IV. ENVIRONMENTAL IMPACT ANALYSIS

B. AIR QUALITY

The following analysis of air quality impacts is based on the Air Quality and Noise Technical Report prepared by Terry A. Hayes Associates LLC, dated December 2004. This report is included in its entirely as Appendix D of this Draft EIR.

EXISTING CONDITIONS

REGULATORY SETTING

Air quality in the United States is governed by several federal, state, and local agencies that have developed various rules and regulations to address air pollution issues and to develop ways by which to evaluate and reduce potential air quality impacts resulting from land use projects and other emissions-producing activities. The following outlines the most relevant of these regulations and the agencies responsible for implementing them.

Federal Clean Air Act

On the federal level, air quality is governed by the Federal Clean Air Act (CAA), which is administered by the United States Environmental Protection Agency (USEPA). The CAA was enacted in 1955 and has subsequently been amended several times. The CAA establishes federal health-based air quality standards, known as National Ambient Air Quality Standards (NAAQS), for six major pollutants, including: 1) Carbon Monoxide (CO); 2) Nitrogen Dioxide (NO_2); 3) Ozone (O_3), 4) Particulate Matter (PM_{10}); 5) Sulfur Dioxide (SO_2); and 6) lead (Pb). The NAAQS were amended in 1997 to include an additional standard for O_3 and to adopt a standard for fine particulates ($PM_{2.5}$).

In addition to establishing the NAAQS, the CAA specifies future dates for achieving compliance with the NAAQS and mandates that states develop and implement a State Implementation Plan (SIP) for local areas not meeting these standards. SIPs must include pollution control measures that demonstrate how the standards will be met in the future.

California Clean Air Act

On the state level, air quality is governed by the California Clean Air Act (CCAA), which is administered statewide by the California Air Resources Board (CARB) and regionally and locally by numerous Air Quality Management Districts (AQMDs). The CCAA, which was adopted in 1988 and most recently amended in 1992, requires all air districts in the state to endeavor to achieve and maintain statewide air quality standards, known as the California Ambient Air Quality Standard (CAAQS). These standards are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Because the CAAQS are more stringent than the NAAQS, they are used as the comparative standard in the analysis that follows. As stated above, CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for meeting the state requirements of the CAA, administering the CCAA, and establishing the CAAQS. CARB also oversees the functions of local air pollution control districts and air quality management districts.

South Coast Air Quality Management District

The project site is located with the jurisdiction of the South Coast Air Quality Management District (SCAQMD), which is the local air pollution control agency. SCAQMD has jurisdiction over an area of approximately 10,743 square miles, including Orange County; the non-desert portions of Los Angeles, Riverside, and Bernardino Counties; and the Riverside County portion of the Salton Sea Air Basin and Mojave Desert Air Basin. The SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain CAAQS and NAAQS in the district. The SCAQM has developed programs that include air quality rules and regulations for stationary source, area source, point source, and certain mobile source emissions. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases. In doing so, individual projects within the region must demonstrate during environmental review that daily construction and operational emissions thresholds as established by the SCAQMD would not be exceeded and that the number or severity of existing air quality violations would not be exceeded.

The South Coast Air Basin (SCAB) is a subregion of the SCAQMD that covers an area of 6,745 square miles. SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. SCAB is bounded by Pacific Ocean on the west; the San Gabriel, San Bernardino, and San Jacinto Mountains on the north and east; and the San Diego County line on the south.

Air Quality Management Plan

The SCAQMD, along with the Southern California Association of Governments (SCAG), are responsible for preparing the Air Quality Management Plan (AQMP), which addresses CAA and CCAA requirements and demonstrates attainment with the CAAQS and NAAQS. All areas designated as non-attainment under the CCAA are required to prepare such plans detailing policies and control measures that reduce emissions to attain state and federal air quality standards by their applicable deadlines. The most recent AQMP, which was adopted in August 2003, updates the attainment demonstration for the federal O_3 and PM_{10} standards, replaces the 1997 attainment demonstration for the federal CO standard, provides a basis for a CO maintenance plan for the future, and updates the maintenance plan for the federal NO_2 standard that SCAB has met since 1992. The AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP and the 1999 amendments to the O_3 SIP for the SCAB.

City of Los Angeles General Plan – Air Quality Element

The City of Los Angeles adopted the most recent revision to the City's General Plan Air Quality Element in 1992. The Air Quality Element, which encompasses the entire City of Los Angeles, sets forth goals, objectives, and policies that are intended to guide the City in the implementation of its air quality improvement programs and strategies. The primary objectives of the most recently revised Element are to aid the region in meeting the CAAQS and NAAQS, while continuing to allow for economic growth and quality of life improvements for residents of the City.

The Clean Air Program (CAP) was developed by the City as the blueprint for achieving federal, state, regional, and local air quality goals and serves as the implementing document for the Air Quality Element. The CAP consists of several implementation programs that are categorized into four major areas, including energy, land use, transportation, and dust suppression. These implementation programs lay out specific means by which air quality objectives can be met.

POLLUTANTS AND EFFECTS

Air quality studies generally focus on the five criteria pollutants that are most commonly measured and regulate, which are CO, NO_2, O_3, SO_2, and particulate matter.[1] These pollutants are briefly described below. Refer to the Air Quality and Noise Technical Report included as Appendix D of this Draft EIR for additional information on these pollutants.

