4.2 AIR QUALITY

This section analyzes the temporary and long-term impacts to local and regional air quality resulting from onsite development.

4.2.1 Setting

a. Climate and Meteorology. The City of Los Angeles is within the South Coast Air Basin (SCAB), which is generally characterized by sparse winter rainfall and hot summers tempered by cool ocean breezes. A temperature inversion, a warm layer of air that traps the cool marine air layer underneath it and prevents vertical mixing, is the primary weather feature that allows contaminants to accumulate in the SCAB. The mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. Santa Ana winds are strong northerly or northeasterly winds that originate from the desert of the Great Basin and predominantly occur from September through March. Usually warm, dry, and full of dust, these winds are particularly strong in passes and at the mouths of canyons. Sustained winds of 60 miles per hour, with higher gusts, are common for these conditions. On average, Santa Ana wind conditions occur five to ten times per year, with each event lasting up to a few days. The climate of the area is not unique, but the high concentration of mobile and stationary sources of air contaminants in the western portion, in addition to the mountains that surround the perimeter of the Basin contribute to poor air quality in the region.

Temperature affects the air quality of the region in several ways. Local winds are the result of temperature differences between the land and ocean. During the day, the land heats up, causing warm air to rise, and pulling cool ocean air inland. This tends to keep areas near the coast cooler than farther inland. This is known as the sea breeze effect. During the night, the land cools and becomes cooler than the ocean surface, and the effect is reversed, with winds tending to blow out to sea. This is known as a land breeze.

Temperature also has a major effect on vertical mixing height and affects chemical and photochemical reaction times. The annual average temperatures vary modestly throughout the Basin, averaging 75 degrees Fahrenheit, with cooler average temperatures near the coast and higher values inland (Western Regional Climate Center, 2003). The coastal areas show little variation in temperature on a year-round basis due to the moderating effect of the marine influence. On average, August is the warmest month while January is the coolest month. Most of the annual rainfall in the Basin falls between November and April. Annual average rainfall averages around 14 inches in downtown Los Angeles.

Wind flow patterns play an important role in the transport of air pollutants in the Basin. The winds flow from offshore and blow eastward during the daytime hours. In summer, the sea breeze starts in mid-morning, peaks at 10-15 miles per hour and subsides after sundown. There is a calm period until about midnight. At that time, the land breeze begins from the northwest, typically becoming calm again at about sunrise. In winter, the same general wind flow patterns exist except that summer wind speeds average slightly higher than winter wind speeds. This pattern of reversing day/night circulations and low wind speeds is another factor that allows pollutants to accumulate in the Basin.

b. Air Pollution Regulation. Federal and state standards have been established for six criteria pollutants, including ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulates less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$), and lead (Pb). California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 4.2-1 lists the current federal and state standards for criteria pollutants.

Table 4.2-1
Current Federal and State Ambient Air Quality Standards

Pollutant	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg)	0.18 ppm (1-hr avg)
Sulfur Dioxide	0.03 ppm (annual avg) 0.14 ppm (24-hr avg) 0.5 ppm (3-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	1.5 $\mu g/m^3$ (annual avg)	1.5 $\mu g/m^3$ (30-day avg)
Particulate Matter (PM_{10})	150 $\mu g/m^3$ (24-hr avg)	20 $\mu g/m^3$ (annual avg) 50 $\mu g/m^3$ (24-hr avg)
Particulate Matter ($PM_{2.5}$)	15 $\mu g/m^3$ (annual avg) 35 $\mu g/m^3$ (24-hr avg)	12 $\mu g/m^3$ (annual avg)

ppm= parts per million
$\mu g/m^3$ = micrograms per cubic meter
Source: California Air Resources Board, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, June 26, 2008.

The California Clean Air Act of 1988, California Health and Safety Code Section 39607 requires air pollution control districts and air quality management districts to develop air quality management plans for meeting state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide. The California Air Resources Board (CARB) is responsible for developing a plan for meeting State PM Standards.

The local air quality management agency, the South Coast Air Quality Management District (SCAQMD), has the primary air quality permit authority throughout the SCAB. Permit authority is derived from a combination of State and Federal legislation and can be categorized into construction or installation authorizations for individual pieces of equipment and permits for continued operation of equipment facilities. The SCAQMD is required to monitor air pollutant levels to assure that the air quality standards are met and, in the event they are not, to develop strategies to meet these standards.

Depending on whether the standards are met or exceeded, the local air basin is classified as being in "attainment" or "non-attainment." The SCAB, in which the project site is located, is a non-attainment area for both the federal and state standards for ozone and particulate matter. The SCAB is classified as an attainment area for the state and federal standard of carbon monoxide. The SCAB is in attainment of the state and federal standards for nitrogen dioxide, and the state standards of carbon monoxide. The SCAB exceeded the federal CO standard once in 2002. Added to a perfect record in 2001 (no exceedances), this fulfills the compliance requirement of no more than one day exceeding the standard in two consecutive years.

c. Criteria Air Pollutants. The general characteristics of ozone, carbon monoxide, nitrogen dioxide, and suspended particulates are described below.

Ozone. Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_x) and reactive organic gases (ROG). Nitrogen oxides are formed during the combustion of fuels, while reactive organic gases are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it mostly occurs in concentrations considered serious between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, persons with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide. Carbon monoxide (CO) is a local pollutant that is found in high concentrations only near the source. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Nitrogen Dioxide. Nitrogen dioxide (NO_2) is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. Nitrogen dioxide is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM_{10} and acid rain.

Suspended Particulates. PM_{10} is particulate matter measuring no more than 10 microns in diameter, while $PM_{2.5}$ is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates and sulfates. Both PM_{10} and $PM_{2.5}$ are by-products of fuel combustion and wind erosion of soil and unpaved roads, and are directly emitted into the atmosphere through these processes. Suspended particulates are also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and fine particulates ($PM_{2.5}$) can be very different. The small particulates generally

come from windblown dust and dust kicked up from mobile sources. The fine particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. Fine particulate matter is more likely to penetrate deeply into the lungs and poses a health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

CARB currently recommends that local agencies avoid siting new sensitive land uses, including residences, within 500 feet of a freeway (CARB, *Air Quality and Land Use Handbook*, April 2005). The recommendation is based on research showing that concentrations of traffic related pollutants decline with distance from major roads, primarily in the first 300 - 500 feet. These recommendations are strictly advisory, and local agencies are expected to balance them with other considerations, which presumably include the land use context and local land use priorities, including housing needs. The handbook also notes that the relative exposure and health risk drops substantially within the first 300 feet, and that the impact of traffic emissions is on a gradient that at some point becomes indistinguishable from the regional air pollution problem.

