3B. Air Quality

3B.1 INTRODUCTION

This air quality impact analysis considers operational and construction-related air impacts associated with the proposed project. This section analyzes the type and quantity of criteria air pollutants that would be generated by construction and operation of the proposed project. Changes in air quality that can result from new development can affect the character of an area and result in physical impacts to the environment. This section of the Draft EIR focuses on the proposed projectís consistency with local air quality policies/regulations set forth by the South Coast Air Quality Management District (SCAQMD), and the potential impacts on the surrounding community.

3B.2 SETTING

Regional Climate

Air quality is affected by the rate and location of pollutant emissions and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

The City of Los Angeles is located entirely within the South Coast Air Basin (SCAB). The SCAB consists of approximately 6,745 square miles within four counties - San Bernardino, Riverside, Los Angeles, and Orange.

The SCAB encompasses a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or offshore Santa Ana winds.[1]

The vertical dispersion of air pollutants in the SCAB is hampered by the presence of persistent temperature inversions. High-pressure systems, such as the semi-permanent high-pressure zone in which the SCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface. This results in the formation of subsidence inversions. Such inversions restrict the vertical dispersion

[1] South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993.

of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog.

The atmospheric pollution potential of an area is largely dependent on winds, atmospheric stability, solar radiation, and terrain. The combination of low wind speeds and strong inversions produces the greatest concentration of air pollutants. On days without inversions, or on days of winds averaging over 15 mph, smog potential is greatly reduced.[2]

3B.3 APPLICABLE REGULATIONS

Federal Standards

The federal Clean Air Act (CAA) of 1970 is the comprehensive law that regulates air emissions from area, stationary, and mobile sources. The law authorized the United State Environmental Protection Agency (U.S. EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment. The goal of the Act was to set and achieve NAAQS in every state by 1975. The setting of maximum pollutant standards was coupled with directing the states to develop state implementation plans (SIPs) applicable to appropriate industrial sources in the state.

The Act was amended in 1977, primarily to set new goal dates for achieving attainment of NAAQS since many areas of the country had failed to meet the deadlines and was amended again in 1990. The 1990 amendments to the federal CAA in large part were intended to meet unaddressed or insufficiently addressed problems such as acid rain, ground level ozone, stratospheric ozone depletion, and air toxics.

NAAQS have been established for carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter (PM_{10}), and lead (Pb). These contaminants are referred to as criteria pollutants. Table 3B-1 summarizes state and federal air quality standards.

Areas are classified under the federal CAA as either ìattainmentî or ìnon-attainmentî areas for each criteria pollutant based on whether the NAAQS have been achieved or not. The SCAB is designated as a non-attainment area for O_3, CO, and PM_{10}. The SCAB is designated as an attainment area for SO_2 and lead, and a maintenance area for NO_2.

State Standards

In 1967, Californiaís legislature passed the Mulford-Carrel Act, which established the California Air Resources Board (CARB). The CARB set state air quality standards for criteria pollutants. The state standards for these pollutants are more stringent than the corresponding federal standards (see Table 3B-1). As in the federal CAA, the California CAA classifies areas as either

[2] South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993.

TABLE 3B-1: AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard	Federal Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	0.12 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Motor vehicles.
	8 hours	---	0.08 ppm		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9 ppm	9 ppm		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	---	0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.25 ppm	---		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	---	0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	---		
	3 hours	---	0.50 ppm		
	24 hours	0.04 ppm	0.14 ppm		
Suspended Particulate Matter (PM_{10} $PM_{2.5}$)	Annual Geometric Mean	30 µg/m^3 (PM_{10})	---	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	Annual Arithmetic Mean	---	50 µg/m^3 (PM_{10}) 15 µg/m^3 ($PM_{2.5}$)		
	24 hours	50 µg/m^3 (PM_{10})	150 µg/m^3 (PM_{10}) 65 µg/m^3 ($PM_{2.5}$)		
Lead (P_b)	Monthly	1.5 µg/m^3	---	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction (in severe cases).	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	---	1.5 µg/m^3		
Sulfates (SO_4)	24 hours	25 µg/m^3	---	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.

ppm parts per million
µg/m^3 micorgrams per cubic meter
Source: CARB, *Ambient Air Quality Standards*, January 25, 1999.

being in ìattainmentî or ìnon-attainmentî for these criteria pollutants. Areas designated as non-attainment are then given a time frame to achieve attainment.