Carbon Monoxide (CO)

CO is a colorless and odorless gas that is emitted almost exclusively from the incomplete combustion of fossil fuels. Along with CO_2, CO is emitted by motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. Automobile exhaust is responsible for up to 95 percent of the CO in urban areas. CO dissipates relatively quickly, so ambient CO concentrations generally follow the special and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability.

Ozone (O_3)

O_3 is a colorless toxic gas that is the chief component of urban smog. Although O_3 is not directly emitted from vehicles machinery or other man-made or natural sources, it forms in the atmosphere through a chemical reaction between reactive organic compounds (ROC) and nitrogen oxides (NO_x), which are emitted from industrial sources and from automobiles, under sunlight.[2] O_3 is present in relatively high concentrations with the SCAB. Meteorology and terrain play major roles in O_3 formation, with ideal conditions occurring during the summer and early autumn on days with low wind speeds, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile.

Nitrogen Dioxide (NO_2)

NO_2 is a brownish gas that is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as nitrogen oxides (NO_x) and are major contributors to the formation of O_3. NO_2 also contributes to the formation of PM_{10}.

Sulfur Dioxide (SO_2)

SO_2 is a product of high-sulfur fuel combustion. The main sources of SO_2 are coal and oil used in power plants and industries. Thus, the highest concentrations of SO_2 are found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and by limiting the sulfur content in fuel. However, while SO_2 concentrations have been reduced to levels well below the state and federal standards, further reductions in emissions are needed to attain compliance with standards for sulfates and PM_{10}, for which SO_2 is a contributor.

---

1 Prior to 1978, mobile emissions were the primary source of lead resulting in air concentrations. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. Currently, industrial sources are the primary source of lead resulting in air concentrations. Since the proposed project does not contain an industrial component, lead emissions are not analyzed.

2 Because O_3 is not directly emitted, ROC and NO_x are commonly analyzed, as emissions of these O_3 precursors are more easily modeled and estimated for environmental review purposes.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industry and motor vehicles undergo chemical reactions in the atmosphere. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter. Inhalable particulate matter (PM_{10}) refers to particulate matter that is less than 10 microns in diameter (about 1/7th the thickness of a human hair). Fine particulate matter ($PM_{2.5}$) refers to particulate matter that is 2.5 microns or less in diameter (roughly 1/28th the diameter of a human hair). Major sources of PM_{10} include crushing or grinding operations, dust stirred up by motor vehicles, wood burning stoves and fireplaces, dust from construction, landfills, agriculture, wildfires and brush/waste burning, industrial sources, windblown dust from open lands, and atmospheric chemical and photochemical reactions. $PM_{2.5}$ results from fuel combustion from motor vehicles, power generation, and industrial facilities, residential fireplaces, and wood stoves. $PM_{2.5}$ can also be formed in the atmosphere from gases such as SO_2, NO_x, and volatile organic compounds (VOCs).

NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

As discussed above, federal ambient air quality standards (NAAQS) have been established pursuant to the CAA for six major air pollutants: 1) CO; 2) NO_2; 3) O_3; 4) PM_{10}; 5) SO_2; and 6) lead. Similarly, the State of California has established state ambient air quality standards (CAAQS) pursuant to CCAA. CAAQS are generally more stringent than NAAQS and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. Since CAAQS are more stringent than NAAQS, CAAQS are used as the comparative standard in the air quality analysis contained in this report. The state and federal air quality standards are summarized in **Table IV.B-1**.

The CCAA requires CARB to designate areas within California as either attainment or non-attainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as non-attainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard, and are not used as a basis for designating areas as non-attainment. The attainment status for each of the criteria pollutants is indicated in **Table IV.B-1**. As shown in the table, the Los Angeles County portion of SCAB is designated as a non-attainment area for O_3 and PM_{10} under the CCAA. CO is designated as non-attainment transitional under the CCAA.[3] The SCAB is designated as an attainment area for NO_2, SO_2, and lead.

[3] The non-attainment transitional designation indicates that the state standard was violated two or fewer times during the most recent calendar year. In addition, recent air quality trends and meteorological and emissions data must show that air quality in the area has either stabilized or improved and each site in the area must be expected to reach attainment for the pollutant within three years.

TABLE IV.B-1
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR LOS ANGELES PORTION OF SCAB

