4.2 AIR QUALITY

This section analyzes the proposed ordinance revisions' temporary and long-term impacts to local and regional air quality. Greenhouse gas emissions are discussed in Section 4.6, *Greenhouse Gas Emissions*.

4.2.1 Setting

a. Climate and Meteorology. The semi-permanent high pressure system west of the Pacific coast strongly influences California's weather. The Mediterranean climate of the region and the coastal influence produce moderate temperatures year round, with rainfall concentrated in the winter months. The sea breeze, which is the predominant wind, is a primary factor in creating this climate and typically flows from the west-southwest in a day-night cycle with speeds generally ranging from 5 to 15 miles per hour. The sea breeze maintains the cool temperatures and clean air circulation and generally prevents warmer inland temperatures and air pollution from permeating into the peninsula, except under certain seasonal conditions such as the offshore Santa Ana winds (City of Rancho Palos General Plan, 1975).

Two types of temperature inversions (warmer air on top of colder air) are created in the area: subsidence and radiational (surface). The subsidence inversion is a regional effect created by the Pacific high in which air is heated as it is compressed when it flows from the high pressure area to the low pressure areas inland. This type of inversion generally forms at about 1,000 to 2,000 feet and can occur throughout the year, but is most evident during the summer months. Surface inversions are formed by the more rapid cooling of air near the ground during the night, especially during winter. This type of inversion is typically lower and is generally accompanied by stable air. Both types of inversions limit the dispersal of air pollutants within the regional airshed, with the more stable the air (low wind speeds, uniform temperatures), the lower the amount of pollutant dispersion. The primary air pollutant of concern during the subsidence inversions is ozone, while the greatest pollutant problems during winter inversions are carbon monoxide and nitrogen oxides.

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.

Rancho Palos Verdes is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD is required to monitor air pollutant levels to ensure that air quality standards are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the local air basin is classified as being in "attainment" or "non-attainment." The Basin, in which the project area is located, is a non-attainment area for both the federal and state standards for ozone and PM_{10}. The Basin is in attainment for the state and

federal standards for nitrogen dioxide, and for carbon monoxide. Characteristics of ozone, carbon monoxide, nitrogen dioxide, and suspended particulates are described below.

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) 0.030 ppm (annual avg)
Sulfur Dioxide	0.5 ppm (3-hr avg) 0.075 ppm (1-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	1.5 $\mu g/m^3$ (calendar quarter)	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, September 2010.

Ozone. Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_x) and reactive organic gases (ROG). NO_x is 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 substantial concentrations 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. CO is a local pollutant that is found in high concentrations only near a source of carbon monoxide. The major source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. CO's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulty in people with chronic diseases, reduced lung capacity and impaired mental abilities.

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.

NO_2 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. Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are PM_{10} (which measures no more than 10 microns in diameter) and $PM_{2.5}$, (a fine particulate measuring no more than 2.5 microns in diameter). The characteristics, sources, and potential health effects associated with the small particulates (those between 2.5 and 10 microns in diameter) and $PM_{2.5}$ can be different. Major man-made sources of PM_{10} are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include wind blown dust, wildfire smoke, and sea spray salt. The finer, $PM_{2.5}$ particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. $PM_{2.5}$ is more likely to penetrate deeply into the lungs and poses a serious 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, which can cause permanent lung damage. 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.

c. Current Air Quality. The air quality monitoring station located nearest to the project area is the North Long Beach Monitoring Station, approximately 13 miles northeast of the project site. Ambient air quality obtained from this station characterizes the air quality representative of the ambient air quality in the project area.

Table 4.2-2 on the following page indicates the number of days that each of the standards has been exceeded at the closest monitoring station. As shown, the ozone concentration exceeded state standard one time in 2007, and did not exceed the state standard in 2008 and 2009. The PM_{10} concentration exceeded the federal standards once in 2007 and did not exceed federal standards in 2008 or 2009. The $PM_{2.5}$ concentration exceeded federal standards on 12 days in 2007, 8 days in 2008, and 6 days in 2009. No exceedances of either the state or federal standards for NO_2 or CO have occurred at the North Long Beach Monitoring Station in the last three years.

d. 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. The SCAQMD updates the plan every three years. Each iteration of the SCAQMD's Air Quality Management Plan (AQMP) is an update of the previous plan and has a 20-year horizon. The plan was last updated in 2007. The 2007 AQMP incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2003 AQMP. The SCAQMD adopted the 2007 AQMP on June 1, 2007. It was updated March 4, 2011 to include revisions to $PM_{2.5}$ and Ozone State Implementation Plan for the Basin. The 2007 AQMP incorporates the revisions made in 2011.