Local Regulations

The project site is located within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD adopted an Air Quality Management Plan (AQMP) in 1979, which intended to meet federal air quality standards by December 31, 1987. Using better data and modeling tools, the 1982 revision of the AQMP concluded that the basin could not demonstrate attainment by the 1987 deadline required by the federal CAA. Therefore, the 1982 Revision of the AQMP proposed a long-range strategy that could result in attainment in 20 years. In 1987, a federal court ordered the U.S. EPA to disapprove the 1982 AQMP revision because it did not demonstrate attainment of the federal standards by the 1987 deadline.[3]

Currently, the SCAQMD is operating under the 1997 AQMP and the 1999 amendment to the 1997 ozone portion of the AQMP. The 1997 AQMP relies on short-term and intermediate-term attainment measures which were to be adopted by 2000, and long term attainment measures utilizing advances in technology reasonably expected to be available by the year 2010. On January 12, 1999, the U.S. EPA proposed a partial disapproval of the ozone portion of the 1997 AQMP. The AQMD responded with the 1999 Ozone State Implementation Plan revision, which the EPA indicated would be approvable.

SCAQMD Rule 403

During construction, the project would be subject to SCAQMD Rule 403 (Fugitive Dust). SCAQMD Rule 403 does not require a permit for construction activities but rather, sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the SCAB.

The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM_{10} concentration impact at the property line of more than 50 micrograms per cubic meter 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 rule are implemented and appropriately documented.

SCAQMD Rule 403 identifies two sets of specific measures: one for high wind conditions and the other for more normal wind conditions. Both sets of mitigation measures are outlined in Appendix C.

[3] South Coast Air Quality Management District and Southern California Association of Governments, Final 1989 Air Quality Management Plan, March 1989.

Existing Air Quality

The SCAQMD maintains an air quality monitoring station in the City of Los Angeles, near the intersection of North Main Street and Power Street. A five-year summary (1996-2000) of data collected at this station is shown in Table 3B-2 and is compared with the corresponding state ambient air quality standards.

TABLE 3B-2: PROJECT AREA AIR POLLUTANT SUMMARY, 1996-2000[a]

Pollutant	Standard[b]	1996	1997	1998	1999	2000
Ozone (O_3)						
Highest 1-hr average, ppm[c]	0.09	0.14	0.12	0.15	0.13	0.14
Number of standard exceedance[d]		24	6	17	13	8
Carbon Monoxide (CO)						
Highest 1-hr average, ppm[c]	20.0	10.0	9.0	8.0	7.0	7.0
Number of standard exceedance[d]		0	0	0	0	0
Highest 8-hr average, ppm[c]	9.0	8.4	7.9	6.1	6.3	6.0
Number of standard exceedance[d]		0	0	0	0	0
Nitrogen Dioxide (NO_2)						
Highest 1-hr average, ppm[c]	0.25	0.25	0.20	0.17	0.21	0.16
Number of standard exceedance[d]		0	0	0	0	0
Particulate Matter-10 Micron (PM_{10})						
Highest 24-hr average, $\mu g/m^3$ [c]	50	138	102	80	88	80
Number of standard exceedance[d,e]		11	15	10	19	15
Annual Geometric Mean, $\mu g/m^3$ [c]	30	36.6	39.2	34.2	42.1	37.0
Violation		Yes	Yes	Yes	Yes	Yes

NOTE: Underlined values indicate an excess of applicable standard.

a. Data are from the SCAQMD monitoring station located at the intersection of North Main Street and Power Street in the City of Los Angeles.
b. State standard, not to be exceeded.
c. ppm - parts per million; $\mu g/m^3$ - micrograms per cubic meter.
d. Refers to the number of days in a year during which at least one exceedance was recorded.
e. Measured every six days.

Source: SCAQMD, *Air Quality Data Summaries*, 1996-2000.

Ozone (O_3). The SCAB is in non-attainment for both the federal and state ozone standards. Ozone is a secondary pollutant produced through a series of photochemical reactions involving

reactive organic compounds (ROCs) and nitrogen oxides (NO_x). Ozone creation requires ROCs and NO_x to be available for approximately three hours in a stable atmosphere with strong sunlight. Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources generating ROC and NO_x emissions.