The potential magnitude of air quality impacts from a given project can be assessed in terms of the emissions expected from the project and also in terms of the dispersion and resulting concentrations of pollutants emitted, typically at receptors located in the immediate vicinity of project activities. Given the nature of the SCAB, pollutants emitted within the entire basin tend to contribute to overall basin air quality.

d. Current Air Quality. Data on existing air quality in the SCAB are available from several sources, including the web site of the United States Environmental Protection Agency (USEPA) (http://www.epa.gov/air/data/), referred to as the EPA AirData site. This site contains information from designated monitor sites nationwide and can be used to summarize recent air quality readings in comparison to national ambient air quality standards for each criteria pollutant.

Depending on the pollutant of interest, the EPA AirData site contains data for up to 16 monitoring locations in Los Angeles County. The AirData-listed monitor site nearest onsite development is 1630 North Main Street in Los Angeles, approximately 1.5 miles northeast of the project site. The most recent year monitor data is available from the AirData site for each of the criteria pollutants listed above.

Table 4.2-2 indicates the number of days each of the standards has been exceeded at the station closest to the project site. As shown, the ozone concentration exceeded state standard eight times in 2006, three times in 2007, and three times in 2008. The number of days that the PM_{10} concentration exceeded state standards was three in 2006 and five in 2007. The number of exceedances then dropped to three in 2008. The $PM_{2.5}$ concentration exceeded federal standards on 11 days in 2006, 20 days in 2007, and 4 days in 2008. No exceedances of either the state or federal standards for carbon monoxide or nitrogen dioxide occurred at the North Main Street monitoring station in 2006, 2007, or 2008.

Table 4.2-2
Ambient Air Quality Data

Pollutant	2006	2007	2008
Ozone, ppm - Worst Hour[a]	0.108	0.115	0.109
Number of days of State exceedances (>0.09 ppm)	8	3	3
Number of days of Federal exceedances (>0.12 ppm)	0	0	0
Carbon Monoxide, ppm - Worst 8 Hours[a]	2.68	2.15	1.96
Number of days of State/Federal exceedances (>9.0 ppm)	0	0	0
Nitrogen Dioxide, ppm - Worst Hour[a]	0.111	0.104	0.122
Number of days of State exceedances (>0.25 ppm)	0	0	0
Particulate Matter <10 microns, $\mu g/m^3$ Worst 24 Hours[b]	59.0	78.0	66.0
Number of samples of State exceedances (>50 $\mu g/m^3$)	3	5	3
Number of samples of Federal exceedances (>150 $\mu g/m^3$)	0	0	0
Particulate Matter <2.5 microns, $\mu g/m^3$ Worst 24 Hours[b]	56.2	64.1	43.7
Number of samples of Federal exceedances (>35 $\mu g/m^3$)	11	20	4

[a] *Los Angeles-North Main Street Monitoring Station*
Source: CARB, 2006, 2007, & 2008 Annual Air Quality Data Summaries available at http://www.arb.ca.gov

e. Air Quality Management. Under state law, the SCAQMD is required to prepare a plan for air quality improvement for pollutants for which the District is in non-compliance. SCAQMD updates the plan, known as the Air Quality Management Plan (AQMP), every three years. Each iteration of the plan is an update of the previous plan and has a 20-year horizon. The plan was last updated in 2007. The AQMP is incorporated by reference and available to download at http://www.aqmd.gov/aqmp/07aqmp/index.html.

The 2007 AQMP was prepared to comply with the federal and State Clean Air Acts and amendments, to accommodate growth, to reduce the high levels of pollutants in the Basin, to meet federal and State air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The 2007 AQMP identifies the control measures that will be implemented over a 20-year horizon to reduce major sources of pollutants. Implementation of control measures established in the previous AQMPs has substantially decreased the population's exposure to unhealthful levels of pollutants, even while substantial population growth has occurred within the Basin. As discussed on pages 2 through 6 of the 2007 AQMP, the ambient pollutant concentrations monitored in the Basin have decreased substantially since 1985.

The future air quality levels projected in the 2007 AQMP are based on several assumptions. For example, the SCAQMD assumes that general new development within the Basin will occur in accordance with population growth and transportation projections identified by SCAG in its most current version of the Regional Comprehensive Plan and Guide (RCPG), which was adopted in March 1996. The 2007 AQMP also assumes that general development projects will include feasible strategies (i.e., mitigation measures) to reduce emissions generated during construction and operation in accordance with SCAQMD and local jurisdiction regulations, which are designed to address air quality impacts and pollution control measures.

The 2007 AQMP incorporates new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling. General development projects will be affected in the form of any applicable rules and regulations – if any – that are adopted as a result of the 2007 AQMP.

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate the air quality issues associated with plans and new development projects within the Basin. Instead, the SCAQMD has prepared the *CEQA Air Quality Handbook* to assist Lead Agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of projects and plans proposed in the Basin.

City of Los Angeles. Local jurisdictions, such as the City of Los Angeles, have the authority and responsibility to reduce air pollution through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals.

The Air Quality Element of the City of Los Angeles General Plan, adopted on November 24, 1992, sets forth the goals, objectives and policies that will guide the City in the implementation of its air quality improvement programs and strategies. The Air Quality Element acknowledges that numerous efforts are underway at the regional, county and city levels addressing clean air concerns and that coordination of these various efforts and the involvement of the area's residents are crucial to the achievement of State and national air quality standards.

The Air Quality Element acknowledges the interrelationships among transportation and land use planning in meeting the City's mobility and clean air goals. According to the Element, mutually reinforcing strategies need to be developed to reduce the use of single occupant vehicles and reduce vehicle trips and vehicle miles traveled.