Pollutant	Average Period	California Standards		Federal Standards	
		Standards	Attainment Status	Standards	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m^3)	Extreme Non-Attainment	0.12 ppm (235 μg/m^3)	Extreme Non-Attainment
	8 Hour	--	--	0.08 ppm (157 μg/m^3)	Severe Non-Attainment
Respirable Particulate Matter (PM_{10})	24 Hour	50 μg/m^3	Non-Attainment	150 μg/m^3	Serious Non-Attainment
	Annual Arithmetic Mean	20 μg/m^3	Non-Attainment	50 μg/m^3	Serious Non-Attainment
Fine Particulate Matter ($PM_{2.5}$)[1]	24 hour	--	--	65 μg/m3	Unclassified
	Annual Arithmetic Mean	12 μg/m^3	Unclassified	15 μg/m^3	Unclassified
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	Non-Attainment Transitional	9.0 ppm (10 mg/m^3)	Serious Non-Attainment
	1 Hour	20 ppm (23 mg/m^3)	Non-Attainment Transitional	35 ppm (40 mg/m^3)	Serious Non-Attainment
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	--	--	0.053 ppm (100 μg/m^3)	Attainment
	1 Hour	0.25 ppm (470 μg/m^3)	Attainment	--	--
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	--	0.030 ppm (80 μg/m^3)	Attainment
	24 Hour	0.04 ppm (105 μg/m^3)	Attainment	0.14 ppm (365 μg/m^3)	Attainment
	3 Hour	--	--	--	--
	1 Hour	0.25 ppm (655 μg/m^3)	Attainment	–	--
Lead (Pb)	30-day Average	(1.5 μg/m^3)	Attainment	--	Attainment
	Calendar Quarter	--	Attainment	1.5 μg/m^3)	Attainment

[1] Presently, no methodologies have been developed for determining impacts relating to $PM_{2.5}$, nor have strategies or mitigation programs been developed or adopted by federal, state, or regional agencies.

ppm = parts per million

μg/m^3 = micrograms per cubic meter

SOURCES: California Air Resources Board, Federal and State Air Quality Standards, November 17, 2003 and United States Environmental Protection Agency, 2004.

REGIONAL SETTING

The proposed project is located within the Los Angeles County portion of SCAB . The SCAB is characterized by high air pollution potential, largely due to the climate and topography, and the large amount of pollutant emissions experienced in the region. Warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity typify weather in the region. This mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region. Although meteorological conditions can be generalized for the SCAB as a whole, many distinct microclimates exist within the region as a result of varying topography and distance from the Pacific Ocean.

The SCAB experiences frequent temperature inversions, which occur when the temperature increases as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants get trapped near the ground. During the summer, poor air quality is created due to the interaction between the ocean surface and the lower layer of the atmosphere. This interaction creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO_2 react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving air pollutants inland, toward the mountains.

LOCAL SETTING

Local Climate and Air Quality

As stated above, due to the varying topography and distance from the ocean, there are many distinct microclimates within the SCAB. In the vicinity of the project site, the annual average temperature is 64 degrees Fahrenheit, and the average annual precipitation is approximately 16.1 inches, which occurs mostly during the winter months. The average wind speed is approximately four miles per hour, with calm winds occurring approximately 13 percent of the time. Wind in the project vicinity predominately blows from the southeast.

The SCAQMD maintains a network of air quality monitoring stations that are located throughout the SCAB. The project site is located in the West San Fernando Valley Air Monitoring Area, which is served by the Reseda Monitoring Station, located at located at 18330 Gault Street, in the City of Los Angeles, approximately 5.9 miles northwest of the project site. Criteria pollutants monitored at the Reseda Monitoring Station include O_3, CO, and NO_2. This monitoring station does not monitor SO_2 and PM_{10}. The nearest monitoring station that monitors these two pollutants is the Burbank Monitoring Station, located at 228 West Palm Avenue in the City of Los Angeles. The locations of these monitoring stations are depicted in **Figure IV.B-1**. Data from both the Reseda and Burbank Monitoring Stations were used to characterize existing air quality conditions within the vicinity of the project area and to establish a baseline for estimating future conditions with and without the proposed project. Please refer to the Air Quality and Noise Technical Report included as Appendix D of this Draft EIR for a summary of the data recorded at the Reseda and Burbank Monitoring Stations. **Table IV.B-2** shows the number of violations recorded at these stations during the period from 2001 through 2003. The CAAQS for the criteria pollutants are also shown in the table. As shown, O_3 levels exceeded the state standard 27 times in 2001, 42 times in 2002, and 68 times in 2003. PM_{10} levels exceeded the state standard an estimated 84 times in 2001 and 45 times in 2002. Data for 2003 are not available for PM_{10}. CO, NO_2, and SO_2 levels did not exceed state standards during this time.

Figure IV.B-1
SCAQMD Monitoring Stations

TABLE IV.B-2 2001 - 2003 CRITERIA POLLUTANT VIOLATIONS RESEDA AND BURBANK MONITORING STATIONS[1]				
Pollutant	**State Standard**	**Number of Days State Standard Exceeded**		
		2001	**2002**	**2003**
Ozone	0.09 ppm[2] (1-hour)	27	42	68
Carbon Monoxide	9.0 ppm (8-hour average)	0	0	0
Nitrogen Dioxide	0.25 ppm (1-hour)	0	0	0
Sulfur Dioxide	0.04 ppm (24-hour average)	0	0	0
PM_{10}[3]	50 $\mu g/m^3$ (24-hour average)[2]	84	45	n/a

[1] Emissions monitoring data recorded at the Reseda Station were used for O_3, CO, and NO_2. Emissions monitoring data recorded at the Burbank Monitoring Station were used for SO_2 and PM_{10}.
[2] Estimated days above state standard.
ppm – parts per million
$\mu g/m^3$ = micrograms per cubic meter.

SOURCE: California Air Resources Board, 2003.