Table 4.2-2
Ambient Air Quality Data

Pollutant	2007	2008	2009
Ozone, ppm - Worst Hour	0.099	0.093	0.089
Number of days of State exceedances (>0.09 ppm)	1	0	0
Number of days of Federal exceedances (>0.12 ppm)	0	0	0
Carbon Monoxide, ppm - Worst 8 Hours	2.59	2.49	2.17
Number of days of State/Federal exceedances (>9.0 ppm)	0	0	0
Nitrogen Dioxide, ppm - Worst Hour	0.107	0.125	0.111
Number of days of State exceedances (>0.25 ppm)	0	0	0
Particulate Matter <10 microns, $\mu g/m^3$ Worst 24 Hours [1]	232	62	62
Number of samples of State exceedances (>50 $\mu g/m^3$)	6	1	3
Number of samples of Federal exceedances (>150 $\mu g/m^3$)	1	0	0
Particulate Matter <2.5 microns, $\mu g/m^3$ Worst 24 Hours[1]	82.8	57.2	63
Number of samples of Federal exceedances (>35 $\mu g/m^3$)	12	8	6

North Long Beach Monitoring Station
Source: CARB, 2007, 2008, 2009 Annual Air Quality Data Summaries available at http://www.arb.ca.gov

The 2007 AQMP was prepared to ensure continued progress towards clean air and comply with state and federal requirements. This AQMP builds upon the approaches taken in the 2003 AQMP for the South Coast Air Basin for the attainment of the federal ozone air quality standard. This AQMP highlights the significant amount of reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the Clean Air Act. New standards allow for a longer compliance schedule for federal fine particulates and 8-hour ozone but with more stringent PM_{10} and 1-hour ozone standards. The 2007 AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standards through a more focused control of sulfur oxides (SOx), directly-emitted $PM_{2.5}$, and nitrogen oxides (NOx) supplemented with volatile organic compounds (VOC) by 2015. The 8-hour ozone control strategy builds upon the $PM_{2.5}$ strategy, augmented with additional NOx and VOC reductions to meet the standard by 2024 assuming a bump-up is obtained. Further, the 2007 AQMP aims to reduce mobile source emissions by discussing measures that would address the remaining air quality standard exceedances in the region. The 2007 AQMP is incorporated by reference and available to download at http://www.aqmd.gov/aqmp/07aqmp/index.html.

e. Sensitive Receptors in the Project Area. Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65;

persons engaged in strenuous work or exercise; and acutely ill and chronically ill persons, especially those with cardio-respiratory diseases. The majority of sensitive receptor locations are therefore residences, schools, and hospitals. Sensitive receptors in the project area are single family residences adjacent to those lots that would be potentially be developed under the proposed project, and the Portuguese Bend Riding Club, a private recreational facility. Although the distances to neighboring residences vary from lot to lot, for the purposes of this EIR analysis, using a conservative estimate it is assumed that sensitive receptors would be approximately 50 feet from the location of grading and construction activities at any of the 47 undeveloped and underdeveloped lots in Zone 2.

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 development that could be facilitated by the proposed ordinance revisions were calculated using the CalEEMOD computer model developed for the SCAQMD by estimating the types and number of pieces of equipment that would be used onsite during each of the construction phases. 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 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 CalEEMOD computer model developed for the SCAQMD and the information provided in the traffic study prepared by LLG Engineers (April 2011). Operational emissions would be comprised of mobile source emissions, energy 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. Emissions attributed to energy use include electricity and natural gas consumption for space and water heating. Area source emissions are generated by landscape maintenance equipment, consumer products and architectural coating. 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.

As discussed in the Initial Study prepared for the proposed project (see Appendix A), onsite development would not generate objectionable odors that would affect a substantial number of people. No industrial, agricultural or other uses typically associated with objectionable odors are proposed. 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.

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.