The federal and state Clean Air Acts require that management plans be developed for areas designated as non-attainment to establish strategies to achieve compliance. Because Californiaís regulations are more stringent than the federal standard, two ozone plans apply to the project vicinity.

Ozone effects include eye and respiratory irritation, reduction of resistance to lung infection and possible aggravation of pulmonary conditions in persons with lung disease. Ozone is also damaging to vegetation and untreated rubber. The state one-hour ozone standard in the SCAQMD was exceeded 24 days in 1996 and at least six times per year from 1997 through 2000 (see Table 3B-2).

Carbon Monoxide (CO). The SCAB is in non-attainment for both federal and state carbon monoxide standards. Carbon monoxide is a non-reactive pollutant that is a product of incomplete combustion. Ambient carbon monoxide concentrations usually follow the spatial and temporal distributions of vehicular traffic and are also influenced by meteorological factors such as wind speed and atmospheric mixing. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area out to some distance from vehicular sources. The one-hour and eight-hour average CO standards were not exceeded at the Central Los Angeles monitoring station in the fiveñyear period from 1996 to 2000.

Nitrogen Oxides (NO_x). The SCAB is a maintenance area for the federal and state NO_x standards, which means it had once been in non-attainment. There are two oxides of nitrogen which are important in air pollution: nitric oxide (NO) and nitrogen dioxide (NO_2). Nitric oxide and NO_2 are both emitted from motor vehicle engines, power plants, refineries, industrial boilers, aircraft and railroads. NO_2 is primarily formed when NO reacts with atmospheric oxygen. NO_2 gives the air the ìwhiskey brownî color associated with smog. Since NO_x emissions contribute to ozone generation, NO_x emissions are regulated through the O_3 Attainment Plans.

Sulfur Oxides (SO_x). The SCAB is in attainment for the federal and state SO_x standards. SO_x are primarily produced by the burning of high sulfur coal in industrial operations and power plants. Due to the relatively small amount of SO_x in the ambient environment in the SCAB, SO_x will not be analyzed in this report.

Reactive Organic Compounds (ROC). There is currently no ambient air quality standard for ROC**.** ROC are any reactive compounds of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and other exempt compounds. ROC is a precursor of ozone and as such is regulated under the SCAQMD ozone attainment plan. In this analysis, ROC include Volatile Organic Compounds (VOC).

Particulate Matter (PM_{10}). The SCAB is in non-attainment for the federal and state PM_{10} standard. PM_{10} is particulate matter that is smaller than 10 microns in diameter. Particulate matter less than 10 microns in diameter can be inhaled deep into the lungs and cause adverse health effects. PM_{10} in the atmosphere results from many kinds of dust-and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others such as vehicular traffic have a more regional effect.

Particulate matter contributes to pollution in two ways: fugitive dust and exhaust emissions. Fugitive dust is produced from activities that disturb soil such as grading, digging, or just driving on an unpaved road. Particulate matter from exhaust gasses is produced from incomplete combustion, resulting in soot formation. Both forms of particulate matter are accounted for in calculations performed in this analysis.

Toxic Air Contaminants (TACs). TACs are pollutants known or suspected to cause cancer or other serious health effects such as birth defects. TACs may also have significant adverse environmental and ecological effects. Examples of TACs include benzene, diesel particulate, hydrogen sulfide, methylchloride, 1,1,1-trichloroethane, toluene, and metals such as cadmium, mercury, chromium, and lead. Health effects from TACs vary depending on the specific toxic pollutant but may include cancer, immune system damage, as well as neurological, reproductive, developmental, and respiratory problems.

According to the EPA, approximately 50% of the TACs we are exposed to comes from mobile source emissions. EPA and CARB are both concerned over diesel particulate matter emissions. The EPA has published its final rule to control emissions of hazardous air pollutants from mobile sources, in the March 29, 2001 Federal Register. The CARB approved a comprehensive diesel risk reduction plan in September 2000.