Ambient CO Concentrations

CO concentrations are typically used as an indicator of conformity with the CAAQS because 1) CO levels are directly related to vehicular traffic, which is the main source of air pollutants, and 2) localized CO concentrations and characteristics can be modeled using USEPA and SCAQMD methods. Thus, the operational air quality impacts associated with a project are generally best reflected through the estimated changes in related CO concentrations.

For purposes of this analysis, the ambient, or background, CO concentration was established, which is the level that is typically defined as the highest eight-hour reading over the past three years. A review of data from the Reseda Monitoring Station for the period from 2001 through 2003 indicates that the eight-hour background CO concentration was approximately 6.1 ppm. Assuming a typical persistence factor of 0.7, the estimated one-hour background concentration would be approximately 8.8 ppm.[4] These background concentrations do not exceed the state CO standards of 9.0 ppm and 20.0 ppm, respectively.

Existing CO Concentrations

There is a direct relationship between traffic congestion and CO impacts, since exhaust fumes from vehicular traffic are the primary source of CO. CO is a localized gas that dissipates very quickly under normal meteorological conditions. Therefore, CO concentrations decrease substantially as distance from the source increases. As such, the highest CO concentrations

[4] The persistence factor is the ratio between the eight-hour and one-hour CO concentrations measured at a continuous air monitoring station.

are typically found along sidewalk locations directly adjacent to congested roadway intersections.

To provide a worst-case simulation of existing CO concentrations in the project vicinity, CO concentrations at sidewalks adjacent to five study intersections were modeled. These study intersections were selected based on volume and capacity (V/C ratio), traffic level of service (LOS), and proximity to sensitive receptors. For each of the five intersections, the CO contribution from existing traffic volumes was added to the ambient CO concentration discussed above. Traffic-related CO contributions were then estimated using a dispersion model developed by the USEPA that utilizes traffic volume inputs and CARB emissions factors. The study intersections and their corresponding CO concentrations are outlined in **Table IV.B-3**. As shown, one-hour CO concentrations range from 10.3 ppm to 11.3 ppm and eight-hour CO concentrations range from 7.2 ppm to 7.9 ppm. Based on these concentrations, none of the study intersections currently exceed the state one- and eight-hour CO standards of 20.0 ppm and 9.0 ppm, respectively.

TABLE IV.B-3
EXISTING CARBON MONOXIDE CONCENTRATIONS[1] (parts per million)

Intersection	1-Hour	8-Hour
De Soto Avenue and Rinaldi Street	10.5	7.3
De Soto Avenue and Tulsa Street	10.5	7.3
Chatsworth Street and De Soto Avenue	11.3	7.9
De Soto Avenue and Devonshire Street	11.3	7.9
Chatsworth Street and Mason Street	10.3	7.2
State Standard	**20.0**	**9.0**
Ambient Concentration[2]	**8.8**	**6.1**

[1] CO concentrations estimated using the CAL3QHC dispersion model utilizing EMFAC 7F year 2002 emissions factors.
[2] All concentrations include ambient concentration.

SOURCE: Terry A. Hayes Associates, December 2004 (Appendix D of this Draft EIR).

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities that take place thereon. For example, CARB identifies children under the age of 14, the elderly over the age of 65, athletes, and people with cardiovascular and chronic respiratory diseases as groups that are most likely to be affected by air pollution. Locations that may contain a high concentration of these sensitive population groups are called sensitive receptors and include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. Five representative sensitive receptors have been identified within one-quarter mile of the project site. These receptors represent a sampling of the closest sensitive locations that could be effected by the project and include single-family residences to the north and south of Rinaldi Street, on Nashville Street, and east of Lurline Avenue, and the proposed Sierra Canyon Secondary School itself. These sensitive receptors are identified in **Figure IV.B-2**. Since CO disperses quickly, concentrations are highest within close proximity to intersections. Thus, concentrations at sensitive receptors would be lower than the concentrations at the intersections listed in **Table IV.B-3**.

ENVIRONMENTAL IMPACTS

THRESHOLD OF SIGNIFICANCE

The SCAQMD has established thresholds for use in evaluating the potential for a project to cause air quality impacts pursuant to CEQA. These thresholds cover a range of conditions and circumstances that address both local and regional impacts arising from construction activities and long-term operation of a project. Consistent with the SCAQMD's *CEQA Air Quality Handbook* and the CEQA Guidelines, air quality impacts associated with the proposed project would be considered significant if:

- Short-term construction emissions or long-term operational emissions due to combined stationary and mobile emissions exceed the thresholds established by the SCAQMD, as shown in **Table IV.B-4**;

TABLE IV.B-4
SCAQMD DAILY EMISSIONS THRESHOLD CRITERIA (pounds per day)

Pollutant	Construction	Operations
Reactive Organic Compounds (ROC)	75	55
Nitrogen Oxides (NO_X)	100	55
Carbon Monoxide (CO)	550	550
Sulfur Oxides (SO_x)	150	150
Particulate Matter (PM_{10})	150	150

SOURCE: South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993.

- Project-related traffic causes CO concentrations at study intersections to violate CAAQS for either the one-hour (20.0 ppm) or the eight-hour (9.0 ppm) period, or

- The project is determined to be inconsistent with the regional Air Quality Management Plan (AQMP). Two key indicators of inconsistency are: 1) whether the project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards; or 2) whether the project would exceed the year 2010 growth assumptions contained in the AQMP.