The Air Quality Element establishes six goals:

- *Good air quality in an environment of continued population growth and healthy economic structure;*
- *Less reliance on single-occupant vehicles with fewer commute and non-work trips;*
- *Efficient management of transportation facilities and system infrastructure using cost-effective system management and innovative demand-management techniques;*

- *Minimal impacts of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation and air quality;*
- *Energy efficiency through land use and transportation planning, the use of renewable resources and less-polluting fuels and the implementation of conservation measures including passive measures such as site orientation and tree planting; and*
- *Citizen awareness of the linkages between personal behavior and air pollution and participation in efforts to reduce air pollution.*

In accordance with CEQA requirements, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation. The City utilizes the SCAQMD's *CEQA Air Quality Handbook* as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The City of Los Angeles has begun to address the issue of global climate change by publishing *Green LA, An Action Plan* to *Lead the Nation in Fighting Global Warming* (LA Green Plan). This document outlines the goals and actions the City has established to reduce the generation and emission of GHGs from both public and private activities. According to the LA Green Plan, the City of Los Angeles is committed to the goal of reducing emissions of CO_2 to 35 percent below 1990 levels. To achieve this, the City will:

- *Increase the generation of renewable energy;*
- *Improve energy conservation and efficiency; and*
- *Change transportation and land use patterns to reduce dependence on automobiles.*

City of Los Angeles Green Building Ordinance. On April 22, 2008 the Los Angeles City Council approved Ordinance No. 179,820 (the Green Building Ordinance). The goal of the Green Building Ordinance is to reduce the use of natural resources, create healthier living environments and minimize the negative impacts of development on local, regional and global ecosystems. To achieve these goals, it must be demonstrated that certain projects in the City meet the intent of the criteria for certification at the LEED certified level. The ordinance applies to the following categories of projects in the City:

- *A new non-residential building or structure of 50,000 gross square feet of more of floor area; or*
- *A new mixed use or residential building of 50,000 gross square feet or more of floor area in excess of six stories; or*
- *A new mixed use or residential building of six or fewer stories consisting of at least 50 dwelling units in a building, which has at least 50,000 gross square feet of floor area, and in which at least 80 percent of the building's floor area is dedicated to residential uses; or*
- *The alteration or rehabilitation of 50,000 gross square feet or more of floor area in an existing non-residential building for which construction costs exceed a valuation of 50 percent of the replacement cost of the existing building; or*

- *The alteration of at least 50 dwelling units in an existing mixed use or residential building, which has at least 50,000 gross square feet of floor area, for which construction costs exceed a valuation of 50 percent of the replacement cost of the existing building.*

Unless these projects have been reviewed and the plans are stamped approved by the Director for LEED compliance, no building permits will be issued to these projects under the Ordinance. The Ordinance contains exceptions for the following projects:

- *If the Department of City Planning finds that full LEED compliance would require alterations that conflict with the Secretary of the Interior's Standards for the Treatment of Historic Properties. In those cases, a LEED-AP, which is a person who has been designated a LEED Accredited Professional by the Green Building Certification Institute (GBCI), shall assert in writing that the project has incorporated all other reasonable measures to achieve LEED compliance, while avoiding adverse impacts to the Historic Resource's character-defining features.*
- *Any project where plans were accepted by the Department of Building and Safety for plan check and the appropriate fee is paid prior to November 1, 2008, provided no changes were made to the project that would increase the floor area by more than five percent. This exception shall no longer be valid if construction is not commenced within one year of the date of issuance of the permit.*
- *Any entitlement application for a project filed and deemed complete with the exception of CEQA review prior to November 1, 2008, provided no changes are made to the application that would increase the floor area by more than 5%.*
- *Any residential or mixed use project of six or fewer stories where plans were accepted by the Department of Building and Safety for plan check and the appropriate fee is paid prior to May 1, 2009, provided no changes were made to the project which increase the floor area by more than 5%. This exception shall no longer be valid if construction is not commenced within one year of the date of issuance of the permit.*
- *Any entitlement application for a residential or mixed use project of six or fewer stories filed and deemed complete with the exception of CEQA review prior to May 1, 2009, provided no changes are made to the application that would increase the floor area by more than 5%.*

f. Sensitive Receptors in the Project Area. Certain population groups are more sensitive to air pollution than others. Sensitive receptors include children, the elderly, and acutely ill and chronically ill persons, especially those with cardio-respiratory diseases. Sensitive land uses would include those locations where such individuals are concentrated, such as hospitals, schools, residences, and parks with active recreational uses. The nearest sensitive receptors in the vicinity of the project site include multi-family residential uses approximately 75 feet south of the project site along the south side of 1st Street, the Veterans' Affairs Hospital approximately 150 feet northwest of the site, and the Nishi Hongwanji Buddhist Temple approximately 300 feet east of the site (as shown on Figure 2-4 in Section 2.0, *Project Description*).

4.2.2 Impact Analysis

a. Methodology and Significance Thresholds. This air quality analysis conforms to the methodologies recommended in the SCAQMD's *CEQA Air Quality Handbook* (1993). The handbook includes thresholds for emissions associated with both construction and operation of proposed projects.

The regional construction emissions associated with onsite development were calculated using the URBEMIS 2007 version 9.2.4 computer model developed for the CARB by estimating the types and number of pieces of equipment that would be used to demolish the existing surface parking lot and office building, grade and excavate the project site to accommodate subterranean parking, construct onsite development, and plant new landscaping within the project site. These construction emissions are analyzed using the regional thresholds established by the SCAQMD and published in the *CEQA Air Quality Handbook*. The construction activities associated with onsite development would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes excavators, graders, dump trucks, and loaders. Some of this equipment would be used during demolition and grading activities as well as when structures are constructed. Emission sources during construction also include export truck trips off-site to remove debris and delivery truck trips during the demolition phase. It is assumed that all of the construction equipment used would be diesel-powered.

Operational emissions associated with onsite development were estimated using the URBEMIS 2007 version 9.2.4 computer model developed for the CARB and the information provided in the traffic study prepared for onsite development. Operational emissions would be comprised of mobile source emissions and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of onsite development. Area source emissions are generated by natural gas consumption for space and water heating, and landscape maintenance equipment. To determine whether a regional air quality impact would occur, the increase in emissions would be compared with the SCAQMD's recommended regional thresholds for operational emissions.

Regional Thresholds. To determine whether a proposed project would have a significant impact to air quality, Appendix G of the *CEQA Guidelines* questions whether a project would:

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

The SCAQMD has developed specific numeric thresholds that apply to projects within the SCAB. The SCAQMD currently recommends that impacts associated with projects with construction-related mass daily emissions that exceed any of the following emissions thresholds should be considered significant:

- *75 pounds per day of ROG*
- *100 pounds per day of NO_x*
- *550 pounds per day of CO*
- *150 pounds per day of SO_x*
- *150 pounds per day of PM_{10}*
- *55 pounds per day of $PM_{2.5}$*

Table 4.2-3 on the following page lists the operational significance thresholds recommended by the SCAQMD. The SCAQMD also recommends that any operational emissions from individual projects that exceed these thresholds be considered cumulatively considerable. These thresholds apply to individual development projects only; they do not apply to the combined emissions generated by a set of cumulative development projects.

