4.2 Air Quality

This section evaluates the potential impacts on air quality resulting from implementation of the proposed Brasada Residential Project. This evaluation includes the potential for the project to conflict with or obstruct implementation of the applicable air quality plan, violate an air quality standard, result in a cumulatively considerable net increase of any criteria pollutant for which the project region is not in attainment, or expose sensitive receptors to substantial pollutant concentrations. Information in this section is based on the Air Quality and Greenhouse Gas Technical Report for the Brasada Residential Project prepared by PBS&J (2010) and included as Appendix B of this EIR. Project impacts related to greenhouse gas (GHG) emissions are discussed in Section 4.6 (Greenhouse Gas Emissions).

4.2.1 Environmental Setting

4.2.1.1 Climate and Meteorology

The proposed project is located in the South Coast Air Basin (Basin). This Basin includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County. 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 interrupted infrequently 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 (°F). 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 project site is the San Dimas Fire Station FC95; however, this station does not have sufficient temperature data recorded. The next closest station, the Pomona Fairplex Station, reports an average mean temperature of 62.5°F between 1893 and 2009. The average annual low is reported as 47.5°F, while the average high is reported as 77.5°F (Western Regional Climate Center 2010a).

Rainfall is seasonally and annually variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. The annual average precipitation recorded at the San Dimas Fire Station FC95 between 1906 and 2009 was 18.5 inches. The wettest month of the year is January with an average rainfall of 4.31 inches in the project area (Western Regional Climate Center 2010b).

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 onshore 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 four miles per hour.

Between the periods of dominant airflow, 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, down slope Santa Ana winds. These winds normally last 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.

4.2.1.2 Criteria Air Pollutants

Federal and state laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. 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, reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and most fine particulate matter including lead (Pb) and fugitive dust (PM_{10} and $PM_{2.5}$) are primary air pollutants. Of these, carbon monoxide, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROGs and NO_x are criteria pollutant precursors that go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone and nitrogen dioxide (NO_2) are the principal secondary pollutants. Diesel particulate matter is a mixture of particles and is a component of diesel exhaust. The United States Environmental Protection Agency (EPA) lists diesel exhaust as a mobile source air toxic due to the cancer and non-cancer health effects associated with exposure to whole diesel exhaust.

Presented below is a description of each of the primary and secondary criteria air pollutants and their known health effects.

Carbon Monoxide is an odorless, colorless, and toxic gas. Because it is impossible to see, taste, or smell the toxic fumes, carbon monoxide can kill people before they are aware that it is in their homes. At lower levels of exposure, carbon monoxide causes mild effects that are often mistaken for the flu. These symptoms include headaches, dizziness, disorientation, nausea, and fatigue. The effects of carbon monoxide exposure can vary greatly from person to person depending on age, overall health, and the concentration and length of exposure (EPA 2010). The major sources of carbon monoxide in the Basin are on-road vehicles, aircraft, and off-road vehicles and equipment.

Reactive Organic Gases (ROGs) are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. ROGs consist of non-methane hydrocarbons and oxygenated hydrocarbons. Hydrocarbons are organic compounds that contain only hydrogen and carbon atoms. Non-methane hydrocarbons are hydrocarbons that do not contain the un-reactive hydrocarbon, methane. Oxygenated hydrocarbons are hydrocarbons with oxygenated functional groups attached.

It should be noted that there are no state or national ambient air quality standards for ROGs because they are not classified as criteria pollutants. They are regulated, however, because a reduction in ROG emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROGs are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} levels and lower visibility. Although health-based standards have not been established for ROGs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, higher concentrations of ROGs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, kidneys, and central nervous system (EPA 1999).

The major sources of ROGs in the Basin are on-road motor vehicles and solvent evaporation. Benzene is an ROG and known carcinogen. Benzene is emitted into the air from gasoline service stations (fuel evaporation), motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is also sometimes used as a solvent for paints, inks, oils, waxes, plastic, and rubber. It is used in the extraction of oils from seeds and nuts. It is also used in the manufacture of detergents, explosives, dyestuffs, and pharmaceuticals. Short-term (acute) exposure of high doses of benzene from inhalation may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation. At higher levels, unconsciousness can occur. Long-term (chronic) occupational exposure of high doses by inhalation has caused blood disorders, including aplastic anemia and lower levels of red blood cells (EPA 1999).

Nitrogen Oxides (NO_x) serve as integral participants in the process of photochemical smog production. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown, irritating gas formed by the combination of NO and oxygen. NO_x acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens. NO_x is also an ozone precursor. A precursor is a directly emitted air contaminant that, when released into the atmosphere, forms, causes to be formed, or contributes to the formation of a secondary air contaminant for which a National Ambient Air Quality Standard (NAAQS) has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more NAAQS. When NO_x and ROGs are released in the atmosphere, they chemically react with one another in the presence of sunlight to form ozone.

NO_2 is a byproduct of fuel combustion. The principal form of NO_2 produced by combustion is nitrogen oxide (NO). NO reacts with oxygen in the air to form NO_2 creating the mixture of NO and NO_2 commonly called NO_x. Other oxides of nitrogen including nitrous acid and nitric acid are part of the nitrogen family. While the EPA's NAAQS covers this entire family, NO_2 is the component of greatest interest and the indicator for the larger group of NO_x.

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

Lead (Pb) is a solid heavy metal that can exist in air pollution as an aerosol particle component. An aerosol is a collection of solid, liquid, or mixed-phase particles suspended in the air. Lead was first regulated as an air pollutant in 1976. Leaded gasoline was first marketed in 1923 and was used in motor vehicles until around 1970. The exclusion of lead from gasoline helped to decrease emissions of lead in the United States from 219,000 to 4,000 tons per year between 1970 and 1997. Even though leaded gasoline has been phased out in most countries, some, such as Egypt and Iraq, still use at least some leaded gasoline (United Nations Environment Programme 2010). Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and physical weathering of surfaces containing lead. The mechanisms by which lead can be removed from the atmosphere (sinks) include deposition to soils, ice caps, oceans, and inhalation.

Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. The more serious effects of lead poisoning include behavioral disorders, mental retardation, and neurological impairment. Low levels of lead in fetuses and young children can result in nervous system damage, which can cause learning deficiencies and low intelligence quotients (IQs). Lead may also contribute to high blood pressure and heart disease. Lead concentrations once exceeded the state and national air quality standards by a wide margin but have not exceeded these standards at any regular monitoring station since 1982. Lead is no longer an additive to normal gasoline, which is the main reason that concentration of lead in the air is now much lower. The proposed project would not emit lead and, therefore, lead has been eliminated from further review in this analysis.

Sulfur Dioxide (SO_2) is a colorless, pungent gas. At levels greater than 0.5 parts per million (ppm), the gas has a strong odor, similar to rotten eggs. Sulfuric acid is formed from SO_2 and is an aerosol particle component that may lead to acid deposition. Acid deposition into water, vegetation, soil, or other materials can harm natural resources and materials. Sulfur oxides (SO_x) include SO_2 and sulfur trioxide (SO_3). Although SO_2 concentrations have been reduced to levels well below state and national standards, further reductions are desirable because SO_2 is a precursor to sulfates. Sulfates are a particulate formed through the photochemical oxidation of SO_2. Long-term exposure to high levels of SO_2 can cause irritation of existing cardiovascular disease, respiratory illness, and changes in the defenses in the lungs. When people with asthma are exposed to high levels of SO_2 for short periods of time during moderate activity, effects may include wheezing, chest tightness, or shortness of breath.