Figure IV.B-2
Sensitive Receptor Locations

The proposed project does not contain lead emissions sources. Therefore, emissions and concentrations related to this pollutant are not analyzed in this Draft EIR.

In addition, although a federal air quality standard for $PM_{2.5}$ was adopted in 1997, there are currently no methodologies for determining impacts relating to $PM_{2.5}$. Furthermore, no strategies or mitigation programs for $PM_{2.5}$ have been developed or adopted by federal, state, or regional agencies. Therefore, this standard is currently not enforceable and $PM_{2.5}$ is, thus, not analyzed in this Draft EIR.

CONSTRUCTION PHASE IMPACTS

Regional Impacts

Construction of the proposed project could potentially cause air quality impacts through demolition of existing structures, grading and excavation, construction workers traveling to and from the project site, delivery and hauling of construction supplies and debris to and from the site, fuel combustion by on-site construction equipment, and the application of architectural coatings and other building materials. Such activities could temporarily create emissions of dusts, fumes, equipment exhaust, and other air contaminants.

As described in Section III, Project Description, of this Draft EIR, construction of the project would occur in three phases. Phase I, which is expected to last up to 18 months, would be the longest and most intense construction phase, involving site clearing; grading/excavation; and construction of the classroom building, parking level, campus plaza, and temporary athletic courts. Phase II, would include demolishing the existing residential building; additional grading/excavation; and construction of the administration building, athletics center, and aquatics center. Phase III would involve the development of the performing arts center. Specific durations of the second and third phases are not known at this time and it is possible that phasing may differ from this scenario (for example, if the performing arts center or athletics center could be built sooner, during Phase I). However, the described phasing sequence is considered the most likely scenario at this point and neither of the latter two phases would be longer than the initial construction phase.

Worst-case construction emissions were compiled using the URBEMIS 2002 emission inventory model. Since Phase I would be the longest phase and would involve the most construction activity, daily construction emissions were estimated for this phase. However, since no demolition activities would occur during Phase I, daily construction emissions during demolition were estimated for Phase II. For all other activities, daily construction emissions for Phases II and III would be similar to or less than Phase I.

Table IV.B-5 shows the estimated worst-case emissions associated with the worst-case construction phase. Daily PM_{10} emissions identified in the table assume proper implementation of SCAQMD Rule 403 Fugitive Dust Control Measures. Adherence to Rule 403 would reduce the amount of particulate matter entrained in the air as a result of construction activities on the project site by requiring best available control measures. Compliance with Rule 403 is estimated to reduce dust and PM_{10} emissions by approximately 60 percent during the grading/excavation phase. Mitigation Measures IV.B-1 through IV.B-10, would further ensure proper implementation of Rule 403.

TABLE IV.B-5
DAILY CONSTRUCTION EMISSIONS (pounds per day)

Construction Phase	ROC	NO_X	CO	SO_X	PM_{10}[1]
Demolition (Phase II)	5	51	37	<1	4
Grading/Excavation (Phase I)	5	43	33	<1	18
Building Construction (Phase I)	6	47	45	<1	2
Architectural Coating (Phase I)	47	<1	1	<1	<1
Asphalt Paving (Phase I)	4	25	35	1	1
Maximum Daily Emissions	**47**	**51**	**45**	**1**	**18**
SCAQMD Threshold	75	100	550	150	150
Amount Over (+) or Under (-)	*-28*	*-49*	*-505*	*-149*	*-132*
Significant?	**No**	**No**	**No**	**No**	**No**

1 Assumes implementation of SCAQMD Rule 403 Fugitive Dust Control Measures.

SOURCE: Terry A. Hayes Associates LLC, December 2004 (Appendix D of this Draft EIR).

As shown in **Table IV.B-5**, estimated daily construction emissions are not anticipated to exceed the SCAQMD thresholds for any of the criteria pollutants. Furthermore, PM_{10} emissions would not exceed the standard even without implementation of Rule 403, assuming adherence to Rule 403 reduces PM_{10} emissions by 60 percent. As none of the standards would be exceeded, a less than significant air quality impact would occur as a result of construction of the proposed project.

Odors

Construction activities on the project site may result in the release of objectionable odors that could have the potential to impact the surrounding land uses. Potential sources that could emit odors during construction include the use of architectural coatings and solvents. SCAQMD Rule 1113 limits the amount of VOCs from such sources. As compliance with SCAQMD rules is mandatory, objectionable odors created during construction would be limited. Thus, no significant impacts associated with such odors would occur.

OPERATIONAL PHASE IMPACTS

Regional Impacts

Occupancy and operation of the proposed project could potentially result in long-term project emissions generated by motor vehicles (mobile sources) and electricity and natural gas consumption (stationary sources). Mobile sources would be the predominant source of long-term project emissions. The project, which would consist of the development of private secondary school serving 550 students, is expected to generate approximately 984 daily vehicle trips.[5]

5 Crain & Associates, September 2004 (Appendix I of this Draft EIR).

Mobile source emissions were estimated using CARB's *URBEMIS 2002* emission inventory model. Stationary source emissions were calculated using the applicable emission factors and formulas provided in the *SCAQMD CEQA Air Quality Handbook*. The projected long-term mobile and stationary source emissions that would occur as a result of operation the proposed project are presented in **Table IV.B-6**. As shown, neither mobile nor stationary source emissions would exceed any of the SCAQMD significance thresholds for criteria pollutants. Therefore, regional air quality impacts associated with operation of the project would be less than significant.