Sensitive Receptors

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

Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Sensitive receptors in the immediate vicinity of the project site include multi-family dwellings located north, south, west and east of the project site. Multi-family dwellings are located

immediately west of the project site along South Mariposa Avenue within 25 feet of where demolition and construction activities could occur. In addition, multi-family dwellings are located opposite the project site on South Catalina Street within 100 feet of proposed demolition and construction activities. Other multi-family dwellings are located on surrounding streets in all directions.

3B.4 IMPACTS AND MITIGATION

Methodology

Projected construction-and operational-related air emissions were calculated according to the methodologies set forth in the SCAQMD *CEQA Air Quality Handbook* using EMFAC2002, and EPA's AP-42 compilation of emissions factors, and CARB Emissions Inventory emissions factors. The calculated emissions of the project are compared to thresholds of significance for individual projects using the SCAQMD *CEQA Air Quality Handbook*. The SCAQMD *CEQA Air Quality Handbook* recommends assessing emissions of ROCs as an indicator of O_3.[4]

Criteria for Determining Significance

CEQA allows for the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. The SCAQMD has established the following thresholds of significance for air quality for construction activities and project operation (Table 3B-3):

TABLE 3B-3: SCAQMD PROJECT SIGNIFICANCE CRITERIA

	Construction Phase	**Operational Phase**
Carbon Monoxide (CO)	550 lbs. per day	550 lbs. per day
Reactive Organic Compounds (ROC)	75 lbs. per day	55 lbs. per day
Nitrogen Oxides (NO_x)	100 lbs. per day	55 lbs. per day
Sulfur Oxides (SO_x)	150 lbs. per day	150 lbs. per day
Particulate Matter (PM_{10})	150 lbs. per day	150 lbs. per day

Source: SCAQMD

[4] South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993.

The criteria used to determine the significance of an impact are based on the model initial study checklist contained in Appendix G of the CEQA Guidelines. The proposed project may result in a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality attainment plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or,
- Create objectionable odors affecting a substantial number of people.

Project Impacts

This section estimates air emissions associated with construction and operational activities of the proposed projectís five alternatives.

Alternative 1 would include the maximum adaptive reuse of the existing Ambassador Hotel along with the construction of a new five-story ìWest Towerî, and an additional 3-story elementary school building located along West 8th Street. Alternative 2 would include reuse of the Embassy Ballroom and Cocoanut Grove with substantial new construction to include two 5-story high school and middle school buildings along with a 3-story elementary school building located along West 8th Street. Alternative 3 would retain the Ambassador Hotel ìNorth Towerî along with the Cocoanut Grove. A new 5-story high school and middle school building would be constructed south of the ìNorth Towerî, while a 3-story elementary school would be constructed along West 8th Street. Alternative 4 would include demolition of all on-site structures and all new construction. Alternative 5, like Alternative 1, would include the maximum adaptive reuse of the existing Ambassador Hotel site. In addition, a 5.6-acre parcel along the Wilshire frontage would be made available for potential commercial development. Alternative 5 would not include an elementary school. A more thorough description of the project alternatives can be found in Chapter 2. Project Description (Section 2.4.5).

TABLE 3B-4: AIR IMPACTS SUMMARY

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Impact 3B1	S	S	S	S	S
Impact 3B2	LTS	LTS	LTS	LTS	LTS
Impact 3B3	LTS	LTS	LTS	LTS	LTS
Impact 3F4	LTS	LTS	LTS	LTS	LTS
Impact 3B5	LTS	LTS	LTS	LTS	LTS

LTS = Less Than Significant Impact
LTS/M = Less Than Significant Impact with Mitigation Incorporation
S = Significant Impact

Impact 3B1: The proposed project would generate emissions of air pollutants due to construction.

Construction activities would result in the generation of air pollutants. Construction-related emissions would include: 1) dust generated from demolition, earthmoving, excavation, and other construction activities; 2) hydrocarbon emissions from architectural coatings; 3) on-site exhaust emissions from powered construction equipment; and, 4) on-road motor vehicle emissions associated with construction equipment, worker commute, and debris hauling activities.

The following is a quantitative analysis of construction air impacts for each of the five alternatives described in Chapter 2. Construction information for each alternative is analyzed separately utilizing information provided by Urban Partners/Keller CMS, Inc. (LAUSDís construction consultants) and assumptions based on project experience. Construction emissions worksheets developed by LAUSD and ESA are provided in Appendix C.