Particulate Matter (PM) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulate, also known as fugitive dust, are now recognized. Course particles, or 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, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns, that is 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; however, 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. The South Coast Air Quality Management District (SCAQMD) recently promulgated both regional and localized emissions thresholds for $PM_{2.5}$. These are based on the proposed EPA standard of 10 tons per year as included in the Federal Register, September 8, 2005.

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 (similar to sandblasting activities). Finally, fugitive dust can result in a nuisance factor due to the soiling of proximate structures and vehicles.

Diesel particulate matter is a mixture of many exhaust particles and gases that is produced when an engine burns diesel fuel. Many compounds found in diesel exhaust are carcinogenic, including 16 that are classified as possibly carcinogenic by the International Agency for Research on Cancer. Diesel particulate matter includes the particle-phase constituents in diesel exhaust. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation and exposure can cause coughs, headaches, light-headedness, and nausea. Diesel exhaust is a major source of ambient fugitive dust pollution as well, and numerous studies have linked elevated fugitive dust levels in the air to increased hospital admission, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems (OEHHA 2001) Diesel particulate matter in the Basin poses the greatest cancer risk of all the toxic air pollutants.

4.2.1.3 Existing 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 area is located within Source/Receptor Area (SRA) 10, Pomona/Walnut Valley. No data was available for PM_{10} or $PM_{2.5}$ in SRA 10; therefore, data from monitoring station SRA 9, located in East San Gabriel County, was used for these pollutants. Data from monitoring stations in SRAs 9 and 10 are summarized in Table 4.2-1.

Ozone pollution generally increased between 2006 and 2008, with 47 days experiencing a violation of the state 8-hour standard. The data show recurring violations of both the state and federal ozone standards in 2007 and 2008, but no violations in 2006. The data also indicate that the area exceeds the PM_{10} state standards and $PM_{2.5}$ federal standards. The carbon monoxide and NO_2 standards have not been violated in the last three years in SRA 10.

Table 4.2-1 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Standards Were Exceeded and Maximum Levels During Such Violations					
	2006		2007		2008	
Ozone – SRA 10						
State 1-hour ≥ 0.09 ppm	0	days	19	days	32	days
State 8-hour ≥ 0.07 ppm	0	days	25	days	47	days
Federal 8-hour > 0.08 ppm	0	days	10	days	35	days
Maximum 1-hour Concentration (ppm)	0.06	ppm	0.153	ppm	0.141	ppm
Maximum 8-hour Concentration (ppm)	0.040	ppm	0.108	ppm	0.110	ppm
Carbon Monoxide – SRA 10						
State 8-hour > 9.0 ppm	0	days	0	days	0	days
Federal 8-hour ≥ 9.5 ppm	0	days	0	days	0	days
Maximum 1-hour Concentration (ppm)	3	ppm	3	ppm	3	ppm
Maximum 8-hour Concentration (ppm)	1.88	ppm	2.0	ppm	2.0	ppm
Nitrogen Dioxide – SRA 10						
State 1-hour ≥ 0.25 ppm	0	days	0	days	0	days
Maximum 1-hour Concentration (ppm)	0.09	ppm	0.10	ppm	0.11	ppm
Maximum Annual Concentration (ppm)	--	ppm	0.0318	ppm	0.0302	ppm
Respirable Particulates (PM_{10}) – SRA 9						
State 24-hour > 50 $\mu g/m^3$	0	days	11	days	13	days
Federal 24-hour > 150 $\mu g/m^3$	0	days	0	days	0	days
Maximum 24-hour Concentration ($\mu g/m^3$)	49	$\mu g/m^3$	83	$\mu g/m^3$	98	$\mu g/m^3$
Maximum Annual Concentration ($\mu g/m^3$)	--	$\mu g/m^3$	35.6	$\mu g/m^3$	35.3	$\mu g/m^3$
Fine Particulates ($PM_{2.5}$) – SRA 9						
Federal 24-hour > 35 $\mu g/m^3$	3	days	19	days	5	days
Maximum 24-hour Concentration ($\mu g/m^3$)	52.8	$\mu g/m^3$	63.8	$\mu g/m^3$	34.8	$\mu g/m^3$
Maximum Annual Concentration ($\mu g/m^3$)	--	$\mu g/m^3$	15.9	$\mu g/m^3$	14.1	$\mu g/m^3$

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; SRA = Source/Receptor Area
Source: SCAQMD 2010a

4.2.2 Regulatory Framework

4.2.2.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the EPA to establish NAAQS with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that GHGs, including carbon dioxide, are air pollutants covered by the CAA; however, no NAAQS have been established for GHGs.

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.

Current NAAQS are listed in Table 4.2-2. 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 classifications for ozone non-attainment include and range in magnitude from marginal, moderate, serious, severe, and extreme. The EPA classifies the Basin as in attainment for carbon monoxide and NO_2. The Basin is in non-attainment for PM_{10} and $PM_{2.5}$ and is in extreme non-attainment for ozone (8-hour). With this designation, the Basin must meet attainment of the 8-hour standard by 2024. Table 4.2-3 lists the attainment status of the Basin for the criteria pollutants.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

4.2.2.2 State

California Clean Air Act

The California Clean Air Act (CCAA) allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. The ARB, a part of the California EPA (CalEPA) is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California ambient air quality standards (CAAQS). The ARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The ARB 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. The ARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to standards set for the six criteria pollutants, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles (see Table 4.2-2). These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Further, in addition to primary and secondary AAQS, the state 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 that actually threaten public health.

Table 4.2-2 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]	Federal Standards [2]	
		Concentration	Primary [3, 4]	Secondary [3, 5]
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	--	Same as Primary Standards
	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m	--	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard	35 µg/m	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m	15 µg/m	
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1-hour	0.18 ppm (470 mg/m^3)	--	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	--	0.030 ppm (80 µg/m^3)	--
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	--
	3 Hour	--	--	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	--	--
Lead[6]	30 Day Average	1.5 µg/m^3	--	--
	Calendar Quarter	--	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average[7]	--	0.15 µg/m^3	
Visibility Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles.	No Federal Standards	
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Vinyl Chloride[6]	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	

(1) California standards for ozone, carbon monoxide, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.

(2) National standards, other than 1-hour ozone, 8-hour ozone, 24-hour PM_{10}, 24-hour $PM_{2.5}$, and those based on annual averages, are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the annual fourth-highest daily maximum 8-hour concentrations is below 0.08 ppm. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile 24-hour concentrations is below 150 µ*g*/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile 24-hour concentrations is below 65 µ*g*/m^3.

(3) Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar). All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

(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) The ARB had identified lead and vinyl chloride as "toxic air contaminants" with no threshold level 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.

(7) National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Source: ARB 2010a

Table 4.2-3 Attainment Status for the South Coast Air Basin

Pollutant	State Status	Federal Status
Ozone (1-hour)	Extreme Non-attainment	Note [1]
Ozone (8-hour)	Extreme Non-Attainment	Extreme non-attainment[2]
PM_{10}	Non-attainment	Serious non-attainment[2]
$PM_{2.5}$	Non-attainment	Non-attainment
Carbon Monoxide	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead (Pb)	Attainment	Attainment

Note [1] The federal 1-hour ozone standard was revoked in 2005 and is no longer in effect for the state of California.
[2] Source: EPA 2010. Currently Designated Nonattainment Areas for All Criteria Pollutants. Last updated June 16, 2010. http://www.epa.gov/air/oaqps/greenbk/ancl.html#CALIFORNIA
Source: ARB 2010b

The Basin is designated as attainment of the CAAQS for carbon monoxide, NO_2, SO_2, and lead. The Basin is in non-attainment status for PM_{10} and $PM_{2.5}$ and is designated as extreme non-attainment for ozone (1-hour and 8-hour).

