# IV.C. AIR QUALITY

## ENVIRONMENTAL SETTING

### Atmospheric Setting

The climate of Pacific Palisades is characterized by warm summers, mild winters, infrequent rainfall, moderate afternoon breezes, and generally fair weather. The clouds and fog that form along the Southern California coastline frequently cover coastal areas of Santa Monica Bay at night, but they often burn off quickly during the morning hours. The persistent onshore flow normally has very low pollution levels unless the marine air has previously spent time over land. Compared to other parts of the air basin, the Pacific Palisades area generally has much less smog and other air pollutants during normally high pollution periods from spring to fall because of prevailing wind patterns.

Temperatures near the project site average a very comfortable 62ºF year-round. Summer afternoons are typically in the upper 70ºs and winter mornings drop to the mid-40s. Significant extremes of temperature are rare in the project area with temperatures rarely exceeding 90ºF in summer or dropping below 35ºF in winter.

Rainfall in the project area varies considerably in both time and space. Rainfall amounts vary from an average of 10 to 18 inches as a function of local exposure and topography. The Santa Monica pier averages 12.5 inches of rain during a normal year while rainfall in the Santa Monica Mountains at Topanga averages almost twice as much. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April with summers often completely dry. Light rain (0.1" in 24 hours) falls on about 20 days during a normal year with 8 days in the moderate (0.5" in 24 hours) category.

Winds blow primarily from southwest to northeast by day and from north to south at night in response to the regional pattern of onshore flow by day and offshore flow at night. In summer, onshore flow persists well into the night as any offshore flow is weak and disorganized. In winter, the onshore flow terminates near sunset and a well organized basinwide drainage wind intensifies throughout the night. Wind speeds during the afternoon are 10 mph or more, while winds at night average less than 5 mph.

The net effect of the sharply bimodal airflow near the project site in terms of air pollution is that daytime ventilation is good, and any locally generated air pollutants will be rapidly dispersed beyond the Pacific Palisades area. At night, pooling of cool air in low elevations combined with light winds may allow for air stagnation in valley bottoms, especially near local sources such as freeways and shopping center parking lots. Traffic densities in the Santa Monica Mountains are very low; however, with the exception of intersections along the Pacific Coast Highway (PCH), there is little potential for any local "hot spots" in the project area.

In addition to winds that control the rate and direction of pollution dispersal, Southern California is notorious for strong temperature inversions that limit the vertical depth through which pollution can be mixed. In summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the basin. Air starting onshore at the beach is relatively clean, but becomes progressively more polluted as sources continue to add pollution from below without any dilution from above. Some dilution occurs in the thermal chimneys along the heated slopes of the Santa Monica Mountains, but not enough to provide an adequate mixing volume to contain the large amount of pollution initially generated or subsequently formed by atmospheric chemical reactions.

A second inversion type forms on clear, winter nights when cold air off the mountains sinks to the surface while the air aloft remains warm. This process forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near their source. Both types of inversions occur throughout the year to some extent, but the marine inversions are very dominant during the day in summer, and radiation inversions are much stronger in winter when nights are long and air is cool. Inversion measurements at Santa Monica Airport show a frequency of elevated subsidence inversions at 1,500 feet and below on over 80 percent on summer afternoons and surface based radiation inversions on 70 percent of all winter nights. The governing role of these inversions in atmospheric dispersion leads to a completely different air quality environment in summer in the Pacific Palisades area than in winter.

**Air Quality Setting**

***Ambient Air Quality Standards (AAQS)***

In order to gauge the significance of the air quality impacts of the proposed project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. These groups are given the name "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations above these minimum standards before adverse effects are observed. It has been demonstrated, however, that chronic exposure to ozone, even at concentrations equal to the federal AAQS, may have adverse long-term health implications. Just meeting clean air standards in the future may therefore not be enough to guarantee respiratory health unless some additional margin of safety is ultimately established.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, to require more stringent compliance, or to include different exposure periods. Because California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table IV.C-1.

The federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of all current health data. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "$PM_{2.5}$"). New national AAQS were adopted on July 17, 1997. California standards for $PM_{10}$, which includes $PM_{2.5}$, are more stringent than the federal $PM_{2.5}$ standard.

