4.2 AIR QUALITY

This section analyzes the proposed ordinance revisions' short-term (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 2018).

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 is designated a nonattainment area for the federal and State one-hour and eight-hour ozone standards, the State PM_{10} standards, the federal 24-hour $PM_{2.5}$ standard, and the federal and state annual $PM_{2.5}$ standard. The Basin is in attainment of all other federal

and state standards. 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	0.070 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) 0.100 ppm (1-hr avg)	0.030 ppm (annual avg) 0.18 ppm (1-hr avg)
Sulfur Dioxide	0.03 ppm (annual avg) 0.14 ppm (24-hr avg)0.075 ppm (1-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	0.15 $\mu g/m^3$ (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 ($PM_{2.5}$)	12 $\mu g/m^3$ (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 (California ARB), http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, 2016.

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 SCAQMD operates a network of air quality monitoring stations throughout the Basin. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and determine whether ambient air quality meets the federal and California standards. The air quality monitoring station located nearest to the project area is the Long Beach Monitoring Station located at 2425 Webster Street, approximately 13 miles northeast of the project area. Ambient air quality obtained from this station characterizes the air quality representative of the ambient air quality in the project area.

Based on available information for the Long Beach Monitoring Station, Table 4.2-2 on the following page indicates the number of days that each of the standards has been exceeded in the last three years. As shown, the ozone concentration did not exceed the federal or state standards in 2015, 2016 and 2017. The NO_2 concentration exceeded the federal standard once in 2015, and did not exceed state standards in 2015, 2016 and 2017. In addition, the PM_{10} concentration exceeded the state standard six days in 2015, and did not exceed federal standard in 2015, 2016 and 2017, while the $PM_{2.5}$ concentration exceeded the federal standard three days in 2015 and four days in 2017.

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 2016 AQMP, adopted on March 3, 2017, incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2012 AQMP, including the approval of the new federal 8-hour ozone standard of 0.070 ppm that was finalized in 2015.

The 2016 AQMP addresses several federal and state planning requirements and incorporates new scientific information, primarily in the form of updated emissions inventories, ambient

measurements, and updated meteorological air quality models (SCAQMD 2017). This Plan builds upon the approaches taken in the 2012 AQMP for the attainment of federal PM and ozone standards and highlights the significant amount of reductions to be achieved. It emphasizes the need for interagency planning to identify additional strategies to achieve reductions within the timeframes allowed under the federal Clean Air Act, especially in the area of mobile sources. The 2016 AQMP also includes a discussion of emerging issues and opportunities, such as fugitive toxic particulate emissions, zero-emission mobile source control strategies, and the interacting dynamics among climate, energy, and air pollution. The Plan also includes attainment demonstrations of the new federal 8-hour ozone standard and vehicle miles travelled (VMT) emissions offsets, as per recent U.S. EPA requirements.

Table 4.2-2
Ambient Air Quality Data

Pollutant	2015	2016	2017
Ozone, ppm – 8-Hour	0.066	0.059	0.068
Number of Days of State exceedances (>0.070)	0	0	0
Number of days of Federal exceedances (>0.070)	0	0	0
Ozone, ppm – Worst Hour	0.087	0.079	0.082
Number of days of State exceedances (>0.09 ppm)	0	0	0
Number of days of Federal exceedances (>0.112 ppm)	0	0	0
Nitrogen Dioxide, ppm – Worst Hour	0.102	0.076	0.090
Number of days of State exceedances (>0.18 ppm)	0	0	0
Number of days of Federal exceedances (>0.10 ppm)	1	0	0
Particulate Matter <10 microns, $\mu g/m^3$ – Worst 24 Hours	80.0	75.0	79.3
Number of samples of State exceedances (>50 $\mu g/m^3$)	6	*	*
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[1]	54.6	29.3	55.3
Number of samples of Federal exceedances (>35 $\mu g/m^3$)	3	0	4

Source: California ARB, 2015, 2016, 2017Annual Air Quality Data Summaries for the Long Beach Monitoring Station located at 2425 Webster Street available at https://www.arb.ca.gov/adam/topfour/topfour1.php
** means there was insufficient data available to determine the value.*
[1] Data from the Long Beach Monitoring Station (2425 Webster Street) was unavailable for this criteria pollutant. Monitoring data from the North Long Beach Monitoring Station (3649 North Long Beach Boulevard) was used instead.

