions.*
- ***Policy AQ-7:*** *Provide and manage a balanced approach to parking that meets economic development and sustainability goals by reducing parking demand, managing parking supply, and requiring alternative fuel vehicle parking.*

- ***Policy AQ-8:*** *Implement traffic calming features such as sidewalks, protected bike lanes, reduced speed limits, narrow lane widths, lane reconfiguration, and roundabouts.*
- ***Policy AQ-9:*** *Facilitate transit-oriented land uses and pedestrian-oriented design to encourage transit ridership.*
- ***Policy AQ-10:*** *Support high-density transit-oriented and compact development within the City to improve transit ridership and to reduce automobile use and traffic congestion;*
- ***Policy AQ-11:*** *The City shall review discretionary proposed development projects to ensure projects incorporate feasible measures that reduce operational emissions for VOC, NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) through project design; and*
- ***Policy AQ-12:*** *Encourage the use of low or no VOC-emitting materials.*

MM 4.2-3 *The following policies shall be incorporated into the SGCP to reduce exposure of new sensitive receptors to pollution sources associated with future development projects implemented under the proposed SGCP.*

- ***Policy HRA-1:*** *The City shall minimize exposure of new sensitive receptors to toxic air contaminants (TACs) and fine particulate matter ($PM_{2.5}$), to the extent possible, and consider distance, orientation, and wind direction when siting sensitive land uses in proximity to TAC- and $PM_{2.5}$-emitting sources in order to minimize exposure to health risk; and*
- ***Policy HRA-2:*** *At the time of discretionary approval of new sensitive land uses proposed in close proximity to existing TAC sources, the City shall require development projects to implement applicable best management practices, as necessary and feasible, that will reduce exposure to TACs and $PM_{2.5}$. Available measures include, but are not limited to, barriers (e.g., vegetation, concrete walls) between the source and the receptor, high efficiency filtration with mechanical ventilation, and portable air filters. Specific reduction measures will be evaluated and determined depending on proposed land uses, proximity to TAC sources, and feasibility.*

MM 4.2-4 *The following policies shall be incorporated into the SGCP to reduce impacts associated with objectionable odors associated with future development projects implemented under the proposed SGCP.*

- ***Policy Odor-1:*** *Land uses that have the potential to emit objectionable odorous emissions and conflict with SCAQMD Rule 402 (e.g., dry cleaning establishments, restaurants, and gasoline stations) shall be located as far away as possible from existing and proposed sensitive receptors or downwind of nearby receptors; and*
- ***Policy Odor-2:*** *If an odor-emitting facility is to occupy space in commercial or retail areas, odor control devices shall be installed to mitigate the exposure of receptors to objectionable odorous emissions. The use of setbacks, site design considerations, and emission controls are typically sufficient to ensure that receptors located near commercial or retail uses would not be exposed to odorous emissions on a frequent basis.*

Level of Significance After Mitigation

Implementation of mitigation measures *MM 4.2-1* and *MM 4.2-2* would reduce construction and operational emissions; however, due to the lack of project-specific information (e.g., land use size and type, operational year) the effectiveness in reducing operational emissions cannot be quantified. Further, future development in the proposed SGCP area and the associated operations may contribute to the nonattainment status of the SCAB with respect to the NAAQS and CAAQS for ozone and $PM_{2.5}$, and CAAQS for PM_{10}. Policies associated with mitigation measures *MM 4.2-1* and *MM 4.2-2* are

recommended to provide continued coordination between the City and SCAQMD to work towards meeting regional emissions and per capita VMT levels; however, the proposed project would increase dwelling unit density, vehicle trips, or VMT above the projected rates included in the is SCAQMD's 2016 AQMP and SCAG's 2016 RTP/SCS. Although mitigation measures *MM 4.2-1* and *MM 4.2-2* would reduce impacts, Impact 4.2-1, Impact 4.2-2, and Impact 4.2-3 would remain significant and unavoidable.

Implementation of mitigation measure *MM 4.2-3* would require the City to minimize exposure to new receptors to the extent feasible and applicable. All new development undergoing discretionary review would be required to evaluate existing TAC exposure and incorporate available reduction measures, if necessary; however, due to the uncertainty of future sensitive receptor locations and the effectiveness of TAC reduction measures, Impact 4.2-4 would remain significant and unavoidable.

Implementation of mitigation measure *MM 4.2-4* would minimize odor exposure to sensitive receptors within the proposed SGCP area by requiring consideration of odor-generating land uses in proximity to existing receptors and requiring additional odor control technology as appropriate. Impact 4.2-5 would be reduced to a less than significant impact.

4.2.4 Cumulative Impacts

Threshold	Would the project conflict with or obstruct implementation of the applicable air quality plan?

Cumulative projects within SCAB have the potential to result in a cumulative impact if, in combination, they conflict with or obstruct the implementation of SCAQMD's AQMP and SCAG's 2016 RTP/SCS. Projects listed in Table 3-3 (Cumulative Project List in Chapter 3) in this EIR could result in a cumulative impact by increasing dwelling unit density, vehicle trips, or VMT exceeding projected rates for the region. As discussed under Impact 4.4-1 above, regional growth rates associated with the project are higher than those included in the SCAG 2016 RTP/SCS. Therefore, full buildout of the proposed project may contribute to existing adverse air quality conditions in the region resulting in a cumulatively considerable effect. The increased growth rate anticipated in the proposed SGCP would not be consistent with adopted air quality plans. The proposed project would have a considerable contribution to a significant cumulative impact or such that a new significant cumulative impact related to conflicts with a plan would occur, and the impact is considered cumulatively considerable. The impact of cumulative projects is considered significant and unavoidable.