4.2.2.3 Local

Air Quality Management Plan

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the Air Quality Management Plan (AQMP) for the Basin. Since 1979, a number of AQMPs have been prepared. The 1997 AQMP, updated in 1999 and replaced in 2003, was based on the 1994 and 1991 AQMPs, and was designed to comply with state and federal requirements, reduce the high level of pollutant emissions in the Basin, and ensure clean air for the region through various control measures. To accomplish its task, the 1991 AQMP relied on a multilevel partnership of governmental agencies at the federal, state, regional, and local level. These agencies (i.e., the EPA, the ARB, local governments, SCAG, and SCAQMD) are the cornerstones that implement the AQMP programs.

The 2003 AQMP, adopted in August 2003, updated the attainment demonstration for the federal standards for ozone and PM_{10}; replaced the 1997 attainment demonstration for the federal carbon monoxide standard and provided a basis for a maintenance plan for carbon monoxide for the future; and updated the maintenance plan for the federal NO_2 standard that the Basin has met since 1992.

The most recent comprehensive plan is the 2007 AQMP adopted on July 13, 2007. The 2007 AQMP is designed to meet the state and federal CAA planning requirements and focuses on ozone and $PM_{2.5}$. The 2007 AQMP incorporates significant new emissions inventories, ambient measurements, scientific data, control strategies, and air quality modeling.

South Coast Air Quality Management District Rule 403 – Fugitive Dust

During construction, projects within the Basin are 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 sources) 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 micrograms per cubic meter ($\mu g/m^3$) as determined through PM_{10} high-volume sampling, but the concentration standard and associated PM_{10} sampling do not apply if specific measures identified in the rules are implemented and appropriately documented.

In accordance with Rule 403, the SCAQMD requires that contractors implement Best Available Control Technology (BACT) for construction activities. These requirements are identified in Table 4.2-4. Note that these measures are regulatory requirements and as such, do not constitute mitigation under CEQA.

The conditions included in Table 4.2-4 apply to construction activities conducted during normal wind conditions (i.e., with wind gusts less than 25 miles per hour). Additional contingency measures, included in Table 4.2-5, are applied to those periods when instantaneous wind gusts meet or exceed 25 miles per hour.

4.2.3 Project Impacts and Mitigation

4.2.3.1 Issue 1 – Consistency with Regional Plans

Air Quality Issue 1 Summary

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

Impact: Implementation of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Standards of Significance

Based on Appendix G of the CEQA Guidelines and the SCAQMD Handbook, an impact would be considered significant if implementation of the proposed project would result in a conflict with, or obstruct implementation of, the 2007 AQMP.

Table 4.2-4 Required Best Available Control Measures for Fugitive Dust (Applicable to All Construction Activity Sources)

Source Category	Control Measures[1]	Guidance[2]
Backfilling	Stabilize backfill material when not actively handling; stabilize backfill material during handling; and stabilize soil at completion of activity.	Mix backfill soil with water prior to moving; dedicate water truck or high capacity hose to backfilling equipment; 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 pre-watering of site prior to clearing and grubbing; 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; 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; pre-water material prior to loading into crusher; 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; stabilize surface soil where support equipment and vehicles will operate; stabilize loose soil and demolition debris; and comply with AQMD 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; 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; 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; 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; maintain at least six inches of freeboard on haul vehicles; stabilize material while transporting to reduce fugitive dust emissions; stabilize material while unloading to reduce fugitive dust; and comply with Vehicle Code Section 23114.	Use tarps or other suitable enclosures on haul trucks; check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; 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; maintain materials in a crusted condition; maintain effective cover over materials; stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes; and hydro seed prior to rain season.

Table 4.2-4. Continued

Source Category	Control Measures[(1)]	Guidance[(2)]
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; 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; drop material through the screen slowly and minimize drop height; and install wind barrier with a porosity of no more than 50 percent 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; 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; 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 used only 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 resume 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.	

(1) Control Measures are required actions.
(2) Guidance are suggestions on how to accomplish the control measures.
Source: SCAQMD 2004

Table 4.2-5 Contingency Control Measures for Fugitive Dust During High Winds[1]

Fugitive Dust Source Category	Control Measures
Earth-moving	Cease all active operations; or apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; apply chemical stabilizers prior to wind event; apply water to all unstabilized disturbed areas three times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; or utilize any combination of these control actions such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	Apply chemical stabilizers prior to wind event; apply water twice per hour during active operation; or stop all vehicular traffic.
Open storage piles	Apply water twice per hour; or install temporary coverings.
Paved road track-out	Cover all haul vehicles; or comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All categories	Any other control measures approved by the Executive Officer and the EPA as equivalent to the methods specified in this table may be used.

[1] Winds exceeding 25 miles per hour
Source: SCAQMD 2004

Impact Analysis

The determination of whether the project would conflict with the applicable AQMP is based on regional population projections. The 2007 AQMP relies on population projections from SCAG, which are based on Department of Finance (DOF) projections, as well as other factors, to determine growth in the Basin and related vehicular transportation patterns. The SCAG includes six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. Therefore, SCAG projections include the entire Basin. The AQMP relies on information from the ARB and SCAG to predict future criteria pollutants, including mobile and area source emissions which in turn are based on the population projections. The population estimates used to determine future emissions in the 2007 AQMP are shown in Table 4.2-6. As shown in this table, the population of the SCAG region is projected to reach 19.6 million persons by 2030. Table 4.2-6 also shows the population projections for the city of San Dimas. San Dimas consistently accounts for less than one percent (between 0.2 and 0.25 percent) of the regional population.

The project proposes the development of 61 new homes in San Dimas. Based upon the current persons-per-household ratio of 2.78 in the city (City of San Dimas 2008), the project would increase the population by approximately 170 persons. The resulting incremental increase in the city's population (to 40,215 persons) would still represent less than one percent of the SCAG population projections for the region, and would therefore be accommodated within the growth accounted for in the AQMP. Implementation of the proposed project would not conflict with, or obstruct implementation of the AQMP. Therefore, the impact would be less than significant.

Table 4.2-6 Comparison between Regional and City of San Dimas Population Estimates

Year	SCAG Regional Population[1]	City of San Dimas Population	Percent of SCAG Regional Population
1990	13,000,000	32,397[2]	0.25
2000	14,800,000	34,980[2]	0.24
2010	16,900,000	36,946[3]	0.22
2020	18,400,000	40,045[4]	0.22
2030	19,600,000	41,046[4][5]	0.21

Sources:
(1) SCAQMD 2007
(2) City of San Dimas 2008
(3) California Department of Finance 2010
(4) City of San Dimas 2004
(5) The Natural Hazard Mitigation Plan (City of San Dimas 2004) projects the population of San Dimas to reach 40,045 by 2020 and 42,047 by 2040. Therefore, for the purposes of this analysis, it is assumed that 50 percent of the projected growth in the city between 2020 and 2040 would occur by 2030.

Summary

Implementation of the proposed project would not conflict with, or obstruct implementation of, the AQMP; therefore, impacts related to consistency with regional plans would be less than significant.