TABLE IV.B-6
DAILY OPERATIONS EMISSIONS (pounds per day)

Emissions Source	ROC	NO_X	CO	SO_X	PM_{10}
Stationary Sources	<1	1	1	<1	<1
Mobil Sources	16	13	97	<1	9
Project Total	**16**	**14**	**98**	**<1**	**9**
SCAQMD Threshold	55	55	550	150	150
Amount Over (+) or Under (-)	*-39*	*-41*	*-452*	*-149*	*-141*
Significant?	**No**	**No**	**No**	**No**	**No**

SOURCE: Terry A. Hayes Associates LLC, December 2004 (Appendix [X] of this Draft EIR).

Localized Impacts

CO Hot Spots

Overall, CO concentrations in year 2007 (projected year of maximum occupancy) are expected to be lower than existing conditions due to stringent state and federal mandates for lowering vehicle emissions. Therefore, although traffic volumes would be higher in the future both with and without implementation of the proposed project, CO emissions from vehicles are expected to be much lower due to technological advances in vehicle emissions systems, as well as from normal turnover in the vehicle fleet. In other words, increases in traffic volumes are expected to be offset by increases in cleaner-running cars as a percentage of the entire vehicle fleet on the road.

CO concentrations at roadway intersections ("CO hot spots") for the year 2007 "no project" and "with project" conditions were calculated using the USEPA CAL3QHC micro-scale dispersion model. **Table IV.B-7** shows CO concentrations for both of these conditions. As shown, one-hour CO concentrations under "with project" conditions would range from approximately 8.4 ppm to 9.8 ppm. Eight-hour CO concentrations would range from approximately 5.9 ppm to 6.9 ppm. The state one- and eight-hour standards of 20.0 ppm and 9.0 ppm, respectively, would not be exceeded at the five study intersections. Thus, operation of the project would result in less than significant localized CO impacts.

TABLE IV.B-7 2004 AND 2007 CO CONCENTRATIONS (parts per million)						
Intersection	1-Hour Concentrations[1]			8-Hour Concentrations[1]		
	Existing (2004)	No Project (2007)	With Project (2007)	Existing (2004)	No Project (2007)	With Project (2007)
De Soto Avenue and Rinaldi Street	10.5	9.7	9.8	7.3	6.8	6.9
De Soto Avenue and Tulsa Street	10.5	8.7	8.9	7.3	6.1	6.2
Chatsworth Street and De Soto Avenue	11.3	9.1	9.3	7.9	6.4	6.5
De Soto Avenue and Devonshire Street	11.3	9.3	9.3	7.9	6.5	6.5
Chatsworth Street and Mason Avenue	10.3	8.5	8.4	7.2	6.0	5.9
State Standard	20.0			9.0		

[1] Existing concentrations include year 2003 one- and eight-hour ambient concentrations (8.8 and 6.1 ppm, respectively) and "no project" and "with project" concentrations include year 2007 one- and eight-hour ambient concentrations (6.1 and 5.0 ppm, respectively).

SOURCE: Terry A. Hayes Associates LLC, December 2004 (Appendix D of this Draft EIR).

Sensitive Receptors

As discussed previously, CO is a gas that disperses quickly. Thus, CO concentrations at sensitive receptor locations are expected to be much lower than CO concentrations at sidewalks adjacent to roadway intersections, which are modeled in this analysis and shown in **Table IV.B-7**, above. Sensitive receptors that are located at varying distances from the sidewalk locations or are located near roadway intersections with better LOS are expected to have lower CO concentrations. Therefore, as CO concentrations at sidewalks adjacent to intersections would not exceed the state one- and eight-hour standards, as shown in **Table IV.B-7**, CO concentrations at sensitive receptor locations would also not exceed these standards, as such concentrations would be less than the CO concentrations listed in the table. Therefore, localized CO impacts at sensitive receptors during operation of the project would be less than significant.

CO Concentrations from Proposed Parking Facility

The proposed project would include the development of 236 space on-grade parking level under the plaza level with spaces provided along the southern and eastern portions of the site (see Figure III-2, Plaza Level Plan in Section III, Project Description, of this Draft EIR.) The parking level would be nested into the existing slope at the northern and western portions of the site and would be partially enclosed toward the rear. Additionally, a driveway to the parking level would be located along the western edge of the project site. Given the partially enclosed nature of the parking level and the location of the driveway, it is anticipated that associated pollutants would be primarily released along the southern, eastern, and western portions of the project site, thereby resulting in higher pollutant concentrations in these areas. Residential uses are located near the project site to the south, east, and west. Therefore, given the design of the proposed parking level, it is likely that these residential uses could experience higher pollutant concentrations than uses in other areas of the project vicinity.