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, 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

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 μg/m^3 (recommended for construction) [b] & 2.5 μg/m^3 (operation) 1.0 μg/m^3 20 μg/m^3
PM2.5 24-hour average	10.4 μg/m^3 (recommended for construction) [b] & 2.5 μg/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

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 Feet	164 Feet	328 Feet	656 Feet	1,640 Feet
Gradual conversion of NO_x to NO_2	197	189	202	222	277
CO	1,796	1,984	2,608	4,119	9,852
PM_{10}	15	46	60	88	171
$PM_{2.5}$	8	11	19	35	96

Source: http://www.aqmd.gov/CEQA/handbook/LST/appC.pdf, accessed online April 2011.

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 area is located in Source Receptor Area 3 (SRA-3). For the purposes of this EIR, it is assumed that construction activity for multiple projects occurring simultaneously in Zone 2 would not disturb more than a combined 5-acre area at any one given 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.

b. Project Impacts and Mitigation Measures.

Impact AQ-1 **Onsite construction activity would generate air pollutant emissions that would not exceed SCAQMD construction thresholds for ROC, NO_x, CO, PM_{10} and $PM_{2.5}$. However, construction-related emissions would exceed SCAQMD LSTs for PM_{10} and $PM_{2.5}$. With implementation of mitigation, temporary construction impacts would be Class II, *significant but mitigable*.**

Construction emissions estimates were generated for onsite development using CalEEMod software. The model considers six construction phases: 1) demolition; 2) site preparation; 3) grading; 4) building construction; 5) paving; and 6) architectural coating. For the purposes of this analysis it was assumed that total grading would be approximately 47,000 cubic yards (approximately 1,000 cubic yards per lot) and the maximum amount of imported soil would be approximately 2,350 cubic yards (or 50 cubic yards per lot). CalEEMod default scheduling for construction phases were used and it was assumed that all 47 lots would be developed by the year 2015, i.e. over a span of approximately four years. This is a conservative scenario assumption, since individual lots would be developed independently and thus construction

schedules would likely occur over a longer period. Construction equipment would include tractors, loaders, backhoes, dozers, and saws (See Appendix B for the construction equipment mixes). Table 4.2-5 shows estimated daily emissions during demolition (Phase I), site preparation (Phase II), grading (Phase III), building construction (Phase IV), paving (Phase V), and architectural coating (Phase VI).

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

	Emissions (lbs/day)				
	ROG	**NOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Phase I Demolition	9.46	75.31	45.5	4.18	3.82
Phase II Site Preparation	10.56	84.85	49.35	22.63	14.22
Phase III Grading	8.54	70.7	39.09	16.68	6.70
Phase IV Building Construction	5.84	38.42	25.79	2.89	2.60
Phase V Paving	4.98	30.18	21.53	2.78	2.56
Phase VI Architectural Coating	27.14	2.59	2.1	0.27	0.22
Maximum lbs/day [e]	**27.14**	**84.85**	**49.35**	**22.63**	**14.22**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**
Local Significance Thresholds [f] (LSTs)	*n/a*	*197*	*1,796*	*15*	*8*
Threshold Exceeded?	**n/a**	**No**	**No**	**Yes**	**Yes**

Source: SCAQMD LST Spreadsheet for a 5-acre site and CalEEMod; see Appendix B for calculations. .
[e] Maximum daily emissions based on highest in either construction year 1, 2 ,3 or 4.
[f] LSTs are for a five-acre project in SRA-3 within a distance of 82 feet from the site boundary

ROG would be emitted primarily during the architectural coating phase, which would last approximately two months. NOx would be emitted primarily during the site preparation phase, which would last approximately one month. Particulate matter emissions would be emitted primarily during the site preparation phase and during the grading phase. As shown in Table 4.2-5, emissions of ROG, NO_x, CO, PM_{10} and $PM_{2.5}$ would be below the SCAQMD construction thresholds.

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 the existing single family residences neighboring the various lots in Zone 2. As indicated in Table 4.2-5, emissions generated by temporary construction activities would be below LST thresholds for ROG, 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 related to construction emissions would be significant. Emissions of particulate matter would occur primarily during grading activities.

Mitigation Measures. As described above, this EIR analysis assumes that all 47 lots would be developed by the year 2015. This is a conservative scenario assumption since individual lots would be developed independently and thus construction schedules would likely occur over a longer period. Nevertheless, air pollutant emissions generated during the site preparation phase of construction in this conservative scenario would exceed the LST for PM_{10}, and would exceed the LST for $PM_{2.5}$. City code Section 17.56.020 requires that "All grading, landscaping and construction activities shall exercise effective dust control techniques, either through screening and/or watering. It is unlawful to cause or allow airborne dust or particles to leave a property and settle on, or otherwise impact in any way, surrounding properties." The following mitigation measures, which is consistent with City code Section 17.56.020, is required to reduce particulate matter emissions associated with site preparation and grading activities. These measures are also consistent with SCAQMD Rule 403, which identifies measures to reduce fugitive dust.