Mitigation Measures

The proposed project would not result in a significant impact related to consistency with regional plans; therefore, no mitigation is required.

4.2.3.2 Issue 2 – Conformance to Federal and State Ambient Air Quality Standards

Air Quality Issue 2 Summary

Would implementation of the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Impact: Implementation of the proposed project would violate the air quality standards for NO_x, PM_{10}, and $PM_{2.5}$ during the mass grading phase of construction.

Mitigation: Implementation of Best Management Practices (BMPs) during the mass grading phase of construction **(Air-2a**); Restriction of unpaved haul road usage **(Air-2B)**.

Significance Before Mitigation: Significant.

Significance After Mitigation: Significant and Unavoidable.

Standards of Significance

Based on Appendix G of the CEQA Guidelines and the SCAQMD Handbook, an impact would be considered significant if the proposed project would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

In order to assess whether or not a proposed project would cause a significant effect on the environment, the impact of the project must be analyzed by examining the types and levels of emissions generated and their impacts on factors that affect air quality. The SCAQMD has established air pollution thresholds against which a proposed project can be evaluated, thereby assisting lead agencies in determining whether or not implementation of the proposed project would result in a significant impact to air quality. If the thresholds are exceeded by a proposed project, then the impact is considered significant.

While the final determination of significance thresholds is within the purview of the lead agency, pursuant to the CEQA Guidelines, the SCAQMD recommends that the following air pollution thresholds be used by lead agencies in determining whether impacts to air quality during the construction or operational phase of a proposed project are significant. If the lead agency finds that the proposed project has the potential to exceed any of the air pollution thresholds, impacts resulting from implementation of the proposed project would be considered significant. Table 4.2-7 lists the significance thresholds for air quality that have been established by the SCAQMD for construction and operational emissions.

Table 4.2-7 SCAQMD Thresholds of Significance

Pollutant	Construction Emissions (pounds/day)	Operation Emissions (pounds/day)
ROG	75	55
NO_x	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150

ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide;
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter;
SO_x = sulfur oxides
Source: SCAQMD 2009a

Impact Analysis

Construction

Air pollutant emission sources during project construction would include exhaust and particulate emissions generated from construction equipment; fugitive dust from soil disturbance during site preparation, grading, and excavation activities; and volatile compounds that evaporate during site paving and painting of the structures. The project site is approximately 273 acres; however, only 90

acres of the site would be disturbed during construction. Residences would vary in size from 4,000 square feet to 15,000 square feet, with an average size of 5,000 to 6,000 square feet. Based on the average lot sizes, for this analysis it was assumed that 59 homes would be 6,000 square feet in size, and two homes would be 15,000 square feet in size. Construction would take approximately 5.25 years to complete. The proposed project construction phases include demolition of existing structures, mass grading, trenching for utilities, paving, building construction, and exterior architectural coating, as shown in Table 4.2-8. It was assumed that the demolition, grading, trenching, paving, and building construction phases would occur consecutively, with no overlap. The building construction and architectural coating phases were assumed to overlap because some buildings would be completed and occupied while other homes are being constructed. The demolition phase assumed that 100,000 cubic feet of demolition would be required to demolish the existing caretaker's quarters, stable, and barn. Grading would occur over a six month period, with a total of 132 working days. This analysis assumed that a limit of five acres per day would be disturbed and/or graded. A total of 1.3 million cubic yards of soil would be graded and replaced on site. To balance the material on site, graded material would be moved throughout the site and the same material may be graded more than once. Therefore, it was assumed that a maximum of five percent, or 65,000 cubic yards, of material would be graded each day. All cut material would be used on site and no hauling of material off site would be required. Approximately three months would be required for installation of the utilities; the first month of utility construction was assumed to be the trenching phase of construction. Roadway widths would vary between 20 and 26 feet. To be conservative, and to account for the widened ends of cul-de-sacs and emergency turn-around areas, it was assumed that all proposed roadways on the project site would be 26 feet wide. Paving would be required for approximately 9.5 acres and would be accomplished in approximately three months. Because the residential units on the project site would be developed by multiple developers, and many are anticipated to be custom-built residences, the building phase of construction was estimated to last approximately 54 months, or 4.5 years. Based on information provided by the applicant, the analysis assumed a maximum of 95 daily trips would be generated by construction workers, or approximately 1.6 trips per residential unit per day. It was assumed that the architectural coating phase would occur simultaneously with the building construction phase; therefore, the coating phase would last approximately 4.5 years. With the exception of the assumptions discussed above, URBEMIS2007 default values were used to calculate the proposed project's construction emissions. The URBEMIS2007 model does not take into account the additional construction standards adopted by the ARB after 2007. For example, beginning in 2008, heavy-duty diesel engines were required to be shut down when idling more than five minutes at any location within California. Therefore, the analysis provided above is conservative and actual project emissions may be less than calculated by the URBEMIS2007 model.

Table 4.2-8 Approximate Duration of Project Construction Phases

Construction Phase	Duration
Demolition	1 month
Mass Grading	6 months
Trenching	1 month
Paving	3 months
Building Construction and Coating	54 months
Total Construction Duration	**63 months**

Source: URBEMIS 2007.

Table 4.2-9 summarizes the maximum daily emissions of demolition, grading (assuming a maximum of five acres per day), paving, construction, and coating in comparison with the SCAQMD regional thresholds of significance. As shown in Table 4.2-9, project-related emissions would be below the significance threshold in all construction phases except for the grading phase. Construction of the proposed project would exceed the significant thresholds for NO_x, PM_{10}, and $PM_{2.5}$ during grading. Impacts to air quality resulting from the grading phase of construction would be potentially significant.

Table 4.2-9 Construction Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds per day)					
	CO	**NO_X**	**ROG**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Demolition	5	7	1	0	1	1
Mass Grading[(1)]	60	**141**	16	0	**7,725**	**1,617**
Trenching	9	15	2	0	1	1
Paving	10	15	3	0	1	1
Sum of Building Construction and Coating Phases	31	17	6	0	1	1
Building Construction	*31*	*17*	*4*	*0*	*1*	*1*
Coating	*0*	*0*	*2*	*0*	*0*	*0*
SCAQMD Threshold	**550**	**100**	**75**	**150**	**150**	**55**
Significant Impact?	No	**Yes**	No	No	**Yes**	**Yes**

[(1)] Assuming a maximum land disturbance of five acres per day.
Bold = Exceeds SCAQMD threshold
ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides
Source: URBEMIS 2007.

Operational

Emissions related to the operation of the proposed project were calculated using the URBEMIS2007 computer model. The major source of long-term operational air quality impacts from the proposed project would be emissions produced from project-generated vehicle trips. Vehicle trip generation for the proposed project is based on the proposed project traffic study, which was prepared by Urban Crossroads (2010a). Pollutant emissions from vehicles were calculated using the standard assumptions and EMFAC2007 emission factors that are used in URBEMIS2007, as recommend by the SCAQMD (SCAQMD 2009c).

In addition to vehicle trips, the proposed project would produce emissions from on-site area sources. Area sources of emissions associated with the project include natural gas combustion emissions from space and water heating, emissions from the use of fuel combustion emissions from landscape maintenance equipment, emissions from energy use of consumer products, and ROG emissions from periodic repainting of interior and exterior surfaces.

The vehicular and area source emissions associated with operation of the proposed project are summarized in Table 4.2-10. As shown in this table, the proposed project would not exceed any of the daily regional thresholds during operation. Therefore, impacts to air quality resulting from operation would be less than significant.