The *City of Los Angeles CEQA Thresholds Guide* (page B.2-5) states that a project would normally have a significant impact on air quality from project operations if any of the following would occur:

- *Operational emissions exceed 10 tons per year of volatile organic gases or any of the SCAQMD regional thresholds shown in Table 4.2-3.*
- *Either of the following conditions would occur at an intersection or roadway or roadway within one-quarter mile of a sensitive receptor:*
  - *The project causes or contributes to an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9 parts per million (ppm), respectively; or*
  - *The incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard, or 0.45 ppm for the 8-hour CO standard.*
- *The project creates an objectionable odor at the nearest sensitive receptor.*

As discussed in the Initial Study prepared for onsite development, onsite development would not generate objectionable odors that would affect a substantial number of people. None of the proposed uses are included on Figure 5-5 *Land Uses Associated with Odor Complaints* of the 1993 SCAQMD CEQA Air Quality Handbook. Therefore, it is unlikely that the proposed project would generate objectionable odors affecting a substantial number of people. Therefore, the threshold related to objectionable odors is not discussed below.

Localized Significance Thresholds. In addition to the above thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the *CEQA Air Quality Handbook*. LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), project size,

Table 4.2-3
SCAQMD Operational Air Quality Significance Thresholds

Mass Daily Thresholds	
Pollutant	**Operation Thresholds**
NO_x	55 lbs/day
ROC	55 lbs/day
PM_{10}	150 lbs/day
$PM_{2.5}$	55 lbs/day
SO_x	150 lbs/day
CO	550 lbs/day
Lead	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds	
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment) Hazard Index ≥ 3.0 (facility-wide)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
Ambient Air Quality for Criteria Pollutants [a]	
NO_2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state) 0.053 ppm (federal)
PM_{10} 24-hour average annual geometric average annual arithmetic mean	10.4 $\mu g/m^3$ (recommended for construction) [b] & 2.5 $\mu g/m^3$ (operation) 1.0 $\mu g/m^3$ 20 $\mu g/m^3$
PM2.5 24-hour average	10.4 $\mu g/m^3$ (recommended for construction) [b] & 2.5 $\mu g/m^3$ (operation)
Sulfate 24-hour average	1 ug/m^3
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)

Source: SCAQMD, CEQA Handbook (SCAQMD, 1993), http://www.aqmd.gov/ceqa/hdbk.html accessed March 12, 2007
[a] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, unless otherwise stated.
[b] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: Lbs/day = pounds per day; ppm = parts per million; ug/m^3 = microgram per cubic meter; ≥ greater than or equal to

distance to the sensitive receptor, etc. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation. LSTs have been developed for NO_x, CO, PM_{10} and $PM_{2.5}$. LSTs are not applicable to mobile sources such as cars on a roadway (Final Localized Significance Threshold Methodology, SCAQMD, June 2003). As such, LSTs for operational emissions do not apply to onsite development as the majority of emissions would be generated by cars on the roadways. LSTs for construction are shown in Table 4.2-4.

Table 4.2-4
SCAQMD LSTs for Construction

Pollutant	Allowable emissions as a function of receptor distance in feet from a five acre site (lbs/day)				
	82	**164**	**328**	**656**	**1,640**
Gradual conversion of NO_x to NO_2	221	212	226	250	312
CO	1,531	1,985	2,762	4,383	10,467
PM_{10}	13	40	55	84	174
$PM_{2.5}$	6	8	14	29	95

Source: http://www.aqmd.gov/CEQA/handbook/LST/appC.pdf, accessed online October 2009.

LSTs have been developed for emissions within areas up to five acres in size, with air pollutant modeling recommended for activity within larger areas. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project site measures approximately 5.66 acres and is located in Source Receptor Area 2 (SRA-2). For the purposes of this EIR, it is assumed that construction activity at the project site would generally occur within a 5-acre area at any one time. According to the SCAQMD's publication, *Final Localized Significant (LST) Thresholds Methodology*, the use of LSTs is voluntary, to be implemented at the discretion of local agencies.

The SCAQMD has developed LST spreadsheet models as a way to estimate emissions for their established LST thresholds. However, the LST lookup tables were not used to estimate construction emissions resulting from onsite development because these tables are not appropriate in instances where substantial subterranean work is required (Steve Smith, SCAQMD, 2009). Therefore, in order to model the localized PM_{10} and $PM_{2.5}$ emissions for the site grading phase of the project, SCAQMD AP 42-methodologies were utilized. The AP-42 methodology is based on emission factors associated with construction of onsite development.

An AP-42 emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. These factors are usually expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (e. g., kilograms of particulate emitted per megagram of coal burned). Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors are simply averages

of all available data of acceptable quality, and are generally assumed to be representative of long-term averages for all facilities in the source category (i. e., a population average) (U.S. Environmental Protection Agency, 1995).

Particulate matter emissions associated with construction of onsite development were derived from factors such as the length of haul roads during construction and emission factors (discussed above) to determine particulate matter emissions during construction of onsite development.

URBEMIS modeling was utilized as part of the AP-42 methodology for PM_{10} and $PM_{2.5}$. Spreadsheets reflecting these methodologies can be found in Appendix C.

b. Project Impacts and Mitigation Measures.

Impact AQ-1 Onsite construction activity would generate air pollutant emissions that exceed SCAQMD construction thresholds for ROC, NO_x, PM_{10} and $PM_{2.5}$. Construction-related emissions would also exceed SCAQMD LSTs for PM_{10} and $PM_{2.5}$. Although proposed mitigation measures would reduce emissions to the degree feasible, temporary construction impacts would be *significant and unavoidable*.

Construction emissions estimates were generated for onsite development using URBEMIS software and spreadsheets based on AP 42 methodologies. The model considers five construction phases: 1) demolition; 2) site grading; 3) paving; 4) building construction; and 5) architectural coating. URBEMIS emission estimates were used for all of the construction phase and pollutants except for PM_{10} and $PM_{2.5}$, which used the AP 42 methodologies.

For the purposes of this analysis it was assumed that 25,000 cubic feet of building area would be demolished daily, including the existing office building and surface parking lot. URBEMIS default equipment and scheduling for construction phases were used. Construction equipment would include tractors, loaders, backhoes, dozers, and saws (See Appendix C for the construction equipment mixes).