Planning and enforcement of the new federal standards for $PM_{2.5}$ and for ozone (8-hour) were put on hold through a decision by the U.S. Court of Appeals. The Appeals Court ruled that EPA did not have discretionary authority to adopt national clean air standards without specific congressional approval. An appeal filed on behalf of EPA by the Department of Justice was heard by the U.S. Supreme Court in early November, 2000. On February 27, 2001, the U.S. Supreme Court unanimously ruled that EPA does not require specific congressional approval to adopt health based standards, nor do such standards require a cost: benefit analysis. The Court did find, however, that the attainment schedule for "new" and "old" standards was inconsistent, and that the most recently adopted standards can not be implemented until schedule inconsistencies are resolved. Data collection for these standards is ongoing, but no additional attainment action can be taken until schedule issues are resolved.

**Table IV.C-1**
**Ambient Air Quality Standards**

| Pollutant | Averaging Time | California Standards | | Federal Standards | | |
|---|---|---|---|---|---|---|
| | | Concentration | Method | Primary | Secondary | Method |
| Ozone ($O_3$) | 1 Hour | 0.0.9 ppm (180 ug/m$^3$) | Ultraviolet Photometry | 0.12 ppm (235 ug/m$^3$) | Same as Primary Standard | Ethylene Chemiluminescence |
| | 8 Hour | --- | | 0.08 ppm (157 ug/m$^3$) | | |
| Respirable Particulate Matter ($PM_{10}$) | Annual Geometric Mean | 30 ug/m$^3$ | Size Selective Inlet Sampler ARB Method P(8/22/85) | --- | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | 24 Hour | 50 ug/m$^3$ | | 150 ug/m$^3$ | | |
| | Annual Arithmetic Mean | --- | | 50 ug/m$^3$ | | |
| Fine Particulate Matter ($PM_{2.5}$) | 24 Hour | No Separate State Standard | | 65 ug/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | | | 15 ug/m$^3$ | | |
| Carbon Monoxide (CO) | 8 Hour | 9.0 ppm (10 mg/m$^3$) | Non-dispersive infrared Photometry (NDIR) | 9 ppm (10 mg/m$^3$) | None | Non-dispersive infrared Photometry (NDIR) |
| | 1 Hour | 20 ppm (23 mg/m$^3$) | | 35 ppm (40 mg/m$^3$) | | |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 mg/m$^3$) | | --- | | |
| Nitrogen Dioxide ($NO_2$) | Annual Arithmetic Mean | --- | Gas Phase Chemiluminescence | 0.053 ppm (100 ug/m$^3$) | Same as Primary Standard | Gas Phase Chemiluminescence |
| | 1 Hour | 0.25 ppm (470 ug/m$^3$) | | --- | | |
| Lead | 30 days average | 1.5 ug/m$^3$ | AIHL Method 54 (12/74) Atomic Absorption | --- | --- | High Volume Sampler and Atomic Absorption |
| | Calendar Quarter | --- | | 1.5 ug/m$^3$ | Same as Primary Standard | |
| Sulfur Dioxide ($SO_2$) | Annual Arithmetic Mean | --- | Fluorescence | 0.030 ppm (80 ug/m$^3$) | --- | Pararoscaniline |
| | 24 Hour | 0.04 ppm (105 ug/m$^3$) | | 0.14 ppm (365 ug/m$^3$) | --- | |
| | 3 Hour | --- | | --- | 0.5 ppm(1300 ug/m$^3$) | |
| | 1 Hour | 0.25 ppm (655 ug/m$^3$) | | --- | --- | |
| Visibility Reducing Particles | 8 Hour (10 am to 6 pm, PST) | In sufficient amount to produce an extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent. Method: ARB Method V(8/18/89) | | **No Federal Standards** | | |
| Sulfates | 24 Hour | 25 ug/m$^3$ | Turbidamtric Barium Sulfate – AIHL Method 61 (2/76) | | | |
| Hydrogen Sulfide | 1 Hour | 0.03 ppm (42 ug/m$^3$) | Cadmium Hydroxide Stractan | | | |

***Pollutants and Effects***

Some comments submitted in response to the Notice of Preparation for this EIR expressed concern of how air quality emissions, particularly during project demolition, grading and construction, would impact adjacent residents. Air quality studies generally focus on five pollutants that are most commonly measured and regulated: carbon monoxide (CO), ozone ($O_3$), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), and respirable particulate matter ($PM_{10}$).

*Carbon Monoxide*

Carbon monoxide, a colorless and odorless gas, interferes with the transfer of oxygen to the brain. It can cause dizziness and fatigue, and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. In urban areas, CO is emitted by motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. Automobile exhausts release most of the CO in urban areas. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient carbon monoxide concentrations generally follow the spacial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions[1] are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest CO concentrations measured in the South Coast Air Basin (SCAB) are typically recorded during the winter.