AQ-1(a) **Fugitive Dust Control Measures.** The following shall be implemented during construction to minimize fugitive dust emissions:

- *Soil with 5% or greater silt content that is stockpiled for more than two days must be covered and treated with soil binders to prevent dust generation.*
- *Trucks transporting material must be tarped from the point of origin or must maintain at least two feet of freeboard.*
- *Soil stabilizers must be applied to unpaved roads to prevent excess amounts of dust.*
- *All material excavated or graded must be treated with soil binders preferably in the morning, midday and after work is done for the day.*
- *Ground cover must be replaced in disturbed areas as quickly as possible.*
- *All clearing, grading, earth moving, or excavation activities must cease during periods of high winds (i.e., greater than 20 mph averaged over one hour) so as to prevent excessive amounts of dust.*
- *The contractor must provide adequate loading/unloading areas that limit track-out onto adjacent roadways through the utilization of wheel washing, rumble plates, or another method achieving the same intent.*
- *All material transported off-site must be securely covered to prevent excessive amounts of dust.*
- *Face masks must be used by all employees involved in grading or excavation operations during dry periods to reduce inhalation of dust which may contain the fungus which causes San Joaquin Valley Fever.*
- *All residential units located within 500 feet of the construction site must be sent a notice regarding the construction schedule of the proposed project. A sign legible at a distance of 50 feet must also be posted in a prominent and visible location at the construction site, and must be maintained throughout the construction process. All notices and the signs must indicate the dates and duration of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints.*

- *Visible dust beyond the property line emanating from the project must be prevented to the maximum extent feasible.*
- *These control techniques must be indicated in project specifications. Compliance with the measure shall be subject to periodic site inspections by the City.*

AQ-1(b) **Construction Vehicles.** Trucks and other construction vehicles shall not park, queue and/or idle at the project sites or in the adjoining public or private rights-of-way before 7:00 am, Monday through Saturday, in accordance with the permitted hours of construction state in Section 17.56.020.B of the Rancho Palos Verdes Municipal Code.

Significance After Mitigation. Implementation of mitigation measures AQ-1(a) and AQ-1(b) would reduce particulate matter emissions during the site preparation and grading phase. Table 4.2-6 shows the estimated mitigated maximum emissions during the construction phase with implementation of mitigation measure AQ-1(a) and AQ-1(b).

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

	Emissions (lbs/day)				
	ROG	**NOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Phase I Demolition	9.46	75.31	45.5	4.18	3.82
Phase II Site Preparation	10.56	84.85	49.35	11.22	7.97
Phase III Grading	8.54	70.7	39.09	12.05	4.62
Phase IV Building Construction	5.84	38.42	25.79	2.89	2.60
Phase V Paving	4.98	30.18	21.53	2.78	2.56
Phase VI Architectural Coating	27.14	2.59	2.1	0.27	0.22
Maximum lbs/day [e]	**27.14**	**84.85**	**49.35**	**12.05**	**7.97**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**
Local Significance Thresholds [f] (LSTs)	*n/a*	*197*	*1,796*	*15*	*8*
Threshold Exceeded?	**n/a**	**No**	**No**	**No**	**No**

Source: SCAQMD LST Spreadsheet for a 5-acre site and CalEEMod; see Appendix B for calculations. .
[e] Maximum daily emissions based on highest in either construction year 1, 2 ,3 or 4.
[f] LSTs are for a five-acre project in SRA-3 within a distance of 82 feet from the site boundary

As shown in Table 4.2-6, PM_{10} and $PM_{2.5}$ emissions would be successfully mitigated below their respective LSTs. It should be noted that although the model indicates $PM_{2.5}$ emissions that are only .03 below the LST threshold for that pollutant, a determination of less than significant is considered reliable due to the conservative assumptions used in the modeling (e.g. buildout of

all 47 lots within four years of ordinance adoption). Therefore, with mitigation, impacts would be less than significant.