Table 4.2-10 Operational Maximum Daily Emissions

Emissions Source	CO	NO_x	ROG	SO_x	PM_{10}	$PM_{2.5}$
Vehicular Sources	58	6	5	0	11	2
Area Sources						
Natural Gas	1	1	0	0	0	0
Landscape	4	0	1	0	0	0
Consumer Products	0	0	3	0	0	0
Architectural Coatings	0	0	0	0	0	0
Total Emissions	**63**	**7**	**9**	**0**	**11**	**2**
SCAQMD Thresholds	**550**	**55**	**55**	**150**	**150**	**55**
Significant Impact?	No	No	No	No	No	No

ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides
Source: URBEMIS 2007.

Summary

Construction of the proposed project would exceed the significant thresholds for NO_x, PM_{10}, and $PM_{2.5}$ during the mass grading phase. The proposed project would not exceed any of the daily regional thresholds during any other construction phase, or during project operation. Therefore, the grading phase of project construction would result in a significant impact related to conformance to federal and state ambient air quality standards.

Mitigation Measures

Implementation of mitigation measures AQ-2A and AQ-2B during the mass grading phase of construction of the proposed project would minimize emissions of NO_x, PM_{10}, and $PM_{2.5}$ during grading. Table 4.2-11 summarizes the project-related emissions during mass grading with implementation of mitigation measure AQ-2A and AQ-2B. Implementation of mitigation measures AQ-2A and AQ-2B would reduce emissions of NO_x, PM_{10}, and $PM_{2.5}$, to a less than significant level, as shown in Table 4.2-11. However, mitigation measure AQ-2B, which requires paving all haul roads, is not feasible for this project because grading would occur throughout the site for the duration of the grading period, and, in order to balance cut and fill on the project site, graded material would be moved to various locations on the project site. Haul roads would have to be paved to move material, then unpaved again to continue grading or to begin construction. Paving and demolishing the pavement on the project site would result in additional air quality impacts. Therefore, mitigation measure AQ-2B would not be implemented. Only mitigation measure AQ-2A would be implemented to reduce emissions of NO_x, PM_{10}, and $PM_{2.5}$ during grading. As shown in this table, implementation of mitigation measure AQ-2A alone would reduce NO_x emissions to a level below the significance threshold. This impact would be less than significant. Emissions of PM_{10} and $PM_{2.5}$ would be reduced, but would still exceed the significance thresholds. Therefore, impacts related to emissions of PM_{10} and $PM_{2.5}$ would be significant and unavoidable.

Table 4.2-11 Mitigated Construction Daily Maximum Emissions (pounds per day)

Source	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Implementation of Mitigation Measure AQ-2A and AQ-2B						
Mass Grading[(1)]	60	96	16	0	**123**	**27**
SCAQMD Threshold	**550**	**100**	**75**	**150**	**150**	**55**
Significant Impact?	No	No	No	No	No	No
Implementation of Mitigation Measure AQ-2A Only						
Mass Grading[(1)]	60	96	16	0	**468**	**99**
SCAQMD Threshold	**550**	**100**	**75**	**150**	**150**	**55**
Significant Impact?	No	No	No	No	**Yes**	**Yes**

[(1)] Assuming a maximum land disturbance of five acres per day.
ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide;
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides
Source: URBEMIS 2007

AQ-2A **Construction Best Management Practices**. During all grading activities for the proposed project, the project applicant shall ensure implementation of the following best management practices (BMPs) to reduce the emissions of NO_x and fugitive dust (PM_{10} to $PM_{2.5}$). Prior to issuance of a grading permit, the City Engineer shall verify that these BMPs are specified on the grading plan.

i. All grading equipment shall be EPA rated Tier 2 or above, shall use aqueous diesel fuel, and shall be fitted with a diesel oxidation catalyst that reduces emissions of NO_x by at least 20 percent.

ii. All exposed soil areas shall be watered a minimum of three times per day, or as allowed under any imposed drought restrictions. On windy days or when fugitive dust can be observed leaving the construction site, additional water shall be applied at a frequency to be determined by the on-site construction superintendent.

iii. Graded areas on slopes shall be provided with temporary hydroseeding and areas with cleared vegetation and graded slopes shall be irrigated as soon as possible following grading activities in areas that will remain in disturbed condition (but will not be subject to further construction activities) for a period greater than five days during the construction phase.

iv. All transported material shall be securely covered to prevent fugitive dust.

v. All vehicles on the construction site shall be operated at speeds less than 15 miles per hour.

vi. All non-paved haul roads shall be watered at least three times per day.

vii. All stockpiles that will not be utilized within three days shall be covered with plastic or equivalent material, to be determined by the on-site construction contractor, or they shall be sprayed with a non-toxic chemical stabilizer.

viii. Soil stabilizers shall be applied to any disturbed area that is to remain inactive for more than five consecutive days. For prolonged periods of inactivity, re-application of soil

stabilizer shall be conducted as appropriate to eliminate visible dust from leaving the site.

ix. Ground cover in disturbed areas shall be replaced within 30 days of the completion of construction activities. Dust suppression shall be required for all disturbed areas where ground cover has not yet been re-established.

x. All soil/debris/fill materials being loaded or unloaded at the site shall be watered down sufficiently within 15 minutes of its loading/unloading. The materials shall be saturated to the point where no visible dust plumes are generated during loading/unloading activities.

AQ-2B During all grading activities for the proposed project, the on-site construction superintendent shall ensure that no unpaved haul roads are utilized on the project site. All unpaved haul roads shall be paved prior to use. The unpaved road shall be watered twice daily prior to paving.

4.2.3.3 Issue 3 – Impacts to Sensitive Receptors

Air Quality Issue 3 Summary

Would implementation of the proposed project expose sensitive receptors to substantial pollutant concentrations?

Impact: The proposed project would exceed localized significance thresholds for PM_{10} and $PM_{2.5}$ during the grading phase of construction.	**Mitigation:** Implementation of Best Management Practices during the mass grading phase of construction (**Air-2a**); Restriction of unpaved haul road usage **(Air-2B)**.
Significance Before Mitigation: Significant.	**Significance After Mitigation:** Significant and Unavoidable

Standards of Significance

Based on Appendix G of the CEQA Guidelines and the SCAQMD Handbook, a project would result in a potentially significant impact if it would expose sensitive receptors to substantial pollutant concentrations.

ARB defines sensitive receptors as residences, schools, day care centers, playgrounds, and medical facilities, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. The two primary emissions of concern regarding health effects for land development are carbon monoxide and diesel particulates.

Carbon Monoxide Hotspots

Areas with high vehicle density, such as congested intersections and parking garages, have the potential to create high concentrations of carbon monoxide, known as carbon monoxide “hot spots.” An air quality impact is considered significant if carbon monoxide emissions create a hot spot where either the California 1-hour standard of 20 ppm or the federal and state 8-hour standard of 9.0 ppm is exceeded.

Localized Sensitive Receptors

In addition to the regional daily threshold values presented in Table 4.2-7, the SCAQMD has established the following look-up tables for each SRA that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. The allowable emissions for SRA 10 from construction activities with a maximum disturbance of five acres per day are listed in Table 4.2-12, below. The localized thresholds indicate the amount of pollutant emissions from a construction site that would not disperse to below a significant level at a sensitive receptor at a given distance away. The thresholds become less stringent for receptors located farther from a construction site because fewer emissions from the construction site would reach the sensitive receptor, due to dispersion of the pollutants. For example, based on the thresholds in Table 4.2-12, emissions of carbon monoxide from a project that would result in 2,000 pounds per day of carbon monoxide during construction would not disperse to below an acceptable level at a receptor 25 meters (80 feet) away, but would disperse to below an acceptable level at receptors located 50 meters (160 feet) or more from the project site.