*Ozone*

Ozone ($O_3$), a colorless toxic gas, is the chief component of urban smog. $O_3$ enters the blood stream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. $O_3$ also damages vegetation by inhibiting their growth. Although $O_3$ is not directly emitted, it forms in the atmosphere through a chemical reaction between reactive organic gas (ROG) and nitrogen oxides ($NO_X$) under sunlight.[2] $O_3$ is present in relatively high concentrations within the Basin, and the damaging effects of photochemical smog are generally related to the concentration of $O_3$. Meteorology and terrain play major roles in ozone formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile.

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1 *Inversion is an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air.*

2 *ROG and $NO_X$ are emitted from automobiles and industrial sources.*

*Nitrogen Dioxide*

Nitrogen dioxide, a brownish gas, irritates the lungs. It can cause breathing difficulties at high concentrations. Like $O_3$, $NO_2$ is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and $NO_2$ are collectively referred to as nitrogen oxides ($NO_x$) and are major contributors to ozone formation. $NO_2$ also contributes to the formation of $PM_{10}$ (see discussion of $PM_{10}$ below). At atmospheric concentration, $NO_2$ is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility. There is some indication of a relationship between $NO_2$ and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm).

*Sulfur Dioxide*

Sulfur dioxide ($SO_2$) is a product of high-sulfur fuel combustion. Main sources of $SO_2$ are coal and oil used in power stations, in industries, and for domestic heating. Industrial chemical manufacturing is another source of $SO_2$. $SO_2$ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. $SO_2$ can also cause plant leaves to turn yellow, as well as erode iron and steel. In recent years, $SO_2$ concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of $SO_2$ and limits on the sulfur content of fuels. $SO_2$ concentrations have been reduced to levels well below the state and national standards, but further reductions in emissions are needed to attain compliance with standards for sulfates and $PM_{10}$, of which $SO_2$ is a contributor.

*Suspended Particulate Matter*

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

$PM_{10}$ and $PM_{2.5}$ pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{10}$

and $PM_{2.5}$ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body. These substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas, particles 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, particles 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues.[3] Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

***Baseline Air Quality***

Existing levels of ambient air quality and historical trends and projections in the Pacific Palisades area are best documented from measurements made by the South Coast Air Quality Management District (SCAQMD). The SCAQMD operates an air quality monitoring station in West Los Angeles at the VA Hospital which monitors regional air pollutants such as ozone, and carbon monoxide (CO) and nitrogen oxides ($NO_x$) which tend to be more related to local source-receptor relationships. Measurements of 10-micron diameter or less particulate matter ($PM_{10}$) are not made at the West Los Angeles site such that fine particulate levels must be inferred from other data resources. Because of lower development density in the Palisades than in West Los Angeles, project site air quality is likely better than at the nearest SCAQMD station. Data from West Los Angeles is therefore a worst-case representation of the project site air quality baseline. Table IV.C-2 summarizes the last five years of published data for the West Los Angeles air monitoring station, supplemented with inhalable particulate ($PM_{10}$) data from the downtown Los Angeles (North Main) station as most representative of project site conditions.

Because air quality becomes progressively degraded as one moves inland, especially during the warmer months of the year, project area $PM_{10}$ air quality is likely substantially better than that inferred from downtown Los Angeles where around one-third of all readings exceed the $PM_{10}$ standard. Measurements of total suspended particulates (TSP) at West Los Angeles compared to downtown Los Angeles suggests that the project area has only around 20 percent of the number of days with dust levels exceeding standards than downtown Los Angeles. $PM_{10}$ levels in Pacific Palisades more likely

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[3] *The NAAQS for $PM_{2.5}$ was adopted in 1997. Presently, no methodologies for determining impacts relating to $PM_{2.5}$ have been developed or adopted by federal, state, or regional agencies. Additionally, no strategies or mitigation programs for $PM_{2.5}$ have been developed or adopted by Federal, State, or regional agencies. Currently, this standard is not enforceable. However, the standard may be reinstated in the future. Thus, this air quality analysis does not analyze $PM_{2.5}$.*