Alternatives 1 through 5 would have similar construction air impacts with only minor alterations in the time periods, pieces of equipment, and total dirt and demolition debris. Table 3B-5 shows time periods, equipment lists, and dirt debris removal assumptions utilized in air quality calculations for each alternative. Table 3B-6 shows calculated air emissions associated with Alternatives 1 through 5. Note potential development of the 5.6-acre Wilshire frontage parcel in Alternative 5 is not quantitatively addressed, since potential development is too speculative (see Chapter 2, Section 2.4.5). However, it is safe to say that almost any amount of construction on that site would result in a significant unavoidable adverse air quality impact during construction.

TABLE 3B-5: ASSUMPTIONS USED IN AIR QUALITY ANALYSIS

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
DEMOLITION AND SITE REMEDIATION					
Total time (months)	19.5 months	22.5 months	22.5 months	22.5 months	19.5 months
Time max air emissions (days)	30 days	47 days	42 days	52 days	30 days
Equipment					
Loaders (demolition)	8	10	9	10	9
Loaders (truck loading)	4	4	4	4	4
Water truck (miles/day)	5 miles/day	5 miles/day	5 miles/day	5 miles/day	5 miles/day
Haul truck					
Haul trucks per day	25 per day	25 per day	25 per day	25 per day	25 per day
Maximum trips per day	100	100	100	100	100
Miles per trip	100	100	100	100	100
Daily cubic yards removed per day	1,132	1,132	1,132	1,132	1,132
Total cubic yards removed during demolition	33,943	52,409	46,801	58,215	33,943
Employees per day	50	50	50	50	50
Total employee miles per day Privately Owned Vehicles (POV)	40 miles/day	40 miles/day	40 miles/day	40 miles/day	40 miles/day
EXCAVATION					
Total time (months)	8.5 months	6 months	6 months	6 months	8.5 months
Equipment					
Bulldozer	3	3	3	3	3
Loader (truck loading)	4	4	4	4	4
Water truck (miles/day)	5 miles/day	5 miles/day	5 miles/day	5 miles/day	5 miles/day
Haul truck					
Haul trucks per day	50	50	50	50	50
Maximum trips per day	200	200	200	200	200
Miles per trip	10 miles/trip	10 miles/trip	10 miles/trip	10 miles/trip	10 miles/trip
Total cubic yards removed during excavation	374,683	283,134	271,148	299,781	
Employees per day	60	60	60	60	60
Total employee miles per day POV	20 miles/day	20 miles/day	20 miles/day	20 miles/day	20 miles/day
SITE GRADING AND FILL PLACEMENT					
Total time (weeks)	3	3	3	3	3
Equipment					
Bulldozer	4	4	4	4	4
Scraper	2	2	2	2	2
Water truck (miles/day)	7 miles/day	7 miles/day	7 miles/day	7 miles/day	7 miles/day
Employees per day	30	30	30	30	30
Total employee miles per day POV	40 miles/day	40 miles/day	40 miles/day	40 miles/day	40 miles/day

TABLE 3B-5: ASSUMPTIONS USED IN AIR QUALITY ANALYSIS (Cont.)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
BUILDING CONSTRUCTION					
Total time (months)	27 months	20 months	20 months	19 months	27 months
Total time painting (days)	92 days	92 days	92 days	92 days	92 days
Total square feet to paint	919,588	919,588	919,588	919,588	919,588
Employees per day	100	100	100	100	100

Source: Keller CMS, Inc. LAUSD, ESA.

TABLE 3B-6: ALTERNATIVES 1 THROUGH 5 DAILY CONSTRUCTION EMISSIONS[a]

ALTERNATIVES 1, 2, AND 5

Phase (Duration)	CO	ROC	NO_x	PM_{10}
	lbs/day	lbs/day	lbs/day	lbs/day
Demolition/Site Remediation	316	48	**354**	37
Site Excavation	122	17	**141**	41
Fill Placement	89	10	**140**	115
Construction	69	**93**	24	6
Daily Thresholds for Construction Emissions (lbs/day)	550	75	100	150