Table 4.2-5 shows estimated daily emissions during demolition (Phase I), grading (Phase II), paving (Phase III), building (Phase IV) and architectural coating (Phase V). Emissions of CO would be below the SCAQMD construction threshold of 550 pounds per day. Emissions of ROG, NOx, $PM_{10,}$ and $PM_{2.5}$ would be above SCAQMD construction thresholds. ROG would be emitted primarily during the architectural coating phase, which would last approximately two months. NOx would be emitted primarily during the demolition phase, which would last approximately two months. Particulate matter emissions would be emitted primarily during the demolition phase and the mass site grading phase, which would last approximately one year. Therefore, impacts relating to temporary construction-related emissions would be potentially significant.

The LST thresholds only apply to those emissions generated by onsite construction activities, such as emissions from onsite grading, and do not apply to offsite mobile emissions. The LST thresholds for sensitive receptors 82 feet (25 meters) from the project site were used to illustrate

the closest receptors, which are multiple-family residences located 75 feet south of the project site.

Table 4.2-5
Estimated Unmitigated Construction Maximum Daily Air Pollutant Emissions (lbs/day) [a]

	Emissions (lbs/day)				
	ROG	**NOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Phase I Demolition	12	146	61	138	33
Phase II Mass Site Grading [c]	3	25	14	2,370	496
Phase III Paving	2	11	9	1	1
Phase IV Building Construction	5	30	100	2	2
Phase V Architectural Coating	481	1	7	0	0
Maximum lbs/day [e]	**481**	**146**	**100**	**991[b]**	**208[b]**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Local Significance Thresholds [f] (LSTs)	*n/a*	*221*	*1,531*	*13*	*6*
Threshold Exceeded?	**n/a**	**No**	**No**	**Yes**	**Yes**

Source: SCAQMD LST Spreadsheet for a 5-acre site and URBEMIS 2007, Version 9.2.4; see Appendix C for calculations.
[b] PM emissions were estimated using spreadsheets based on AP 42 methodologies, located in Appendix C.
[c] Totals include emissions associated with site grading, offsite earth export, and worker trips.
[e] Maximum daily emissions based on highest in either construction year 1, 2 or 3.
[f] LSTs are for a five-acre project in SRA-2 within a distance of 82 feet from the site boundary

As indicated in Table 4.2-5, emissions generated by temporary construction activities would be below LST thresholds for NO_x and CO during all construction phases. Emissions generated by temporary construction activities would be above LST thresholds for PM_{10} and $PM_{2.5}$. Therefore, impacts would be significant. Emissions of particulate matter would occur primarily during demolition and mass site grading activities.

Mitigation Measures. Standard and additional mitigation measures would be required to reduce potential air quality impacts from temporary construction activity. Mitigation measures are identified below.

Standard Mitigation/Regulations. The following standard mitigation measures would apply to onsite development.

AQ-1(a) **Fugitive Dust.** All construction shall comply with the requirements of SCAQMD Rule 403, Fugitive Dust, which requires the implementation of Reasonably Available Control Measures (RACM) for all fugitive dust sources, and the Air Quality Management Plan (AQMP), which identifies Best Available Control Measures (BACM) and Best Available Control Technologies (BACT) for area sources and point sources, respectively.

AQ-1(b) **Staging Area**. Construction contractors shall establish an onsite construction equipment staging area and construction worker parking lot, located on either paved surfaces or unpaved surfaces subjected to soil stabilization treatments, as close as possible to a public highway. Control access to public roadways by limiting curb cuts/driveways to minimize project construction impacts upon roadway traffic operations.

AQ-1(c) **Non-Vehicular Equipment Engines**. Construction contractors shall properly maintain non-vehicular equipment engines to minimize the volume of exhaust emissions.

AQ-1(d) **Electricity**. Construction contractors shall use electricity from power poles, rather than temporary diesel or gasoline powered generators.

AQ-1(e) **Alternative Fuel Sources**. Construction contractors shall use onsite mobile equipment powered by alternative fuel sources (i.e., methanol, natural gas, propane or butane).

AQ-1(f) **Inspection of Equipment**. Construction contractors shall inspect construction equipment prior to leaving the site and wash off loose dirt with wheel washers, as necessary

AQ-1(g) **Ridesharing/Shuttle**. Construction contractors shall provide ridesharing or shuttle service for construction workers.

Additional Measures. The following additional mitigation measures would be required.

AQ-1(h) **Construction-Related Equipment.** The site developer shall require by contract specifications that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for an extended period of time (i.e., 5 minutes or longer).

AQ-1(i) **Diesel-Powered Equipment**. Construction contractors shall use late model heavy-duty diesel-powered equipment to the extent that it is readily available in the South Coast Air Basin (meaning that it does not have to be imported from another air basin and that the procurement of the equipment would not cause a delay in construction activities of more than two weeks).

AQ-1(j) **Diesel Oxidation Catalysts.** The site developer shall require by contract specifications that all heavy-duty diesel-powered equipment operating and refueling at the project site would be equipped with diesel oxidation catalysts to the extent that it is readily available and cost effective in the South Coast Air Basin (meaning that it does not have to be imported from another air basin, that the procurement of the equipment would not cause a delay in construction activities of more than two weeks, that the cost of the equipment use is not more than 20 percent greater than the cost of standard equipment). (This measure does not apply to diesel-powered trucks traveling to and from the Site).

AQ-1(k) **Idling Time.** Construction contractors shall limit truck and equipment idling time to five minutes or less.

AQ-1(l) **Particulate Matter Reduction**. Soil stabilizers shall be applied to inactive areas on the project site, ground cover shall be replaced quickly in disturbed areas, exposed surfaces shall be watered three times daily, unpaved roads shall have 15 mph speed limits, haul road dust shall be managed appropriately, and all onsite diesel-fueled equipment shall have Diesel Particulate Filters (DPF) installed.

AQ-1(m) **Construction Sign Posting.** The project applicant shall be required to post a sign informing all workers and subcontractors of the time restrictions for construction activities and hours when construction activities are permitted. The sign shall also include the City telephone numbers where violations can be reported and complaints associated with construction noise can be submitted.

AQ-1(n) **Coatings.** The project shall use pre-fabricated exterior panels or low-to-no VOC architectural coatings.

Significance After Mitigation. Table 4.2-6 shows estimated emissions following implementation of the above mitigation measures. The proposed mitigation measures would reduce temporary construction emissions for the grading and building construction phases. Maximum daily air pollutant emissions of PM_{10} and $PM_{2.5}$ would be mitigated to below SCAQMD regional thresholds. However, maximum daily air pollutant emissions of ROG and NOx would not be reduced to below SCAQMD regional thresholds. In addition, particulate matter emissions would continue to exceed LSTs after mitigation. Therefore, temporary construction impacts would remain significant and unavoidable.