**Table IV.C-2**
**Project Area Ambient Air Quality Monitoring Summary - 1996 – 2000**
**(Days Exceeding Standards and Observed Maximum Concentrations)**
**(Entries shown as ratios = samples exceeding std./samples taken)**

| Pollutant | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|
| Ozone: | | | | | |
| 1-hour > 0.09 ppm | 13 | 6 | 7 | 4 | 2 |
| 1-hour > 0.12 ppm | 1 | 0 | 1 | 0 | 0 |
| 8-hour > 0.08 ppm | 4 | 0 | 0 | 0 | 0 |
| Max. 1-hour Conc. (ppm) | 0.14 | 0.11 | 0.13 | 0.12 | 0.10 |
| Carbon Monoxide: | | | | | |
| 1-hour > 20.0 ppm | 0 | 0 | 0 | 0 | 0 |
| 8-hour $\geq$ 9.1 ppm | 0 | 0 | 0 | 0 | 0 |
| Max. 1-hr. Conc. (ppm) | 7 | 7 | 7 | 6 | 6 |
| Max. 8-hr. Conc. (ppm) | 4.5 | 4.4 | 4.5 | 3.8 | 4.3 |
| Nitrogen Dioxide | | | | | |
| 1-hour > 0.25 ppm | 0 | 0 | 0 | 0 | 0 |
| Max. 1-hr. Conc. (ppm) | 0.18 | 0.14 | 0.13 | 0.13 | 0.16 |
| Particulate Sulfate | | | | | |
| 24-hr > 25 μg/m$^3$ | 0/55 | 0/56 | 0/55 | -/-- | 0/60 |
| Max. 24-hr Conc. (μg/m$^{3)}$ | 12.2 | 14.0 | 11.2 | --.- | 16.4 |
| Inhalable Particulates ($PM_{10}$) | | | | | |
| 24-hour > 50 μg/m3 | 11/0 | 15/0 | 10/59 | 19/60 | 15/60 |
| 24-hour > 150 μg/m3 | 0/60 | 0/60 | 0/59 | 0/60 | 0/60 |
| Max. 24-hour Conc. (μg/m$^3$) | 138 | 102 | 80 | 88 | 80 |
| Ultrafine Particulates ($PM_{2.5}$) | | | | | |
| 24-hr > 65 μg/m$^3$ | -/--- | -/--- | -/--- | 2/136 | 11/334 |
| Max. 24-hour Conc. (μg/m$^3$) | --.- | --.- | --.- | 69.3 | 87.8 |

*Source: West Los Angeles and Downtown North Main ($PM_{10}$ Data) Air Quality Monitoring Stations.*

exceed standards on less than ten percent of all days (33% exceeded downtown X 20% ratio of TSP ~ 6% exceeded near the project site).

Ozone is the only gaseous pollutant that exceeds clean air standards with any substantial frequency in the project area. The federal ozone standard was exceeded on an average of 15 days per year in the late 1980s and on 10 days per year in the early 1990s. The more stringent State standard was exceeded on around 60 days per year in the late 1980s and on 30-40 days in the early 1990s. By the mid-1990s, there were less than 20 days exceeding the State standard and almost no days over the federal standard. The last recorded first-stage smog episode (1-hour $\geq$ 0.20 ppm) in West Los Angeles was in 1989.

The very positive improvement trend in basin air quality was best seen in 1996-2000 which recorded the following new records:

- fewest days exceeding state ozone standard (two) (2000)
- fewest days exceeding federal ozone standard (zero) (1999, 2000)
- lowest one-hour maximum ozone level (0.10) (2000)
- lowest one-hour CO level (6 ppm) (1999, 2000)
- lowest eight-hour CO level (3.8 ppm) (1999)
- lowest one-hour NO2 level (0.13 ppm) (1999)
- lowest maximum 24-hour $PM_{10}$ level (80 $\mu g/m^3$) (1998, 2000)

The Pacific Palisades area thus experiences occasional degraded air quality for ozone and $PM_{10}$, but standards are met on a relatively high percentage of days, and the improvement trend noted above is expected to continue.

**Air Quality Planning**

The Federal Clean Air Act (1977 Amendments) stated that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. The South Coast Air Basin (SCAB) could not meet the deadline for ozone, nitrogen dioxide, carbon monoxide, or $PM_{10}$. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the South Coast Air Quality Management District and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it in 1982 to project attainment of the standards in 2000. Several subsequent AQMP revisions were made when air quality did not improve as rapidly as forecast.

In 1988, because of uncertainty in federal Clean Air Act reauthorization, the California Legislature enacted the California Clean Air Act (CCAA). The CCAA requires that regional emissions be reduced by 5 percent per year, averaged over 3 year periods, until attainment can be demonstrated. The planning process under the CCAA is similar to that for federally mandated criteria such that they are integrated, where possible, to minimize duplicate planning efforts.