ALTERNATIVE 3

Phase (Duration)	CO	ROC	NO_x	PM_{10}
	lbs/day	lbs/day	lbs/day	lbs/day
Demolition and Site Remediation	324	49	**370**	39
Site Excavation	122	17	**141**	41
Fill Placement	89	10	**140**	115
Construction	69	**93**	24	6
Daily Thresholds for Construction Emissions (lbs/day)	550	75	100	150

ALTERNATIVE 4

Phase (Duration)	CO	ROC	NO_x	PM_{10}
	lbs/day	lbs/day	lbs/day	lbs/day
Demolition and Site Remediation	331	51	**386**	40
Site Excavation	122	17	**141**	41
Fill Placement	89	10	**140**	115
Construction	69	**93**	24	6
Daily Thresholds for Construction Emissions (lbs/day)	550	75	100	150

Notes: Bolded values indicate exceedance of the threshold limit. Construction schedule and construction equipment assumptions were provided by the Los Angeles Unified School District (District).

a. Emissions Factors Provided in URBEMIS-7G, CARB Emission Inventory Publication Number MO99_32.3 Table 13 and EPA AP-42 compilation of emissions factors.

Source: ESA and LAUSD, 2003.

Construction activities would vary from day to day. As such, construction air emissions would vary along with the changes in construction activities. Table 3B-6 shows peak estimated air emissions of the four major construction tasks. Mitigation Measures **M-3B.1** and **M-3B.2** and the best available control technology found under SCAQMD Rule 403 would help to reduce air emissions. In addition, all recommendations found in the Removal Action Workplan (RAW) shall be adhered to.[5] Even so, as shown in Table 3B-6, air emissions in all phases of construction would be considered a significant unavoidable impact.

Mitigation Measures:

Implementation of the following mitigation measures would reduce construction-related NO_x emissions:

M-3B.1 *All equipment shall be properly tuned and maintained in accordance with manufacturerís specifications.*

M-3B.2 *General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would be kept with their engines off, when not in use, to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.*

Implementation of the following mitigation measures would reduce construction-related ROC emissions:

M-3B.3 *General contractors shall utilize low VOC paints and architectural coatings.*

Residual Impacts

After implementation of the mitigation measures, impacts to air quality from construction would remain significant and unavoidable.

Impact 3B2: The proposed project would not significantly increase air pollutant emissions due to project operation.

Total operational emissions include mobile-source emissions and stationary-source emissions. Mobile-source emissions include worker and student commute trips, school bus trips, and daily delivery truck trips. Stationary-source emissions (on-site) would be generated as a result of the combustion of natural gas to meet the heating needs of the proposed project. In addition, stationary-source emissions resulting from electrical energy demand for the proposed project would occur off-site at electrical power generating plants assumed to be within the SCAB.

[5] Ninyo & Moore, *Removal Action Work Plan Central Los Angeles Area New Learning Center No. 1*, October 4, 2002.

Power plant emission factors assume continued availability and use of natural gas in power plants.

Operational emissions generated by the proposed project were estimated using operational emissions worksheets (Appendix C) following methodologies set forth in the SCAQMD *CEQA Air Quality Handbook*. Air emissions calculations are based on number of students, number of teachers and administrators, and project square footage. As alternatives 1, 2, 3, and 4 have the same number of students, teachers, and administrators and similar square footage, they are assumed to have similar operational air emissions.

Alternatives 1, 2, 3, and 4

Operational air emissions impacts for Alternatives 1, 2, 3, and 4 assume that 20 percent of the 4,371 students would constitute primary trips to the project site. Primary trips are trips that would not occur if the proposed project were not implemented. It is assumed that the remaining 80 percent of students would either walk, bike or take public transportation to the learning center, or be dropped off. It is further assumed that those students that drive to the learning center would travel five miles to the project site. It is assumed that all 275 faculty and staff would drive to the learning center and that those faculty and staff would commute 20 miles per day. In addition the calculations assume that four buses, used by ìspecial needsî children, would travel 50 miles per day and a delivery truck would travel 30 miles per day to and from the project site. Total operational emissions for Alternatives 1, 2, 3, and 4 are presented in Table 3B-7. Total operational emissions would not exceed SCAQMD thresholds for any of the criteria pollutants.