Table 4.2-12 Daily Localized Construction Thresholds for Source Receptor Area 10

	Pollutant Emissions (pounds per day)			
Distance of Receptor from Emissions Source	**CO**	**NO_2**	**PM_{10}**	**$PM_{2.5}$**
25 meters (80 feet)	1,566	236	12	7
50 meters (160 feet)	2,158	265	36	9
100 meters (330 feet)	3,691	330	51	15
200 meters (660 feet)	7,011	426	82	28
500 meters (1,640 feet)	23,450	681	175	93

NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = respirable particulate matter;
$PM_{2.5}$ = fine particulate matter
Source: SCAQMD 2009b

The localized sensitive receptor analysis for operation only applies to projects smaller than five acres. Following construction, operation of the proposed project would include a total of 90 acres; therefore, no localized sensitive receptors analysis was conducted for operation of the proposed project. The regional significance thresholds listed in Table 4.2-7 are the only applicable thresholds for a project this size. However, it is assumed that five acres would be graded per day during project construction. Therefore, the thresholds listed in Table 4.2-12 are applicable to the construction of the proposed project. If more than five acres would be graded, the localized thresholds would no longer apply to project construction; the regional thresholds listed in Table 4.2-7 would be the only applicable thresholds. The project's regional air quality impacts are analyzed in Section 4.2.3.2, Issue 2 – Conformance to Federal and State Ambient Air Quality Standards.

Toxic Air Contaminants

The ARB recommends distances for siting new sensitive land uses away from sources of TAC emissions in Table 1-1 of the Air Quality and Land Use Handbook (ARB 2005). The relevant sources of TAC emissions are freeways and high-traffic roads. The ARB recommends siting new sensitive land uses more than 500 feet away from freeways and high-traffic roads.

Impact Analysis

Carbon Monoxide Hotspots

Carbon monoxide 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 ambient air quality standards is typically demonstrated through an analysis of localized carbon monoxide concentrations. Areas of vehicle congestion have the potential to create carbon monoxide hot spots. These hot spots typically occur at intersections where vehicle speeds are reduced and idle time is increased. Intersections that tend to exhibit a significant carbon monoxide concentration typically operate at level of service (LOS) D or worse. During preparation of the 2003 AQMP, the SCAQMD modeled the four most congested intersections in the Basin to demonstrate that no exceedances of the carbon monoxide standard would occur. The four selected intersections were Long Beach Boulevard/ Imperial Highway, Wilshire Boulevard/Veteran Avenue, Highland Avenue/Sunset Boulevard, and Century Boulevard/La Cienega Boulevard. The analysis demonstrated that even the most congested intersections in the Basin would not experience a carbon monoxide hot spot.

Based on the proposed project traffic study prepared by Urban Crossroads (2010a), the project would generate 584 ADT, or about 10 ADT for each unit. The traffic analysis study area for the proposed project is defined as the Cataract Avenue/Foothill Boulevard intersection because all traffic from the project would exit the site through this intersection. The intersection currently operates at a LOS B during the AM peak hour and LOS C during the PM peak hour. With implementation of the proposed project, the Cataract Avenue/Foothill Boulevard intersection would operate at a LOS C during the AM and PM peak hours. Therefore, the project would not substantially increase traffic at the Cataract Avenue and Foothill Boulevard intersection and no impact associated with a carbon monoxide hotspot would occur.

Localized Sensitive Receptors

Local sensitive receptors include the existing residential development surrounding the project site. Additionally, because residences on the project site would be developed over a period of more than four years, some residential development would potentially be occupied while other units are under construction; therefore, the earlier occupied residences would be considered sensitive receptors during the building and architectural coating phases of construction of the latter-constructed residences. In accordance with the SCAQMD methodology, actual receptor locations with respect to the project should be used when available. The proposed residences would be a minimum of 25 feet (8 meters) apart from each other. The localized significance thresholds for a distance of 25 meters (80 feet) have been used for the analysis of impacts to the proposed occupied residences during the building and architectural coating phases of construction because 25 meters is the minimum distance for which thresholds have been established.

The closest existing residence to the project site is the residence located south of the project site with a driveway that runs parallel to Cataract Avenue. This residence is located approximately 400 meters (1,300 feet) from the nearest residential lot on the project site, and approximately 50 meters (160 feet) from Cataract Avenue, which would undergo utilities and drainage improvements as part of the proposed project. However, since Cataract Avenue is already developed, demolition and grading of this roadway would not be required within 50 meters (160 feet) of the off-site residence. Therefore, the significance thresholds for 50 meters (160 feet) of separation distance are used for impacts to the off-

site residence during all phases of construction except demolition and mass grading. No thresholds are established for a distance of 400 meters (1,300 feet). Therefore, the significance thresholds for 200 meters (660 feet) of separation distance are used for impacts to the off-site residence during the demolition and mass grading phases of construction.

A comparison of the maximum construction emissions from the proposed project and the localized significance thresholds for construction are shown in Table 4.2-13. As shown in Table 4.2-13, pollutant emissions from construction of the proposed project would not exceed the localized significance thresholds at the proposed residences because emissions from the building construction and coating phases would not exceed the localized significance thresholds for a receptor located 25 meters (80 feet) away. Construction would not exceed the thresholds at the off-site residence during any phase of construction except the grading phase. Emissions of PM_{10} and $PM_{2.5}$ would exceed the localized significance thresholds at the closest existing off-site residence during the grading phase of construction and would, therefore, result in a significant impact to a sensitive receptor.

Table 4.2-13 Localized Construction Emissions Concentrations

	Maximum Construction Emissions (pounds/day)			
Construction Phase	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Impacts to Proposed Residences				
Building Construction and Coating	31	17	1	1
Allowable emissions at 25 meters (80 feet)	1,566	236	12	7
Significant Impact?	No	No	No	No
Impacts to Off-site Residence – Demolition and Mass Grading				
Demolition	5	7	1	1
Mass Grading[(1)]	60	141	**7,725**	**1,617**
Allowable emissions at 200 meters (660 feet)	*7,011*	*426*	*82*	*28*
Significant Impact?	No	No	**Yes**	**Yes**
Impacts to Off-site Residence – All Other Construction Phases				
Trenching	9	15	1	1
Paving	10	15	1	1
Building Construction and Coating	31	17	1	1
Allowable emissions at 50 meters (160 feet)	*2,158*	*265*	*36*	*9*
Significant Impact?	No	No	No	No

[(1)] Assuming a maximum land disturbance of five acres per day.
Bold = significant impact
ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_x = sulfur oxides
Source: URBEMIS 2007, SCAQMD 2009b

Toxic Air Contaminants

The proposed residential land uses within the proposed development would not attract diesel trucks. Diesel trucks are associated with the transportation of goods from distribution centers and would not make deliveries to a residential development. Additionally, residential land use is not considered a source of TAC emissions in ARB's Air Quality and Land Use Handbook (2005). However, residential land uses are considered to be a sensitive land use by the ARB. With regard to off-site sources of TAC

emissions, the ARB recommends siting distances for new sensitive land uses away from land uses identified as sources of TACs, such as freeways, rail yards, ports, refineries, dry cleaners, and large gas dispensing facilities. The land uses surrounding the project site are residential uses that would not be sources of TAC emissions. The nearest potential sources of TAC emissions would be the Interstate (I) 210 freeway and Foothill Boulevard, a major roadway. ARB recommends siting sensitive land uses more than 500 feet (0.1 mile) from freeways and major roadways. I-210 is located approximately 0.6 mile south of the project site and Foothill Boulevard is located approximately 0.3 mile south of the project site. Therefore, the proposed project would not be sited near a source of TAC emissions and the potential impact would be less than significant.