The 1990 federal Clean Air Act Amendments required that all states with airsheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). The 1991 AQMP was modified/adapted and submitted as the SCAB portion of the SIP. The 1991 SIP submittal estimated that an 85% basinwide reduction in volatile organic compound (VOC) emissions and a 59% reduction in oxides of nitrogen ($NO_x$) between 1990 and 2010 were needed to meet federal clean air standards.

About 40% of these reductions were to come from existing pollution control programs. The rest would come from new rules, technologies or other reduction programs.

In 1996, EPA approved the 1994 submittal of the SCAB portion of the SIP. The plan was finally approved after considerable debate on the contingency measures that should be implemented if progress is not as rapid as anticipated in the 1994 SIP. The currently approved plan will not be in effect for long because the federal Clean Air Act required that an updated plan be submitted by February 8, 1997 which included attainment plans for all pollutants exceeding federal standards. The CCAA requires an update of the State-mandated Clean Air Plan every three years.

An AQMP update was developed that jointly incorporated the federal (EPA) and State (ARB) air quality planning guidelines. Components of the 1997 plan update include:

- Demonstration of attainment for ozone, CO, and $PM_{10}$,
- Updated emissions inventories (1993 base year) of VOC, $NO_x$, CO, $SO_x$ and $PM_{10}$,
- Emissions budgets for future years of the inventoried compounds,
- An updated pollution control strategy, and
- Contingency measures if the plan as presently proposed fails to meet stated timetables.

Additional research and photochemical computer modeling, as well as improved emissions estimates, now suggest that formerly predicted emissions reductions required to meet standards need not be quite as severe as thought earlier. Table IV.C-3 summarizes the currently proposed regional attainment planning for ozone (VOC and $NO_x$) and for carbon monoxide (CO). Emissions reductions of around 67 percent for VOC, 57 percent for $NO_x$ and 71 percent for CO are anticipated from the currently proposed AQMP update. Within the plan, some measures considered "long-term reductions" require additional technological development whose development schedule is uncertain. There is therefore no clear scientific consensus that the 1997 update will be able to achieve its mandatory clean air objectives by the end of 2010.

The 1997 SIP Revisions were determined in a suit filed by several environmental groups to not meet the progress schedule requirements of the Clean Air Act. The 1997 Ozone SIP Revisions were returned to the SCAQMD for further modifications. The Amendment was adopted in 1999 and approved by the EPA in 2000 as the currently approved SIP for the air basin. The 1999 Amendment modifications are as follows:

- include new short-term stationary source control measures;
- revise the adoption/implementation schedule for 13 short-term volatile organic compounds (VOC) and oxides of nitrogen ($NO_x$) stationary source control measures from the 1997 Ozone SIP Rev.;

**Table IV.C-3**
**South Coast Air Basin Attainment Plan**
**(Emissions in tons/day)**

| | VOC* | $NO_x$* | CO** |
|---|---|---|---|
| **Current Inventory[1]** | | | |
| Stationary + Areawide | 410 | 144 | 363 |
| On-Road Mobile | 562 | 761 | 5,826 |
| Off-Road Mobile | 119 | 304 | 1,009 |
| **Total** | **1,092** | **1,208** | **7,197** |
| **2010 Forecast[2]** | | | |
| Stationary + Areawide | 448 | 121 | 412 |
| On-Road Mobile | 262 | 416 | 2,580 |
| Off-Road Mobile | 83 | 235 | 934 |
| **Total** | **794** | **771** | **3,926** |
| Short-term + Intermediate Reductions | <221> | <120> | <1,468> |
| Long-term Reductions | <204> | <77> | <0> |
| 2010 Remaining[3] | 369 | 574 | 2,458 |

*[1] 1995 Base Year*
*[2] With current emissions reduction programs and adopted growth forecasts.*
*[3] Levels at which all federal air quality standards will be met.*
*Source: SCAQMD, Draft Final 1997 AQMP (October 1996), and California ARB, "The 2001 California Almanac of Emissions & Air Quality."*
* - *summer ozone precursors*
** - *winter CO "hot spot" precursors*

- provide further VOC emission reductions in the near term; and
- revise the emission reduction commitments for the long-term control measures in the 1997 Ozone SIP Revision that the SCAQMD is responsible to implement.

The $PM_{10}$ portion of the 1997 AQMP is unaffected by these measures designed to maintain continued schedule progress toward ozone attainment.

A residential project such as the proposed project does not directly relate to the regional air quality plan. General development relates to the air quality planning process through the regional growth projections and supporting infrastructure plans. An air quality impact would be regionally significant if it caused a substantial change in the location, magnitude or phasing of development not accurately anticipated in the Regional Comprehensive Plan (RCP) and its supporting Transportation Master Plan. To the extent that the proposed project accommodates some small fraction of the forecast residential growth for metropolitan Los Angeles, project implementation would not interfere with regional attainment and maintenance of clean air standards.