Using USEPA ISCST3 dispersion model, which estimates short-term pollutant concentrations at specific locations from multiple sources, CO concentrations were estimated at sensitive receptor locations (i.e., single-family residences on Lurline Avenue and north and south of Rinaldi Street) that could be affected by pollutants generated at the parking level. According to the project traffic study (included as Appendix I of this Draft EIR), more vehicles would be entering the parking level during the morning peak hour when students, employees, and parents arrive at the campus. Thus, CO concentrations were estimated for this time. The calculation takes into account passenger vehicles as well as buses, and assumes that the vehicles would either be idling or traveling at a low speed in the parking level.

The proposed parking level would incrementally increase the ambient one-hour CO concentration by approximately 0.2 to 0.4 ppm and would incrementally increase the ambient eight-hour CO concentration by approximately 0.1 to 0.2 ppm. As shown in **Table IV.B-8**, these one-hour CO concentrations, when added to the year 2007 “no project” CO concentration in the area, would range from 7.3 to 7.5 ppm, and eight-hour CO concentrations would range from 5.1 to 5.2 ppm at sensitive receptor locations. Thus, operation of the proposed parking level would not result in CO concentrations at the nearby sensitive receptors that would violate the state one- and eight-hour standards and less than significant impacts would occur.

Fugitive Dust and Odor from Proposed Equestrian Trail

A 12-foot wide equestrian trail is being proposed along the western edge of the project site, near the proposed aquatics center, administrative building, and performing arts center. This trail would be developed and maintained by Sierra Canyon Secondary School in order to facilitate continued equestrian access. Use of this trail has the potential to emit fugitive dust and create odors in the surrounding area. The proposed aquatics center and campus plaza would have the potential to be most affected by the trail since these uses are located outdoors, approximately 50 feet from the proposed trail. The equestrian trail and the proposed campus uses would be designed with landscape features, including native and non-native trees and shrubs, which would screen the equestrian trail from the project site. Specifically, landscaping and a 15-foot wall would be located between the aquatics center and the equestrian trail, and landscaping and the parking level driveway would separate the campus plaza from the trail. Additionally, the campus plaza would be approximately three to four feet above the equestrian trail. The wall, landscaping, and height difference would minimize dust impacts at the aquatics center and campus plaza. Given that the trail would be screened and/or buffered and would be located below the plaza area, any resulting dust would be considered minimal. Thus, less than significant impacts associated with dust from the proposed equestrian trail are anticipated. However, odors emanating from the proposed equestrian trail may become an issue when Sierra Canyon Secondary School is in session. Such nuisance impacts could be potentially significant, prior to implementation of proposed mitigation measures.

TABLE IV.B-8 2007 CARBON MONOXIDE CONCENTRATIONS FROM PROJECT PARKING		
	Concentration (parts per million)	
Receptor	1-Hour	8-Hour
Residences on Lurline Avenue	7.3	5.2
Residences South of Rinaldi Street	7.5	5.2
Residences North of Rinaldi Street	7.3	5.1
State Standard	20.0	9.0
Ambient Concentrations[1]	7.1	5.0
Significant?	**NO**	**NO**

[1] All concentrations include ambient concentrations.

SOURCE: Terry A. Hayes Associates LLC, December 2004 (Appendix D of this Draft EIR).

CONSISTENCY WITH THE AQMP

Criteria for determining consistency with the AQMP are defined in Chapter 12, Sections 12.2 and 12.3 of SCAQMD's *CEQA Air Quality Handbook*. There are two key indicators of consistency, as outlined under Thresholds of Significance, above. Generally, in order to be consistent with the AQMP, a project must meet these consistency criteria.

The first criterion requires that the project does not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP. The violations to which this consistency criterion refers are tied to the CAAQS. SCAQMD has determined that CO is the best indicator pollutant for determining whether air quality violations would occur since it is most directly related to automobile traffic. As indicated in the localized CO analysis provided above, the proposed project would not exacerbate existing violations or contribute to new violations of the state one- or eight-hour CO concentration standards and no significant adverse impacts associated with CO concentrations are anticipated. Therefore, the proposed project would be in compliance with this consistency criterion.

The second consistency criterion requires that the proposed project does not exceed the assumptions in the AQMP for 2010 or increments based on the year of maximum enrollment (in this case, year 2007). The proposed project is a secondary school educational facility and would not result in population growth in the area. Additionally, the proposed project is estimated to create approximately 100 jobs, which is not sufficiently large to call into question the employment forecasts for the subregion adopted by SCAG. Thus, the proposed project is not anticipated to exceed SCAG's growth projections and would comply with the second consistency criterion.

As neither of the two key indicators for inconsistency with the AQMP would be violated as a result of the project, the project would be consistent with the AQMP. Thus, no significant impacts would occur.

MITIGATION MEASURES

CONSTRUCTION

The following is a list of feasible control measures that SCAQMD recommends to reduce PM_{10} emissions during construction. These mitigation measures shall be implemented throughout construction of the project and in all areas where project construction occurs.

IV.B-1 The construction area and vicinity (500-foot radius) shall be swept (preferably with water sweepers) and watered at least twice daily.

IV.B-2 All unpaved roads, parking, and staging areas shall be watered at least once for every two hours of active operations.

IV.B-3 Site access points shall be swept/washed within thirty minutes of visible dirt deposition.

IV.B-4 On-site stockpiles of debris, dirt, or rusty material shall be covered or watered at least twice daily.

IV.B-5 All haul trucks hauling soil, sand, and other loose materials shall either be covered or maintain two feet of freeboard.