Impact AQ-2 Operation of new residences that could be built as a result of the proposed ordinance revisions would generate air pollutant emissions. However, emissions would not exceed SCAQMD operational significance thresholds for ROG, NO_X, CO, PM_{10} and $PM_{2.5}$. Therefore, operational air quality impacts would be Class III, *less than significant*.

Long-term emissions associated with onsite development, as presented in Table 4.2-7, would include those emissions associated with vehicle trips (mobile emissions), natural gas and electricity use (energy use), and landscape maintenance equipment, consumer products and architectural coating (area emissions) associated with onsite development.

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

Emission Source	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Mobile	9.26	0.28	19.56	2.51	2.51
Energy	0.06	0.50	0.21	0.04	0.04
Area	2.65	6.53	26.34	5.53	0.49
Total Emissions	**11.97**	**7.31**	**46.11**	**8.08**	**3.04**
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*55*
Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***

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

The CalEEMod model was used to calculate emissions associated with potential development based on the land uses that would be allowed and the number of trips generated by the new development. Trip generation rates were taken from the EIR traffic study prepared by LLG (see Appendix G). As shown in Table 4.2-7, operational emissions would not exceed any SCAQMD threshold. Therefore, impacts would be less than significant.

Mitigation Measures. Operational emissions associated with each of the alternatives would not exceed SCAQMD thresholds. No mitigation measures are necessary.

Significance After Mitigation. Impacts would be less than significant without mitigation.

Impact AQ-3 Traffic that could be generated by new residences constructed as a result of adoption of the proposed ordinance revisions, together with cumulative traffic growth in the area, would not create carbon monoxide concentrations exceeding state or federal standards. Localized air quality impacts would therefore be Class III, *less than significant.*

The SCAQMD defines typical sensitive receptors as residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. As stated above in the Setting, sensitive receptors in Zone 2 would include residents that live adjacent to the 47 undeveloped or underdeveloped lots in Zone 2. When evaluating potential air quality impacts to sensitive receptors, the SCAQMD is primarily concerned with high localized concentrations of CO. Motor vehicles, and traffic-congested roadways and intersections are the primary source of high localized CO concentrations. Localized areas where ambient concentrations exceed federal and/or State standards for CO are termed CO "hotspots." CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (i.e., adversely affecting residents, school children, hospital patients, the elderly, etc.).

The Basin is in attainment of State and federal CO standards and has been for several years. Exhaust standards, cleaner burning fuels, and motor vehicle inspection and maintenance programs have all contributed to the reduced per-vehicle CO emissions. At the North Long Beach monitoring station, the maximum 8-hour CO level recorded since 2007 was 2.59 parts per million (ppm), 72% lower than the 9 ppm state and federal 8-hour standard.

Although CO is not expected to be a major air quality concern in Rancho Palos Verdes over the planning horizon, elevated CO levels can occur at or near intersections that experience severe traffic congestion. A project's localized air quality impact is considered significant if the additional CO emissions resulting from the project create a "hotspot" where the California 1-hour standards of 20.0 ppm or the 8-hour standard of 9 ppm is exceeded. This typically occurs at severely congested intersections. Screening for possible elevated CO levels should be conducted for severely congested intersections that experience levels of service (LOS) E or F with project traffic where a significant project traffic impact may occur. The SCAQMD recommends a quantified assessment of CO hotspots when a project increases the volume to capacity ratio (also called the intersection capacity utilization) by 0.02 (2%) for any intersection with an existing LOS D or worse.

As shown in Table 4.10-3, three of the seven intersections analyzed in the Traffic Study prepared by LLG (April 2011) including the Via Rivera/Hawthorne Boulevard intersection, Tramonto Drive-Seahill Drive/Palos Verdes Drive South intersection and the Forrestal Drive/Palos Verdes Drive south intersection currently operate at LOS D or E. However, as shown in Table 4.10-8, the change in volume to capacity ratio as a result of the project would be less than 0.02 at each of these intersections. Since the change in volume to capacity ratio as a result of the proposed project would not increase by 0.02 at any of the intersections that currently operate at LOS D or worse, CO hotspot impacts would be less than significant.

Mitigation Measures. Impacts would be less than significant; therefore, no mitigation measures are required.

Significance after Mitigation. Impacts would be less than significant without mitigation.

Impact AQ-4 Adoption of the proposed ordinance revisions would have the potential to generate population growth, but such growth would be within the population projections upon which the Air Quality Management Plan (AQMP) are based. Therefore, impacts associated with AQMP consistency for the project would be Class III, *less than significant*.