## ENVIRONMENTAL IMPACTS

### Thresholds of Significance

Many air quality impacts from dispersed mobile sources, i.e., the dominant pollution generators from residential uses, often occur hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual source is generally immeasurably small. The SCAQMD has therefore developed suggested significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Air Quality Handbook (1993) states that any projects in the SCAB with daily emissions that exceed any of the following thresholds should be considered as having an individually and cumulatively significant air quality impact:

- 55 lbs per day of ROC*
- 55 lbs per day of NOx**
- 550 lbs per day of CO
- 150 lbs per day of $PM_{10}$
- 50 lbs per day of $SO_x$

* *75 lbs/day during construction*
** *100 lbs/day during construction*

Beyond emissions magnitude, the SCAQMD also recommends that any relevant secondary evaluation criteria be applied to a proposed project. These additional indicators are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation;
- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP;
- Project could generate vehicle trips that cause a CO hot spot;
- Project might have the potential to create or be subjected to objectionable odors;
- Project could have hazardous materials on site and could result in an accidental release of air toxic emissions;
- Project could emit an air toxic contaminant regulated by District rules or that is on a federal or state air toxic list;
- Project could involve disposal of hazardous waste;
- Project could be occupied by sensitive receptors near a facility that emits air toxics or near CO hot spots; or
- Project could emit carcinogenic air contaminants that could pose a cancer risk.

**Project Impacts**

***Demolition Impacts***

Given the age of existing structures on the project site, there may be asbestos containing materials (ACMs) in pipe insulation, fire retardant features, roofing, flooring, etc. of the existing residential buildings. If ACMs are present in the structures, they must be removed by licensed contractors using control methods prescribed in SCAQMD Rule 1403. Rule 1403 covers every phase of assessment, removal and disposal of ACMs. Depending upon the friability (powdering tendency) of the ACMs, removal procedures range from persons wearing respirators inside sealed rooms ventilated with high efficiency particulate filtration to wetting down the surface to scrape off the ACMs. Disposal by licensed haulers must be at special hazardous waste facilities constructed to securely entomb the materials in perpetuity. This is a potentially significant impact that can be mitigated to a less than significant level via mandatory compliance with SCAQMD Rule 1403, which would ensure safe exposure for both abatement workers as well as the general public.

***Construction Impacts***

Construction activities will generate dust from demolition of existing structures, from surface disturbance for new construction, and from equipment exhaust from heavy off-road equipment. Dust generation from demolition activities will depend upon the rate of material removed. The $PM_{10}$ emissions rate for demolition (SCAQMD CEQA Handbook) is 420 pounds per million cubic feet of building volume. The 20 existing dwelling units are estimated to comprise 15,000 cubic feet per average dwelling unit. $PM_{10}$ emissions are calculated as follows relative to the 150 pound per day $PM_{10}$ significant emissions threshold:

| Demolition Duration | Emissions (lbs/day) |
|---|---|
| 1 Day | 126 |
| 5 Days | 25 |
| 10 Days | 13 |
| 20 Days | 6 |
| 120 Days | 1* |

*(demolition duration estimated to be 120 days)

For a reasonable demolition intensity, daily $PM_{10}$ emissions will be substantially less than significant. Subsequent construction dust emissions will depend upon the site disturbance "footprint". The total project site acreage is approximately four acres. About one-half of the site will experience disturbance during construction. Of the four acres, approximately 50 percent (two acres) will remain in open space and in their natural vegetative state. As a worst-case assumption, the project disturbance "footprint" was assumed to be two acres.

The heaviest construction period was assumed to require 100 work-days with an equipment energy consumption for residential use of 300,000 brake-Horsepower-Hours (BHP-HR) per acre.

Emissions of particulates ($PM_{10}$) from construction activity soil disturbance and from equipment operations were evaluated using factors in the SCAQMD CEQA Handbook. Fugitive dust particulate matter is calculated as follows:

$$PM_{10} = 2.0 \text{ acres X } 26.4 \text{ pounds/acre/day} = 52.8 \text{ pound/day}$$

Daily construction activity $PM_{10}$ emissions of less than 150 pounds per day are considered to have a less-than-significant air quality impact.