Table 4.2-6
Estimated Mitigated Construction Maximum Daily Air Pollutant Emissions (lbs/day) [a]

	Emissions (lbs/day)				
	ROG	**NOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Phase I Demolition	12	146	61	138	33
Phase II Mass Site Grading [c]	3	25	14	144	31
Phase III Paving	2	11	9	1	1
Phase IV Building Construction	5	30	100	2	1
Phase V Architectural Coating	481	1	7	0	0
Maximum lbs/day [e]	**481**	**146**	**100**	**144**	**33**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	**No**	**No**	**No**
Local Significant Thresholds [f] (LSTs)	*n/a*	*221*	*1,531*	*13*	*6*
Threshold Exceeded?	**n/a**	**No**	**No**	**Yes**	**Yes**

Source: SCAQMD LST Spreadsheet for a 5-acre site and URBEMIS 2007, Version 9.2.4; see Appendix C for calculations.
[c] Totals include emissions associated with site grading, offsite earth export, and worker trips.
[e] Maximum daily emissions based on highest in either construction year 1, 2 or 3.
[f] LSTs are for a five acre project in SRA-2 within a distance of 82 feet from the site boundary

Impact AQ-2 **Operation of onsite development would generate air pollutant emissions that would exceed SCAQMD operational significance thresholds for ROG, NO_X and CO. Although proposed mitigation measures would reduce emissions to the degree feasible, ROG and NO_x emissions cannot be reduced to below significance thresholds. Therefore, operational air quality impacts would be *significant and unavoidable*.**

Long-term emissions associated with onsite development, as presented in Table 4.2-7, include those emissions associated with vehicle trips (mobile emissions) and the use of natural gas and landscaping maintenance equipment (area emissions) associated with onsite development. The URBEMIS 2007 v.9.2.4 model was used to calculate emissions associated with site development based on the proposed land uses and the number of trips generated by the new development. Trip generation rates were taken from the EIR traffic study (see Appendix G).

Table 4.2-7
Operational Emissions Associated with Onsite Development
(lbs/day)

Emission Source	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Vehicle	53	60	562	132	26
Area	34	11	15	0	0
Total Emissions	**87**	**71**	**577**	**132**	**26**
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*55*
Threshold Exceeded?	***Yes***	***Yes***	***Yes***	***No***	***No***

Source: URBEMIS 2007 calculations. See Appendix C for calculations.

Daily emissions of ROG are estimated at 87 pounds, NO_X emissions would be about 71pounds, CO emissions would be about 577 pounds, PM_{10} emissions would be about 132 pounds, and $PM_{2.5}$ emissions would be about 26 pounds. Emissions of ROG, NOx, CO would exceed the SCAQMD's thresholds of 55 pounds per day of ROG and NOx, and 550 pounds per day of CO.

It should be noted that onsite development would include mixed uses such as residential, commercial, and office in downtown Los Angeles. Moreover, the project site is in close proximity to Union Station, the Little Tokyo/Arts District Metro Gold Line station, and bus stops. As discussed in Section 4.11, *Transportation and Circulation*, these factors would minimize vehicle trips/vehicle miles traveled as compared to similarly scaled development in other portions of the Los Angeles region. In addition, onsite development would be required to comply with Ordinance No. 179,820 (the City's Green Building Ordinance), which requires onsite development to meet the criteria for certification at the LEED certified level. Nevertheless, long-term impacts would exceed SCAQMD regional thresholds. Therefore, impacts would be potentially significant.

As discussed above, the *City of Los Angeles CEQA Thresholds Guide* specifies that operational emissions would be considered significant if operational emission of ROG exceed 10 tons per year. As shown in Table 4.2-7, ROG emissions are estimated at 87 pounds per day, which would be approximately 16 tons per year. Therefore, impacts associated with ROG emissions would exceed the City threshold.

Mitigation Measures. Standard mitigation would be required. In addition, Mitigation Measure AQ-2(b) would require alternative transportation strategies, which would also reduce emissions associated with operation of onsite development.

Standard City Mitigation/Regulations. The following standard mitigation measure would be required.

AQ-2 **Stationary Air Pollution.** An air filtration system shall be installed and maintained with filters meeting or exceeding the ASHRAE Standard 52.2 Minimum Efficiency Reporting Value (MERV) of 12 for commercial land uses and 11 for residential land uses, to the satisfaction of the Department of Building and Safety.

Additional Measure. Potential transportation demand management (TDM) strategies can be applied as mitigation measures for traffic and associated air quality impacts. The goal of a TDM program is to help mitigate the traffic impacts of a project by reducing the number of automobile trips to/from the site. Typical measures include, but are not limited to, carpools, vanpools, public transit, walking and bicycles. There is no single, definitive recipe for success. The same strategies do not always work at different sites. The location of the site and the characteristics of the area can strongly influence the effectiveness and ultimate success of a TDM program. Similarly, the effort or vigor with which the program is operated can also affect its success or lack thereof. Studies have shown the most successful TDM programs are those that are tied to specific incentives and program elements, as opposed to the provision of general information on commuting alternatives. In addition, for these programs to succeed, they need to be "funded" for their duration. In addition to funding, successful programs are linked with aesthetically pleasing features such as "safe" pedestrian walkways, bike racks that are not located in faraway dark corners and information kiosks that are easily accessible and up to date. In sum, the most successful and effective programs appear to be those whereby financial incentives are offered with aesthetic amenities. It is generally accepted and understood that TDM programs are difficult to attach to mixed-use commercial centers and residential developments because of the nature of their operations.

A comprehensive TDM strategy was developed as part of the EIR traffic study and included in Section 4.11, *Transportation and Circulation*. That measure would also address air quality impacts by reducing overall vehicle trips and vehicle miles traveled. The measure is shown in its entirety below.

T-2(a) **TDM Strategies.** The developer shall implement an onsite transportation demand management (TDM) program that achieves at least a 20% reduction in peak hour traffic to and from the project site as compared to the trip generation rates used in this analysis (154 A.M. peak period trips and 229 P.M. peak period trips). This plan shall be subject to review and approval by the LADOT. The following measure shall be included in the TDM program:

- **Site Improvements -** The design and operation of the site to the extent feasible shall be designed into the project to emphasize:
  - **Integrated Mobility Hub –** The site developer shall provide a financial contribution and rent-free space needed to implement a new integrated mobility hub kiosk that is open and clearly visible to the public. The purpose of the kiosk is to attract new transit users and provide current transit users with more connectivity options for the first/last segment of a trip with bike parking, bike and car sharing, etc. This integrated

mobility hub shall be part of the project's design. This could be incorporated into a publicly accessible plaza located on the project site, near transit portals at 1st Street and Alameda Street and/or Temple Street and Alameda Street.