Threshold	Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?
Threshold	Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Cumulative projects have the potential to lead to a violation of an air quality standard or contribute substantially to an existing or projected air quality violation. If multiple large construction projects occur simultaneously in close proximity, it is possible that cumulative impacts associated with air quality violations would occur. As discussed in Impact 4.4-2 and Impact 4.4-3, increased development would result in long-term operational emissions of VOC, NO_X, PM_{10}, $PM_{2.5}$, and CO that exceed the applicable thresholds. Thus, VOC, NO_X, PM_{10}, $PM_{2.5}$, and CO emissions generated under full buildout of the proposed project may result in adverse air quality impacts to existing surrounding land uses and may

contribute to the adverse air quality conditions in the SCAB. The proposed project's contribution to cumulative construction and operational air quality impacts is considered cumulatively considerable. This impact is considered significant and unavoidable.

Threshold	Would the project expose sensitive receptors to substantial pollutant concentrations?

Cumulative projects have the potential to expose sensitive receptors to a substantial concentration of TACs that would significantly increase cancer risk or acute or chronic health risks. As with the proposed project, construction-related activities associated with cumulative projects would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road heavy-duty diesel equipment and on-road diesel-powered haul trucks. The proposed SGCP could result in TAC exposure to existing or future planned sensitive land uses. Due to the uncertainty of future sensitive receptor locations and the effectiveness of TAC reduction measures, in combination with other cumulative projects, and the existing level of health risk, the proposed project would have a considerable contribution to a significant cumulative impact. This impact is considered significant and unavoidable.

Threshold	Would the project create objectionable odors affecting a substantial number of people?

Individual projects listed in Table 3-3 (Cumulative Project List in Chapter 3) of this EIR have the potential expose sensitive receptors to odorous emissions; however, odors are localized in nature and restricted to the immediate vicinity of the odor source. Cumulative projects may individually create individual sources of odor; however, the cumulative effect would be minimal due to the localized nature of objectionable odors. Additionally, cumulative projects located in SCAB would be required to comply with SCAQMD's Rule 402 (Nuisance) that regulates odor emissions. Although the proposed project would indirectly introduce new stationary and mobile odor sources into the proposed SGCP area, the impact is not considered cumulatively considerable. This impact is considered less than significant.

4.2.5 References

Ascent Environmental. 2017. Draft Technical Report for the South Glendale Community Plan Update Air Quality Assessment. (Appendix B to this EIR).

California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model Version 2016.3.1. Online URL: http://www.caleemod.com/

California Air Resources Board (CARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Online URL: https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf

California Air Resources Board (CARB). 2003. HARP User Guide. Online URL: https://www.arb.ca.gov/toxics/harp/docs/userguide/Cover.pdf

California Air Resources Board (CARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Online URL: https://www.arb.ca.gov/ch/handbook.pdf

California Air Resources Board (CARB). 2013. California Almanac of Emissions and Air Quality—2013 Edition. Online URL: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm

California Air Resources Board (CARB). 2016. May 4. Ambient Air Quality Standards. Accessed June 26, 2017. Online URL: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf

California Office of Environmental Health and Hazard Assessment (OEHHA). 2015. Air Toxic Hot Spot Program Guidance Manual for Preparation of Health Risk Assessments. Online URL: http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

City of Glendale (Glendale). 2010. Greener Glendale 2010 Report. Online URL: http://www.glendaleca.gov/home/showdocument?id=7164

City of Glendale (Glendale). 2011. Greener Glendale Plan for Municipal Operations. Online URL: http://www.glendaleca.gov/home/showdocument?id=6928

City of Glendale (Glendale). 2012. Greener Glendale Plan for Community Activities. Accessed April 27, 2017. Online URL: http://www.glendaleca.gov/home/showdocument?id=6934

Fehr & Peers. 2017. South Glendale Community Plan Draft Transportation Analysis Report. August. (Appendix F to this EIR).

Knape, M. 1999. "Traffic related air pollution in city districts near motorways." The Science of the Total Environment. p. 235:339-341.

South Coast Air Quality Management District (SCAQMD). 1993. CEQA Air Quality Handbook. Online URL: https://planning.lacity.org/eir/8150Sunset/References/4.B.%20Air%20Quality/AQ.19_SCAQMD%20CEQA%20AQ%20Handbook%201993.pdf

South Coast Air Quality Management District (SCAQMD). 2015. Air Quality Significance Thresholds. Online URL: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

South Coast Air Quality Management District (SCAQMD). 2016. National Ambient Air Quality Standards and California Ambient Air Quality Standards Attainment Status for South Coast Air Basin. Online URL: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf

Southern California Association of Governments (SCAG). 2016. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life. Online URL: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS.pdf

Western Regional Climate Center (WRCC). 2016. Glendale Stapenhorst, California (043450), Period of Record Monthly Climate Summary. Online URL: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3450

Zhu, Y et al. 2002. "Study of Ultra-Fine Particles Near A Major Highway With Heavy Duty Diesel Traffic." Atmospheric Environment. p. 36:4323-4335. Online URL: https://www.sciencedirect.com/science/article/pii/S1352231002003540

This page intentionally left blank.