Equipment exhaust will be generated from the following average daily activity level:

$$\begin{aligned} \text{Daily BHP-HR} &= 2.0 \text{ acres X } 300{,}000 \text{ BHP-HR/acre/100 days} \\ &= 6{,}000 \text{ BHP-HR/day} \end{aligned}$$

Exhaust emissions from typical construction equipment (backhoe, small dozer, trencher, etc.) for this activity level are as follows:

| | | |
|---|---|---|
| Carbon Monoxide | - | 11.4 pounds/day |
| Exhaust Hydrocarbons | - | 3.6 pounds/day |
| Nitrogen Oxides | - | 51.6 pounds/day |
| Sulfur Oxides | - | 3.6 pounds/day |
| Exhaust Particulates | - | 1.8 pounds/day |

*Source: SCAQMD Handbook (1993), Table A9-3-A.*

Small amounts of additional emissions during construction will result from construction worker travel. Based on an estimated 20 employees traveling 50 miles per day, a total average daily commuting component of 1,000 miles per day was attributed to project construction activities, in addition to 200 miles of truck traffic bringing concrete, asphalt or other building materials. Another 200 miles per day was assumed for the export/import of over 100,000 cubic yards of dirt/day. Combined on-road vehicle, off-road equipment and soil disturbance fugitive dust will not exceed the SCAQMD significance threshold as seen in Table IV.C-4.

**Table IV.C-4**
**SCAQMD Fugitive Dust Significance Threshold**

| | Pollutant | | | | |
|---|---|---|---|---|---|
| | CO | ROG | $NO_x$ | $SO_x$ | $PM_{10}$ |
| **Fugitive Dust Threshold** | ---- | ---- | ---- | ---- | 52.8 |
| **Equipment Exhaust** | 11.4 | 3.6 | 51.6 | 3.6 | 1.8 |
| **Worker Commuting** | 23.0 | 2.7 | 2.6 | --- | 0.1 |
| **On-Road Trucks** | 10.2 | 1.0 | 8.4 | --- | 0.3 |
| **Total** | 44.6 | 7.3 | 62.6 | 3.6 | 55.0 |
| **SCAQMD Threshold** | 550 | 75 | 100 | 150 | 150 |

The project is too limited in scope to cause air quality impact significance thresholds to be exceeded during construction. Whereas total daily emissions of dust or equipment exhaust will be less than significant, the very limited distance between on-site activities and adjacent occupied homes creates a potential for dust deposition soiling nuisance on parked cars, landscaping foliage, or outdoor furniture. This potential would be considered an adverse impact because of property impacts. It is not a significant impact because the emissions magnitude is less than SCAQMD threshold levels, and the health impact of soil dust is much less than from complex chemical species found in urban atmospheres. Mitigation measures that reduce small-diameter, respirable particulate emissions also reduce larger soiling particles. Mitigation measures for dust control are thus recommended even if the SCAQMD threshold is not exceeded.

***Operational Traffic***

Daily site-related travel by project residents will generate approximately an additional 348 vehicle trips per day. For the typical Southern California vehicle fleet, it requires about 2,000 daily vehicle trips for enough exhaust emissions to be generated to equal the SCAQMD significance threshold.[4] The project is less than 20 percent of the size/scope of a project that would create a potentially significant air quality impact.

This conclusion was confirmed with the California Air Resources Board (ARB) urban emissions computer model called URBEMIS7G. "New" emissions from an 82-unit condominium complex for a year 2005 completion date are shown in Table IV.C-5. New emissions will represent less than 10

[4] *SCAQMD CEQA Handbook, 1993.*

percent of the daily emissions that would qualify as a potentially significant project. The proposed project is also too limited in scope to create a regionally significant air quality impact. If any adverse air quality consequences were to be associated with the proposed project, they would be concentrated on microscale effects of project proximity to the PCH, as discussed below.

**Table IV.C-5**
**Mobile Source Emissions Calculations**

| | **POLLUTANT** | | | |
|---|---|---|---|---|
| | **ROG** | **$NO_x$** | **CO** | **$PM_{10}$** |
| Weekday Emissions (348 trips/day) | 4.1 | 3.6 | 24.4 | 2.5 |
| SCAQMD Significance Threshold | 55 | 55 | 550 | 150 |
| Percent of Threshold - | 7% | 7% | 4% | 2% |
| **Significant Impact (?)** | **No** | **No** | **No** | **No** |

*Source: URBEMIS7G Computer Model; Year = 2005*

### *On-Site Air Quality Analysis*

In order to analyze microscale air quality patterns in the project vicinity, an air pollution screening model was run for four intersections in the project vicinity where traffic forecasts/turning movements have been predicted for existing (2002) and near-term cumulative future (2005; without and with-project) traffic. The A.M. peak traffic hour was analyzed because morning rush hour meteorological conditions are generally far more restrictive (calm winds and low-level temperature inversions) than during the afternoon.