- Preferential loading and unloading for taxis, HOV and carpools make it more convenient and attractive to passengers.
- Wayfinding signage guides and directs people to and from loading and unloading zones and different elements of a site.
- Car pool parking should be closest to the entrance of a building or on the first floor of a garage or structure to reward participants.
- Bicycle parking should be convenient, plentiful, well lit and secure.
- Shower and locker facilities should be provided as they are an important part of the decision for an employee to bike to work.
- Enhanced pedestrian and bicycle pathways for convenient, direct and secure connections.

It must be emphasized that integrating non-auto oriented improvements into the heart of the site rather than off to the side or in a remote corner are paramount to their success. Parking for bicycles should be at the center of activities or near the front door to facilities and be plentiful and well lit. Taxi stands and passenger drop off areas should be convenient. There should be more than one and they should provide lighting, shelter and benches.

- **Car-Sharing and Short-Term Car Rental –** The project shall include on demand access to a fleet of cars for short duration or unexpected trips for residents and employees of the project site. This program would reduce the need for individual to own a car or perhaps a second one. It would enhance the transit oriented nature of the site because it would allow individuals living, working and shopping at the site to rely on transit with the knowledge that an automobile is available with relative ease for those trips where transit or other modes are impractical. In addition, this program would save costs to individuals and businesses and could reduce the parking requirements of onsite development.
- **Transportation Coordinator (TC) -** A transportation coordinator (TC) shall be provided onsite. A TC is a permanent onsite staff position assigned to administer the requirements of a TDM program. Under this strategy, a transportation management association (TMA) would be formed on-site or the project could

become a part of an existing TMA in the area that would help in promoting awareness of the available TDM strategies and creating Transportation Management Plans (TMP) for the employees and patrons of the site.

- **Transportation Information Center (TIC) -** A TIC shall be provided onsite. A TIC is a centrally-located commuter information center where both the employees and visitors can obtain information regarding commute programs, and individuals can obtain real-time information for planning travel without using an automobile. Strategically placed kiosks can provide trip planning and real time bus and train arrival information for users.
- **Trip Monitoring and Reporting Program –** A periodic trip monitoring and reporting program shall be developed that sets trip-reduction milestones and a monitoring program to ensure effective participation and compliance with the TDM goals. Non-compliance with the trip-reduction goals would lead to financial penalties or may require the implementation of physical transportation improvements.

Other potential TDM strategies that may be implemented include, but are not limited to, the following:

- **Transit, Bike and Walk Promotions and Information Materials -** This would include a commuter information packet (CIP), a commuter benefits brochure that contains complete information about various transportation benefits available to individuals, transportation/transit options, HOV programs and discounts, bicycling amenities, transportation subsidies, and other elements that may be available. The CIP should be written in multiple languages including English, Japanese and Spanish. The CIP would be distributed to tenants, employees, and, other building workers and occupants and at promotional events.
- **Tenant Participation -** Under this strategy the transportation coordinator would facilitate tenant and employee awareness and participation in the TMP by distributing the information to tenants at least once each year.
- **Rideshare Matching Opportunities -** This strategy would coordinate ridesharing programs among various building tenants and their employees, provide ride-match services within the building or engage other ride-match facilitators (such as its tenants) to provide this service. It could be applied two different ways. One method is to make available "on the spot" ridesharing. This strategy maximizes trip flexibility for the individual because they do not need to make long-term plans and commitments. There are a number of internet based programs that could be used to match the mobility needs of travelers with drivers. The more

traditional method would be to have the TMA provide an online daily and/or long-term commute rideshare matching service to match interested patrons with carpools and vanpools. The rideshare matching services could also be extended to other employers in close proximity to the project site.

- **Guaranteed Ride Home Program -** This strategy provides a guaranteed ride home program for (occupants/employees) who use a commute mode other than driving. Employers may establish their own program or contract this service with a public agency or private contractor.
- **Transit Pass Sales -** Under this strategy employers or a central management operator can contract with the Metro to become authorized to directly sell transit passes to their onsite employees. In addition they could provide transportation subsidies to building occupants, residential tenants and employees who commute via non-motorized or non-single occupancy vehicle (SOV) modes.
- **Commuter Benefits –** This strategy pursuant to Internal Revenue Code Section 132 (f), states that employers should arrange pre-tax dollar transit commute expense accounts to provide transportation fringe benefits to eligible employees.
- **Flexible/Alternative Work Schedules and Telecommuting Programs –** With this strategy, employers would allow employees to work flexible and alternative work schedules so that their arrival and departure to the site varies to reduce trips during peak periods. Telecommuting would eliminate any trips to the site since the employee would be working off site.
- **Expanded DASH Service –** This strategy would provide additional service and/or capacity to the DASH downtown system via new routes to the Mangrove Estates site. Contributions could be in the form of the purchase of new DASH vehicles or subsidy of service for a fixed period of time.
- **Taxi Services –** Taxis provide on-demand mobility for short and medium length trips. Expanding the City's "hail-a-taxi" demonstration program to the Project site and surrounding area would provide convenient mobility alternatives for unscheduled or quick trips. In addition taxis could and should be equipped to accept regional transit fare cards such as Metro TAP smart card technology. A single method of fare payment would greatly enhance non-auto oriented trip choices. Taxi services can also complement the guaranteed ride home program.

Significance After Mitigation. Table 4.2-8 shows the operational emissions associated with onsite development with implementation of the TDM program. As shown in Table 4.2-8, CO emissions generated by the operation of onsite development would be reduced to below the

SCAQMD threshold. However, ROG and NOx emissions would continue to exceed thresholds after mitigation. Therefore, long-term air quality impacts would be significant and unavoidable.

Table 4.2-8
Mitigated Operational Emissions Associated with Onsite Development (lbs/day)

Emission Source	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Vehicle	44	48	450	106	21
Area	34	11	15	0	0
Total Emissions	**78**	**59**	**465**	**106**	**21**
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*55*
Threshold Exceeded?	***Yes***	***Yes***	***No***	***No***	***No***

Source: URBEMIS 2007 calculations. See Appendix C for calculations.

Impact AQ-3 Traffic generated by onsite development, together with other cumulative traffic in the area, would incrementally increase carbon monoxide (CO) levels in the site vicinity. However, because CO levels would remain within state and federal standards, this impact would be *less than significant*.