IV.B-6 All haul trucks shall have a capacity of no less than twelve and three-quarter (12.75) cubic yards.

IV.B-7 At least 80 percent of all inactive disturbed surface areas shall be watered on a daily basis when there is evidence of wind-driven fugitive dust.

IV.B-8 Operations on any unpaved surfaces shall be suspended when winds exceed 25 miles per hour.

IV.B-9 Traffic speeds on unpaved roads shall be limited to 15 miles per hour.

IV.B-10 Operations on any unpaved surfaces shall be suspended during first and second stage smog alerts.

OPERATION

IV.B-11 Unless maintenance of the equestrian trail is otherwise so dedicated to an equestrian organization, the City of Los Angeles, or other outside party, the project applicant shall implement and enforce an odor control and maintenance program to mitigate the effects of odors generated at the equestrian trail. In the event the trail is dedicated to the City, an equestrian organization or other outside party, the terms of the dedication shall include implementation of an odor control and maintenance program. The program shall include daily management of solid wastes generated by the horses and the disposal of wastes off-site at least twice weekly throughout operation of the project.

CUMULATIVE IMPACTS

Thirty related projects have been identified within the area, as outlined and described in Section IV, Environmental Setting, of this Draft EIR. Using SCAQMD daily emissions thresholds for individual development projects, cumulative emissions thresholds were calculated by multiplying each criteria pollutant threshold by the total number of individual projects. These cumulative thresholds establish a baseline from which to evaluate cumulative project emissions. **Table IV.B-9** shows the cumulative total emissions from all of the related projects, as well as the cumulative SCAQMD thresholds. Emissions for each of the individual related projects can be found in the Air Quality and Noise Report included as Appendix D of this Draft EIR.

TABLE IV.B-9
CUMULATIVE PROJECT OPERATIONAL IMPACT ANALYSIS

	Operational Emissions (pounds per day)				
	ROC	**NO_X**	**CO**	**SO_X**	**PM_{10}**
Cumulative Total Emissions	7,439	2,696	24,275	19	2,546
Cumulative SCAQMD Threshold[2]	1,705	1,705	17,050	4,650	4,650
Percent of Cumulative Threshold	436%	158%	142%	<1%	55%
Significant Cumulative Impact?	**Yes**	**Yes**	**Yes**	**No**	**No**
Proposed Project Total	**16**	**14**	**98**	**<1**	**9**
Proposed Project Contribution	0.002%	0.005%	0.004%	0.053%	0.004%

[1] Individual project threshold multiplied by the number of individual projects (31 total projects, including 30 related projects and the proposed project).
[2] Proposed project's percentage of total cumulative emissions.

SOURCE: Terry A. Hayes Associates LLC, December 2004 (Appendix D of this Draft EIR).

As indicated in **Table IV.B-9**, the 30 related projects in combination with the proposed Sierra Canyon Secondary School project are anticipated to exceed the cumulative SCAQMD operational emissions thresholds for ROC, NO_X, and CO. Nine of the 31 projects are anticipated to exceed at least one of the SCAQMD daily emissions thresholds for individual projects. However, the proposed project is not among them and would not cause a criteria pollutant exceedance. The proposed project would contribute much less than one percent of total ROC, NO_X, CO, SO_X, and PM_{10} emissions, as shown in **Table IV.B-9**. Thus, exceedance of the cumulative SCAQMD emissions thresholds for ROC, NO_X, and CO would occur even without implementation of the proposed project. As addressed in the impact analysis discussion, the proposed project would not exceed any of the SCAQMD construction or operational emissions thresholds for individual projects. However, although the project's contribution to the cumulative total emissions would be negligible, significant cumulative impacts would still occur with or without the project.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

CONSTRUCTION

No significant air quality impacts associated with construction of the project would occur. Nonetheless, Mitigation Measures IV.B-1 through IV.B-10 are proposed to ensure proper implementation of SCAQMD Rule 403. With these mitigation measures, daily dust and PM_{10} emissions daily PM_{10} emissions would be further reduced and well below the SCAQMD significance threshold. Thus, construction air quality impacts (before and) after implementation of proposed mitigation measures would be less than significant.

Construction related odor impacts would also be less than significant and no mitigation measures would be required.

OPERATION

Mobile and stationary source emissions would not exceed any of the SCAQMD significance thresholds for criteria pollutants. Therefore, regional air quality impacts associated with operation of the project would be less than significant and no mitigation measures would be required.

Localized CO concentrations at the five study intersections would not exceed the state standards. Similarly, the project, including operation of the proposed parking level, would not result in CO concentrations at the nearby sensitive receptors that would exceed the state standards. Thus, operation of the project would result in less than significant localized CO impacts and no mitigation measures would be required.

Development of the equestrian trail along the western edge of the project site would be adequately screened and/or buffered and would be located below the plaza area. Thus, no significant impacts associated with dust from this trail would occur and implementation of Mitigation Measure IV.B-11 would further ensure proper management of solid wastes from horses on this equestrian trail. With proper maintenance, as prescribed by this measure, odors from trail usage would be minimized and no significant and unavoidable odor impacts would occur.

Finally, the project would be consistent with the AQMP. No significant impacts would occur and no mitigation measures would be required.