Alternative 5

Operational air emissions impacts for the schools under Alternative 5 would be less than under the other alternatives because the elementary school would not be built. The emissions calculations assume that 15 percent of the 3,546 students would constitute primary trips to the project site. It is further assumed that those students who drive to the high school would travel five miles to the project site. It also is assumed that all 229 faculty and staff would drive to the schools and that those faculty and staff would commute 20 miles per day. In addition, the calculations assume that three buses, used by ìspecial needsî children, would travel 50 miles per day and a delivery truck would travel 30 miles per day to and from the project site. Total operational emissions for Alternative 5 are presented in Table 3B-7. Total operational emissions would not exceed SCAQMD thresholds for any of the criteria pollutants.

The proposed project is not expected to substantially increase overall air emissions. Providing new local schools closer to the community they serve will reduce overall commute emissions in the region.

The potential commercial development that Alternative 5 would allow for could generate substantial emissions if the full development potential were realized.

TABLE 3B-7: TOTAL OPERATIONAL EMISSIONS[a,b]

Air Pollutant	Total Operational Emissions (lbs/day) **Alternative 1, 2, 3, and 4**	Total Operational Emissions (lbs/day) **Alternative 5**	Thresholds of Significance (lbs/day)	Significant Yes/No
CO	257	187	550	No
ROC	18	13	55	No
NO_x	54	43	55	No
SO_x	4	3	150	No
PM_{10}	19	15	150	No

a. Project-related trips based on school capacity.
b. Assumes 1 delivery trucks traveling 30 miles roundtrip each day and 4 buses traveling 50 miles roundtrip each day.

Source: CARB, EMFAC7G; SCAQMD, *CEQA Air Quality Handbook*, April 1993.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact 3B3: The proposed project would be consistent with the AQMP.

Air emissions in the SCAB are regulated by the SCAQMD. Individual projects are assessed as described above under Impacts 3B1 and 3B2. Pursuant to the Clean Air Act, the SCAQMD is required to reduce emissions of criteria pollutants for which the SCAB is in non-attainment. Strategies to achieve these emissions reductions are developed in the AQMP prepared by SCAQMD for the region. The AQMP outlines regional programs and control measures to reduce future emissions based on population projections. Individual projects and long-term programs within the region are required to be consistent with the AQMP. To demonstrate consistency with the AQMP, the population projections used to assess the need for the project must be approved by the Southern California Association of Governments (SCAG). LAUSD uses SCAG population projections to assess the need for the proposed project. In addition, mitigation measures to reduce air emissions, where possible, have been provided in compliance with CEQA regulations. Therefore, the project is consistent with the AQMP.

The SCAQMDís *Rules and Regulations* (particularly Rule 403, Fugitive Dust), support regional air quality planning efforts. The proposed project would not conflict with or obstruct implementation of the air quality plan.

SCAG has published economic growth projections for the SCAG region. Full development of the 5.6-acres of Wilshire frontage that would be available under Alternative 5 would be consistent with SCAG population and employment projections, and thus consistent with the AQMP.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact 3B4: The proposed project site would not be significantly impacted by surrounding emissions sources.

Public Resources Code Section 21151.8 and Education Code Section 17213 prohibit the approval of an Environmental Impact Report or Negative Declaration for a project involving the purchase of a school site or the construction of a new elementary or secondary school unless the following occur:

- Facilities within a º -mile radius of the proposed site that might reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or wastes are identified and;

- It has been determined that the health risks from the facilities do not and will not constitute an actual or potential endangerment of public health to persons who attend or are employed at the school.

- If impacts are identified, mitigation of all chronic or accidental hazardous air emissions must be made prior to school occupancy and the governing board shall certify a determination of no actual or potential endangerment.