Areas with high vehicle density, such as congested intersections and parking garages, have the potential to create high concentrations of CO, known as CO "hot spots." According to the Caltrans' Transportation Project CO Protocol Manual (revised 1997), an intersection should be analyzed for a CO hot spot using the CALINE4 model if a proposed project would have a significant impact at a signalized intersection, causing the level of service (LOS) to change to E or F.

As discussed in Section 4.11, *Transportation and Circulation*, and in the traffic study conducted by KOA (see Appendix G), traffic generated by onsite development would have a significant and unavoidable impact at the following five intersections:

- *Alameda Street and Temple Street*
- *Vignes Street and 1st Street*
- *Mission Road and 1st Street*
- *US-101 on/off-ramps and 1st Street*
- *Hewitt Street and 1st Street*

The CO levels at sensitive receptors near these intersections could increase incrementally with traffic generated by onsite development.

The intersection of Hewitt Street and 1st Street was analyzed for CO hot spots using the CALINE4 air quality model. This intersection was chosen for analysis as it would be the intersection with the greatest amount of traffic generated by onsite development and have the highest increase in the volume to capacity ratio as a result of traffic generated by development on the project site. In addition, this intersection was chosen for analysis because of its proximity to sensitive receptors (multi-family residences along 1st Street and Rose Street). The intersection of Hewitt Street and 1st Street is forecast to operate at LOS D during the weekday A.M. peak hour and LOS F during the P.M. peak hour under cumulative + project conditions.

As recommended by the Caltrans' Transportation Project CO Protocol Manual, the receptor location was set 10 feet from the intersection to provide a conservative analysis of CO concentrations, although actual receptor locations are approximately 200 feet from the intersection. This distance was chosen for an initial screen run. According to Caltrans, if significant impacts are not identified at this minimum distance, further modeling is not required.

The results of the CALINE4 CO hot spot model for onsite development are shown in Table 4.2-9 (more detailed results are contained in Appendix C). Values in Table 4.2-9 reflect the concentrations resulting when cumulative and project traffic are added to the base condition as found in the traffic impact analysis prepared by KOA (see Appendix G).

Table 4.2-9
Estimated Carbon Monoxide Concentrations

Intersection	Cumulative + Project CO Concentration (ppm)		California Standard (ppm)		Federal Standard (ppm)		Significant Impact?
	1-hour	8-hour[a]	1-hour	8-hour	1-hour	8-hour	
Hewitt Street and 1st Street	2.2	1.8	20	9.0	35	9.0	**No**

[a] 8 -hour CO concentration is based on an urban persistence factor of 0.8 for a congested/stagnant urban area
All concentrations in parts per million (ppm)
See Appendix C for calculations.

The one-hour CO concentration at the modeled intersection is estimated at 2.2 ppm. This would be within the California one-hour standard of 20 ppm and the federal one-hour standard of 35 ppm. Based on an urban persistence factor of 0.8 (for an congested/stagnant urban area), the maximum cumulative 8-hour CO concentration at the intersection would be approximately 1.8 ppm, which is also within the 9 ppm California and federal 8-hour standard. Therefore, cumulative + project traffic would not cause an exceedance of either the state or federal CO standards and project-related CO impacts would be less than significant. Because impacts at this most affected intersection would not be significant, it is anticipated that impacts at other study intersections would not be significant either.

Mitigation Measures. Mitigation is not required as significant impacts have not been identified.

c. Cumulative Impacts. Onsite development, in conjunction with other planned and pending development in the City of Los Angeles, would cumulatively increase regional air pollutant emissions. If all of the development indicated in Table 3-2 (Section 3.0, *Environmental Setting*) were to proceed, individual construction projects located throughout the City and the surrounding area would add approximately 2.7 million square feet (sf) of commercial/retail space, 1.8 million sf of office space, 20,000 residential dwelling units, 400,000 sf of restaurant space, 2,000 hotel rooms and 200,000 sf (900 students) of institutional development.

The SCAQMD's recommended approach to determining the significance of cumulative air quality impacts for criteria air pollutants is to first determine whether or not a proposed project would result in a significant project-level impact to regional air quality based on SCAQMD significance thresholds. If the project impact would not exceed SCAQMD thresholds, then the lead agency needs to consider the additive effects of related projects only if the project is part of an ongoing regulatory program or is contemplated in a program EIR and the related projects are located within an approximately one mile of the project site.

PM_{10} emissions from project construction activities would be due primarily to fugitive dust from earthmoving activities and truck traffic on paved and unpaved haul roads. Any significant cumulative impacts on PM10 concentrations would likely come from another construction project in the immediate vicinity of the project site. This is because PM_{10} emitted at ground level tends to settle and affect nearby structures, vegetation, and ground surfaces, tending to deplete the emitted plume as it travels downwind. Given that the project area is essentially fully developed, major new construction would likely entail substantial redevelopment of currently developed land, or perhaps installation of additional transportation infrastructure.

NOx emissions are a concern mainly because they are a precursor to ozone, which is formed through photochemical reactions in the atmosphere. NOx emissions almost anywhere in the SCAB can be a concern with respect to O_3 formation in the SCAB, due to the slow dilution rate of fresh air entering the SCAB. With respect to construction, NOx emissions from the project would not likely add significantly to SCAB total emissions, if one assumes that there is a more or less fixed pool of construction equipment used within the SCAB, and that this equipment is used on various projects, based on scheduling needs.

Onsite development is not part of an ongoing regulatory program; therefore, the SCAQMD recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. As discussed in Impact AQ-1, daily emissions of construction-related pollutants would exceed SCAQMD significance thresholds. As discussed in Impact AQ-2, onsite development would result in an increase in daily operational emissions that would exceed the SCAQMD thresholds.

By applying the SCAQMD cumulative air quality impact methodology, implementation of onsite development would potentially result in an addition of criteria pollutants such that cumulative impacts, in conjunction with related projects, would occur. Because onsite development would potentially generate emissions that exceed the SCAQMD's thresholds, the project would potentially make a cumulatively considerable contribution with regard to criteria pollutants.

With respect to project operation, the key issue is the emission budget established by the SCAQMD in its AQMP. If the predicted operations-related emission increases associated with alternatives were not included in the SCAQMD emission budget established by the SCAQMD emission budget for future year NAAQS O3 attainment demonstration, then the project could exacerbate efforts to bring the SCAB into attainment with the NAAQS. However, since the SCAQMD has already projected, to the best of its ability, SCAB-wide emissions from all sources for future years, there are no additional "cumulative" emissions to add as a result of the operational emissions related to site development.