A significant impact to air quality would occur if the proposed project would conflict with or obstruct implementation of the AQMP for the South Coast Air Basin. Although any development project would represent an incremental adverse impact on air quality in the basin, of primary concern is that project-related impacts have been properly anticipated in the regional air quality planning process and reduced whenever feasible.

According to the SCAQMD Handbook, the purpose of the consistency finding is to determine whether a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus whether it would interfere with the region's ability to comply with Federal and State air quality standards. If a project is inconsistent, local governments need to consider project modifications or inclusion of mitigation to eliminate the inconsistency. Consistency with the AQMP implies that a project is consistent with the goals, objectives and assumptions in the respective plan to achieve the Federal and State air quality standards.

Per the SCAQMD Handbook, there are two main indicators of a project's consistency with the AQMP:

- *Whether the project would increase the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and*

- *Whether the project would exceed the AQMP's assumptions for 2011 or yearly increments, based on the year of project buildout and phase.*

As indicated under Impact AQ-2, emissions associated with operation of up to 47 new residences would not exceed SCAQMD thresholds; therefore, the project satisfies the first criteria for consistency with the AQMP. In addition, implementation of the proposed project would not result in the formation of CO hotspots from the increase of LOS at study intersections (see Impact AQ-3).

A project may also be inconsistent with the AQMP if it would generate population, housing or employment growth exceeding the forecasts used in the development of the AQMP. The 2007 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates in part local city general plans and SCAG's Regional Transportation Plan socioeconomic forecast projections of regional population, housing and employment growth.

According to the SCAG growth forecasts, the City of Rancho Palos Verdes will have a population of 43,251 in 2020. Development of 47 dwelling units on the project site could cause a direct increase in the City's population. Using the California State Department of Finance average household size for Rancho Palos Verdes of 2.75 persons, the 47 dwelling units would generate an average resident population of 130 persons (47 units x 2.75 persons/unit). The current City population is approximately 42,893, according to the most recent (January 1, 2010) California Department of Finance estimate. Therefore, the proposed project would result in a total population of approximately 43,023 persons (42,893 + 130). This increase in population would be within the City's projected 2020 population of 43,251. Since the project would be consistent with the City's SCAG population growth forecasts, the project would be consistent with the AQMP. Impacts would be less than significant.

Mitigation Measures. No mitigation measures are required.

Significance after Mitigation. Impacts would be less than significant without mitigation.

c. Cumulative Impacts. SCAQMD's approach to determining cumulative air quality impacts for criteria air pollutants is to first determine whether or not the proposed project would result in a significant project-level impact to regional air quality based on SCAQMD significance thresholds. If the project does not exceed SCAQMD thresholds, then the lead agency needs to consider the additive effects of related projects only if the proposed 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 proposed project site. If there are related projects within the vicinity (one-mile radius) of the proposed project site, that are part of an ongoing regulatory program or are contemplated in a Program EIR, then the additive effect of the related projects should be considered.

As the proposed project is not part of an ongoing regulatory program, the SCAQMD recommends that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality. As discussed under Impact AQ-2, the proposed project would result in an increase in daily operational emissions; however, emissions would not exceed the SCAQMD thresholds. As discussed under Impact AQ-3, project-generated traffic, together with other cumulative traffic in the area, would incrementally increase CO levels in the site vicinity. However, CO levels would not exceed state and federal standards.

Implementation of the proposed project would not result in an addition of criteria pollutants during operation of the project that would contribute to cumulative impacts in conjunction with related projects in the region. Because the proposed project would not generate emissions that exceed the SCAQMD's operational thresholds and the project is consistent with the AQMP, operation of the project would not make a cumulatively considerable contribution with regard to criteria pollutants. Therefore, the project's contribution to cumulative regional long term air quality impacts would not be cumulatively considerable.

As discussed under Impact AQ-1, construction-generated emissions would not exceed SCAQMD significance thresholds for ROC, NOx, CO, PM_{10} and $PM_{2.5}$. Construction-related emissions would exceed SCAQMD LSTs for PM_{10} and $PM_{2.5}$. Nevertheless, with

implementation of mitigation measures AQ-1(a) and AQ-1(b), temporary construction impacts would be reduced to a less than significant level. Therefore, the project's contribution to temporary cumulative regional air quality impacts would not be cumulatively considerable.