In accordance with the above-referenced requirement, a survey of the community surrounding the proposed Central Los Angeles Area New Learning Center No. 1 was conducted in February 2002. The survey revealed numerous facilities within a º -mile radius that might reasonably be anticipated to emit hazardous air contaminants. The SCAQMD also was contacted to identify facilities within º -mile from the project site that have the potential to emit hazardous or acutely hazardous air emissions. Forty-one such facilities were identified, including several service stations, restaurants, printing operations and dry cleaners. More than 100 additional facilities were identified between º -mile and Ω-mile from the project site. As a result, a Health Risk

Assessment (HRA) was prepared to quantify process emissions and determine their impact on the school-based population.[6]

Currently, the LAUSD utilizes the regulatory threshold of one in one hundred thousand (1.0E-5) as the ì level posing no significant riskî promulgated under the Safe Drinking Water and Toxic Enforcement Act (Proposition 65) when quantifying carcinogenic exposures prepared under the auspices of Public Resources Code Section 21151.8 and Education code Section 17213. This value is also consistent with the SCAQMDís New Source Review of TAC (Rule 1401) for new, relocated or modified permit units and all related permit units located within a radius of 100 meters which are owned and/or operated by a facility constructed with Best Available Control Technology for Toxics (T-BACT).

For noncarcinogenic exposures, the LAUSD employs a simple quantification methodology utilized by both the U.S. EPA and California EPA. As such, a hazard index is developed to quantify noncancer health effects. The hazard index assumes that chronic subthreshold exposures adversely affect a specific organ or organ system (toxicological endpoint). To calculate the hazard index, each chemical dose is divided by the appropriate toxicity value. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds one (i.e., unit), a health hazard is presumed to exist.

Results of the HRA revealed that for carcinogenic exposures, the summation of risk totaled 4.1E-07 (4.1 in ten million) for the high school students, 4.9E-07 (4.9 in ten million) for the middle school students, and 5.5E-06 (5.5 in one million) for administrative staff. According to the HRA, risks fall within acceptable levels. For noncarcinogenic exposures, a hazard index was calculated for each toxicological endpoint. The summation of risks for each target organ totaled less than one.

In acknowledgment of the regulatory guidelines relating to carcinogenic and noncarcinogenic risk, hazardous and/or acutely hazardous air emissions generated from facilities within a º -mile radius are not anticipated to endanger the health of persons who attend or work at the proposed learning center.[7]

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

[6] ENSR, *Health Risk Assessment for Central Los Angeles High School No. 8 and Central Los Angeles Middle School No. 3,* February 2002.

[7] *Ibid.*

Impact 3B5: The proposed project is not anticipated to create objectionable odors affecting a substantial number of people.

SCAQMD lists land uses associated with odor complaints as agriculture, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding plants. The proposed project would construct a new learning center, which are not known to produce adverse odors. Construction activities related to the new learning center also are not anticipated to create objectionable odors. This would be considered a less than significant impact.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact 3B6: The proposed project would contribute air emissions to the region that would add to the cumulative baseline.

The CEQA Guidelines require that projects be evaluated with respect to their contribution to the cumulative baseline. This contribution with respect to air emissions would include both construction and operational emissions.

The SCABís air pollution problem is a consequence of the combination of emissions from the nationís second largest urban area, and adverse meteorological and geographical conditions. The SCAB is in non-attainment for CO, PM_{10}, and ozone. Any addition of these pollutants or their precursors in excess of SCAQMD significance standards could represent a cumulative impact.

Construction of the proposed project would emit criteria air pollutants in excess of SCAQMD standards. However, construction emissions would be short-term. Mitigation measures under Impact 3B1 would reduce these emissions as feasible. The proposed project would relieve overcrowding at existing schools within the SCAB. Forty-one projects located within two miles of the proposed project could contribute to cumulative emissions (See Table 2-3 in Chapter 2). Cumulative construction impacts based on the proposed projectís concurrent construction with other projects would be considered a significant impact.

Operation of the proposed project will not emit criteria pollutants in excess of SCAQMD standards. The proposed project will not increase operational trips within the SCAB. The proposed project will re-route trips from their current schools to the new learning center, and may decrease regional emissions by allowing students that are currently bussed to distant schools to attend school in their own community, thereby reducing diesel emissions. Therefore, the operational emissions would not contribute considerably to the cumulative baseline with respect to air quality.

Full development of the 5.6-acres of Wilshire frontage that would be available under Alternative 5 could emit significant amounts of criteria pollutants. Since potential development is too speculative, it is not possible to precisely assess cumulative impacts at this time (see Chapter 2, Section 2.4.5).

Mitigation Measures

No mitigation is available.

Residual Impacts

Construction cumulative emissions would be significant and unavoidable. Operational cumulative emissions would be less than significant.