Summary

The project would not substantially increase traffic at the Cataract Avenue and Foothill Boulevard intersection and no impact associated with a carbon monoxide hotspot would occur. The project site would not be sited near a source of TAC emissions that would result in impacts to project residents. However, emissions of PM_{10} and $PM_{2.5}$ would exceed the localized significance thresholds at the nearest off-site residence during the grading phase of construction. Therefore, the proposed project would result in a significant impact related to sensitive receptors.

Mitigation Measures

Mitigation measures AQ-2A and AQ-2B would minimize the proposed project's emissions of PM_{10} and $PM_{2.5}$, which would reduce the impact to localized sensitive receptors. As discussed in Section 4.2.3.2, Issue 2 – Conformance with Federal and State Ambient Air Quality Standards, mitigation measure AQ-2B would be infeasible for the project and would not be implemented. Table 4.2-14 compares the mitigated project emissions (with implementation of mitigation measure AQ-2A) to the localized significance thresholds. As shown in this table, even with implementation of mitigation measure AQ-2A, impacts related to PM_{10} and $PM_{2.5}$ would be significant. This impact would be significant and unavoidable.

Table 4.2-14 Mitigated Localized Construction Emissions Concentrations

	Mitigated Maximum Construction Emissions	
	PM_{10} (lbs/day)	**$PM_{2.5}$ (lbs/day)**
Mass Grading Emissions With Implementation of mitigation measure AQ-2A[(1)]	468	99
Allowable emissions at 200 meters	**57**	**18**
Significant Impact?	**Yes**	**Yes**

[(1)] Assuming a maximum land disturbance of five acres per day.
Source: URBEMIS 2007, SCAQMD 2009b

4.2.3.4 Issue 4 – Objectionable Odors

Air Quality Issue 4 Summary

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

Impact: The proposed project would not create objectionable odors affecting a substantial number of people.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Standards of Significance

Based on Appendix G of the CEQA Guidelines and the SCAQMD Handbook, the proposed project would result in a potentially significant impact if it would create objectionable odors affecting a substantial number of people.

Impact Analysis

Construction associated with implementation of the proposed project could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. However, construction equipment would be operating at various locations throughout the project site and construction would not take place all at once. In addition, construction near existing sensitive receptors would be temporary. Therefore, impacts associated with nuisance odors during project construction would not be significant.

The ARB's Air Quality and Land Use Handbook identifies a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. The project proposes the development of residential land uses on the project site. Residential development does not typically result in a source of nuisance odors associated with operation. Therefore, project odors would not be considered objectionable and odor impacts would be less than significant.

Summary

The proposed project would not create objectionable odors affecting a substantial number of people; therefore, impacts related to objectionable odors would be less than significant.

Mitigation Measures

The proposed project would not result in a significant impact related to objectionable odors; therefore, no mitigation is required.

4.2.4 Cumulative Impacts and Mitigation

Air Quality Cumulative Issue Summary

Would implementation of the proposed project have a cumulatively considerable contribution to a cumulative air quality impact considering past, present, and probable future projects?

Cumulative Impact	*Cumulative Significance*	*Proposed Project Contribution*
Consistency with Regional Plans: Cumulative development in the region would conflict with the AQMP.	Less than significant.	Not cumulatively considerable.
Conformance to Federal and State Ambient Air Quality Standards/ Cumulatively Considerable Net Increase of Criteria Pollutants: Cumulative development in the region would result in additional emissions of PM_{10}, $PM_{2.5}$, and ozone precursors.	Significant.	Cumulatively considerable and unavoidable.
Impacts to Sensitive Receptors: Cumulative development in the region would result in additional sensitive receptors and sources of pollutants.	Potentially significant.	Not cumulatively considerable.
Objectionable Odors: Cumulative development in the region would create additional objectionable odors.	Less than significant.	Not cumulatively considerable.

4.2.4.1 Consistency with Regional Plans

The geographic context for cumulative impacts related to consistency with the 2007 AQMP is the city of San Dimas. Cumulative projects in the city would be consistent with the AQMP if they propose development that is consistent with the growth anticipated for the city by the SCAQMD in the AQMP, based on growth projections from SCAG. The cumulative projects within the city identified in Table 4.0-2, Past, Present and Probable Future Cumulative Projects, that include residential development are the seven lot subdivision on Baseline Road; the two lot subdivision on Baseline Road; Loma Bonita Apartments, which proposes 156 units; the four lot subdivision on Gladstone Street; the 18 lot subdivision on Lonehill Avenue; Grove Station, which proposes 110 units; the three lot subdivisions on Puddingstone Drive; and the three lot subdivision on Cannon Avenue. At least some of these proposed units have already been accounted for in the growth projections for the city utilized by the SCAQMD. However, to be conservative, it is assumed that all of the cumulative projects would result in unplanned growth. These cumulative projects would result in approximately 303 new residences, and would accommodate a population of approximately 842 people. The proposed project, in combination with the cumulative projects, would increase the projected population of the city of San Dimas in 2020 from 40,045 to 41,057 people. The projected population for the entire basin is 18,400,000 people in 2020. The increased population in the city as a result of the cumulative projects and the proposed project still represents only 0.22 percent of the entire SCAG region. As shown in Table 4.2-6, this cumulative growth is consistent with SCAG projections for growth anticipated for the city in the AQMP. Therefore, a significant cumulative impact would not occur.

4.2.4.2 Conformance to Federal and State Ambient Air Quality Standards/Cumulatively Considerable Net Increase of Criteria Pollutants

The geographical context for this analysis is the Basin. The Basin is in non-attainment for PM_{10}, $PM_{2.5}$, and ozone. ROGs and NO_x are precursors that form ozone through chemical and photochemical reactions in the atmosphere. Therefore, there is an existing significant cumulative impact in the Basin resulting from air quality violations of PM_{10}, $PM_{2.5}$, ROG, and NO_x emissions.

Construction

As discussed in Section 4.2.3.2, Issue 2 – Conformance to Federal and State Ambient Air Quality Standards, emissions of NO_x, PM_{10}, and $PM_{2.5}$ from mass grading during construction of the proposed project would exceed established thresholds. Based on an air emissions dispersion equation used by the SCAQMD to determine localized PM_{10} concentrations, a significant cumulative impact would occur if two projects are located close enough to each other that their combined construction emissions would exceed the screening level thresholds. The acceptable distance threshold between projects is 150 meters (500 feet), at which distance the PM_{10} concentration generally decreases by approximately 99.9 percent (Urban Crossroads 2007). Based on information provided by the City of San Dimas and the City of Glendora (2010), all of the cumulative projects in the vicinity of the proposed project are located south of Foothill Boulevard, with the exception of four projects. The nearest cumulative project is the Cataract project, which proposes 17 residential units at the intersection of Cataract Avenue and Foothill Boulevard. This project is located approximately 650 feet from the proposed improvements on Cataract Avenue, and approximately 3,000 feet from the nearest proposed residential lot on the project site. Therefore, this cumulative project is not located within 150 meters (500 feet) of the proposed project and emissions from this project would not combine with those from the proposed project to result in a significant cumulative PM_{10} impact. Although settling properties for $PM_{2.5}$ and dispersion properties for NO_x are slightly different from PM_{10}, it can reasonably be assumed that due to the distance (650 feet) between the proposed project and the nearest cumulative project, emissions of $PM_{2.5}$ and NO_x from the proposed project and the Cataract project would also not combine to be significant.