One-hour CO concentrations were calculated at a distance of 25 feet from the edge of various project vicinity roadways. If no air pollution "hot spot" exists this close to the roadway, the project site will be unaffected. Peak A.M. traffic volumes were combined with minimum theoretical dispersion conditions. Maximum local traffic pollution exposure was presumed to occur at the same day/hour as the highest single one-hour background level of 6 ppm observed by the SCAQMD in West Los Angeles (1999-2000).

The results of the microscale air quality impact analysis relative to the California one-hour CO standard of 20 ppm are in Table IV.C-6.

**Table IV.C-6**
**Microscale Air Quality Impact Analysis**
**Relative to the California One-Hour CO Standard of 20 ppm**

| Intersection | (2002) Existing | Cumulative Future (2005) No Project | Cumulative Future (2005) With Project |
|---|---|---|---|
| Los Liones/Tramonto | 6.2 | 6.2 | 6.2 |
| Sunset Boulevard @: | | | |
| Los Liones | 7.1 | 7.0 | 7.0 |
| Castellammare | 6.9 | 6.8 | 6.8 |
| P.C.H. | 21.4[1] | 19.4 | 19.5 |

*[1] Possible one-hour CO "hot spot"*
*Source: Caltrans CO Screening Procedure based on CALINE4 model.*

A one-hour CO "hot spot" may presently exist at the Sunset Boulevard/PCH intersection. Continued vehicular improvements will offset any traffic growth with a slight decline in future localized CO exposures. By 2005, the possible one-hour CO "hot spot" at Sunset Boulevard/PCH intersection will have dissipated.

The project-related CO increment is 0.1 ppm or less. Hourly CO levels are reportable to the nearest whole part-per-million. The SCAQMD CEQA Handbook defines a +1.0 ppm CO increase as a "substantial" contribution. Project impacts are ten percent or less of a substantial addition to localized exposures. The project traffic contribution to local CO exposures is less than significant.

## CUMULATIVE IMPACTS

As mentioned previously, in order to analyze microscale air quality patterns in the project vicinity, an air pollution screening model was run for four intersections in the project vicinity where traffic forecasts/turning movements have been predicted for existing (2002) and near-term cumulative future (2005; without and with-project) traffic. The results of the microscale air quality impact analysis relative to the California one-hour CO standard of 20 ppm are in Table IV.C-6.

A one-hour CO "hot spot" may presently exist at the Sunset/PCH intersection. Continued vehicular improvements will offset any traffic growth with a slight decline in future localized CO exposures. By 2005, the possible one-hour CO "hot spot" will have dissipated.

The cumulative future CO increment is 0.1 ppm or less. Hourly CO levels are reportable to the nearest whole part-per-million. The SCAQMD CEQA Handbook defines a +1.0 ppm CO increase as a "substantial" contribution. Project cumulative impacts are ten percent or less of a substantial addition to localized exposures, and therefore are not significant.

## MITIGATION MEASURES

The following mitigation measures are recommended during demolition, grading and construction of the proposed project:

1. Conduct pre-construction assessments for ACMs. Prior to the issuance of the demolition permit, the applicant shall provide a letter to the Department of Building and Safety from a qualified asbestos abatement consultant that no ACMs are present in the building. If ACMs are found to be present, they will need to be abated in compliance with the South Coast Air Quality Management District's Rule 1403 as well as all other state and federal rules and regulations.

2. All unpaved demolition and construction areas shall be wetted at least twice daily during excavation and construction, and temporary dust covers shall be used to reduce dust emissions and meet SCAQMD District Rule 403. Wetting could reduce fugitive dust by as much as 50 percent.

3. All materials transported off site shall be securely covered to prevent excessive amounts of dust.

4. All clearing, grading, earth moving, or excavation activities shall be discontinued during periods of high winds (i.e., greater than 15 mph), so as to prevent excessive amounts of dust.

5. General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions.

6. Cover any on-site stockpiles of debris, dirt or other dusty material.

7. Actively stabilize any cleared area that is planned to remain inactive for more than 30 days after clearing is completed.

8. Establish an on-site 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.

9. Encourage car-pooling for construction workers.

10. Sweep access points daily.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

With adoption of the mitigation measures recommended above, potentially significant air quality impacts would be reduced to less than significant levels.