However, the proposed project alone would have the potential to exceed the significance thresholds for NO_x, PM_{10}, and $PM_{2.5}$ during mass grading. Because there is an existing significant cumulative impact in the Basin resulting from air quality violations of PM_{10}, $PM_{2.5}$, ROG, and NO_x emissions, any exceedance of these thresholds would be considered a significant cumulative impact. Implementation of mitigation measure AQ-2A would reduce NO_x emissions to a level below its significance threshold. With implementation of mitigation measure AQ-2A, emissions of NO_x would not be cumulatively considerable. Mitigation measures AQ-2A would also reduce the PM_{10}, and $PM_{2.5}$ emissions, but not to below a significant level. Therefore, the proposed project's contribution of PM_{10} and $PM_{2.5}$ emissions would be cumulatively considerable and unavoidable during construction.

Operational

Based on the analysis presented in Section 4.2.3.2, Issue 2 – Conformance to Federal and State Ambient Air Quality Standards, implementation of the proposed project would not exceed any significance thresholds for operational impacts. As discussed above, none of the cumulative projects identified in Table 4.0-2, Past, Present and Probable Future Cumulative Projects, would be located close enough to

the project site (within 150 meters) to result in a combined exceedance of a significance threshold. Additionally, as discussed in Section 4.2.3.1, Issue 1 – Consistency with Regional Plans, the proposed project would be consistent with projected growth in the SCAQMD and, therefore, emissions from the project have already been accounted for in the 2007 AQMP. The proposed project's operational emissions would not be cumulatively considerable.

4.2.4.3 Impacts to Sensitive Receptors

The analysis of impacts to local sensitive receptors is project-specific and not cumulative in nature. The localized significance thresholds are intended to analyze localized impacts associated with projects that are smaller than five acres (SCAQMD 2008). The thresholds determine impacts of the proposed project on the nearest sensitive resource. The localized significant thresholds do not apply to regional projects, such as General Plans, or to a list of cumulative projects. Therefore, there is no cumulative analysis for impacts to localized sensitive receptors.

Carbon Monoxide Hotspots

The geographic context for the analysis of cumulative impacts relative to exposure of sensitive receptors to carbon monoxide hot spots includes the intersection of Cataract Avenue/Foothill Boulevard, which was evaluated in the traffic analysis prepared for the proposed project (Urban Crossroads 2010a). Most of the cumulative projects identified in Table 4.0-2, Past, Present and Probable Future Cumulative Projects, would be located south of Foothill Boulevard. Therefore, cumulative project traffic would generally be concentrated on the roadways south of Foothill Boulevard and would not result in a cumulative increase in traffic at the Cataract Avenue/Foothill Boulevard intersection that would result in a carbon monoxide hot spot. However, one cumulative project, the Cataract Project, proposes 17 residential units at the intersection of Cataract Avenue and Foothill Boulevard. Three other projects are located in the vicinity of this intersection: the Tract 46680 and Tract 46916 projects, which propose a total of 30 residential units near the intersection of Foothill Boulevard and Lone Hill Avenue; and the Glendora Commons project, which proposes a 52,000 square foot shopping center on Amelia Avenue, south of Foothill Boulevard. According to the traffic analysis, with implementation of the proposed project and the cumulative projects, the Cataract Avenue/Foothill Boulevard intersection would operate at a LOS C during the AM peak hour and LOS D during PM peak hours in 2014 (Urban Crossroads 2010a). The proposed project, in combination with the cumulative projects, would have the potential to generate a carbon monoxide hot spot because the Cataract Avenue/Foothill Boulevard intersection would operate at a LOS D during the PM peak hour with implementation of the cumulative projects.

As discussed in Section 4.2.3.3, Issue 3 – Impacts to Sensitive Receptors, during preparation of the 2003 AQMP, the SCAQMD modeled the four most congested intersections in the Basin to demonstrate that no exceedances of the carbon monoxide standard would occur. The analysis demonstrated that even the most congested intersections in the Basin would not experience a carbon monoxide hot spot. The Cataract Avenue/Foothill Boulevard intersection would not be as congested as these intersections, which all operated at below a LOS D at the time of the study. Therefore, implementation of the cumulative projects and the proposed project would not generate a carbon monoxide hot spot at the Cataract Avenue/Foothill Boulevard intersection. A cumulative impact to sensitive receptors exposed to carbon monoxide hot spots would not occur.

Toxic Air Contaminants

The geographic context for the analysis of impacts related to toxic air contaminants is the Basin. Several of the cumulative projects identified in Table 4.0-2, Past, Present and Probable Future Cumulative Projects, would have the potential to attract diesel trucks, which emit diesel particulate matter. These projects include the warehouse project on Arrow Highway, the commercial development on Bonita Avenue, the Costco Pad Buildings project, the truck repair service bay, the industrial building on Covina Boulevard, the commercial portion of the Glendora Station Project, the Glendora Commons shopping center, the Grand Avenue Retail project, and the Glendora Promenade retail center. Additionally, some of the cumulative projects propose residential development near major roadways, such as the seven lot subdivision proposed on Baseline Road. Therefore, cumulative projects would have the potential to generate new sources of DMP, and expose new sensitive receptors to diesel particulate matter. A potentially significant cumulative impact would occur. However, none of the new truck trips generated by the cumulative projects would utilize Cataract Avenue. The only cumulative project that would result in new trips on Cataract Avenue would be the Cataract project, which proposes 17 residential units at the intersection of Cataract Avenue and Foothill Boulevard. The proposed project and the Cataract project are residential developments that would not attract truck trips typically associated with commercial/industrial uses. As discussed in Section 4.2.3.3, Issue 3 – Impacts to Sensitive Receptors, the nearest potential sources of TAC emissions to the project site would be the I-210 freeway and Foothill Boulevard. I-210 is located approximately 0.6 mile south of the project site and Foothill Boulevard is located approximately 0.3 mile south of the project site. Additionally, the proposed project would not generate diesel particulate matter. Therefore, the proposed project's contribution would not be cumulatively considerable.

4.2.4.4 Objectionable Odors

Impacts relative to objectionable odors are generally site specific and are not cumulative in nature. None of the cumulative projects identified in Table 4.0-2, Past, Present and Probable Future Cumulative Projects, are located immediately adjacent to the project site. The nearest cumulative project to the project site is the Cataract project, which proposes 17 residential units approximately 200 meters (650 feet) south of the proposed Cataract Avenue improvements, and approximately 915 meters (3,000 feet) from the nearest proposed residential lot. Additionally, none of the cumulative projects propose land uses that are typical sources of odor complaints such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. Therefore, a significant cumulative impact would not occur.

4.2.5 Issues With No Potential to Have a Significant Effect on the Environment

All of the issues identified in the Air Quality section of CEQA Appendix G: Environmental Checklist Form are fully analyzed for potential impacts in EIR Sections 4.2.3 and 4.2.4, above; therefore, no issues are addressed in this section.

4.2.6 References

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