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 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 project's 31 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.

Project construction would generate diesel emissions and dust on a short-term basis. Construction equipment that would generate criteria air pollutants includes excavators, graders, cranes, dump trucks, and loaders. Some of this equipment would be used during grading activities, as well as during building construction. It is assumed that all construction equipment used would be diesel-powered. The project's construction and operational emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod uses project-specific information, including the project's land uses, square footages of proposed uses, and location, to estimate a project's construction and operational emissions from new development. Short-term construction emissions include emissions generated by construction equipment, such as backhoes and bulldozers operating on the project area, as well as emissions generated by off-site vehicle trips associated with construction, such as hauling trips and worker travel to and from the project area. Long-term operational emissions include mobile source emissions (i.e., vehicle emissions), energy emissions (primarily natural gas combustion), and area source emissions (emissions generated by landscape maintenance equipment, consumer products, and architectural coatings).

Temporary construction emissions estimates were modeled using CalEEMod based on development of 31 single-family residences. 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 31,000 cubic yards (approximately 1,000 cubic yards per lot) and the maximum amount of imported soil would be approximately 1,550 cubic yards (or 50 cubic yards per lot). CalEEMod default scheduling for construction phases were used and it was assumed that all 31 lots would be developed by the year 2022 (i.e., over a span of approximately four years beginning in 2019). 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).

Long-term operational emissions associated with on-site development were estimated using CalEEMod and the information provided in the Transportation Impact Study prepared by LLG

Engineers in January 2019. 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 area associated with residential 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 in 2010 (see Appendix A), on-site development of single-family residences 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 analyzed under this EIR would generate objectionable odors affecting a substantial number of people and the threshold related to objectionable odors is not further discussed.

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.

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: 0.18 ppm (state) 0.03 ppm (state) and 0.053 ppm (federal)
PM_{10} 24-hour average annual average	10.4 μg/m^3 (recommended for construction) [b] & 2.5 μg/m^3 (operation) 1.0 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	25 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) and 35 ppm (federal) 9.0 ppm (state/federal)

Source: SCAQMD, CEQA Handbook (SCAQMD, 1993), http://www.aqmd.gov/cega/hdbk.html accessed March 12, 2015
[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

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 on-site development as the majority of emissions would be generated by cars on the roadways.

LSTs have been developed for emissions within areas up to 5 acres in size, with air pollutant modeling recommended for activity within larger areas. The SCAQMD provides lookup tables for development sites that measure 1, 2, or 5 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. 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: SCAQMD, Mass Rate LST Look-Up Tables, 2009: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds#appc

Regulatory Requirements. The project would comply with all applicable regulatory standards. In particular, the project would comply with 2016 CALGreen Code, in addition to SCAQMD Rules 403 and 1113, and all other applicable provisions of the SCAQMD. Rules 403 and 1113 were added as mitigation in CalEEMod, as discussed below. CALGreen standards include indoor water usage reduction, regulation of outdoor water usage, and construction waste reduction.

The grading phase involves the greatest amount of heavy equipment and the greatest generation of fugitive dust. For the purposes of construction emissions modeling, it was assumed that the project would comply with the SCAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located within the Basin. Therefore, the following conditions, which would be required to reduce fugitive dust in compliance with SCAQMD Rule 403, were included in CalEEMod for the site preparation and grading phases of construction.

1. **Minimization of Disturbance.** Construction contractors should minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.
2. **Soil Treatment.** Construction contractors should treat all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least twice daily, preferably in the late morning and after work is done for the day.
3. **Soil Stabilization.** Construction contractors should monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area shall be seeded and watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.
4. **No Grading During High Winds.** Construction contractors should stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured continuously over a one-hour period).
5. **Street Sweeping.** Construction contractors should sweep all on-site driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

The architectural coating phase involves the greatest release of ROG. The emissions modeling for the proposed Project also includes the use of low-VOC paint (50 grams per liter (g/L) for non-flat coatings) as required by SCAQMD Rule 1113.

b. Project Impacts and Mitigation Measures.

Impact AQ-1 On-site construction activity would generate temporary air pollutant emissions. However, emissions would not exceed SCAQMD regional or LST construction thresholds for ROC, NO_x, CO, PM_{10} and $PM_{2.5}$. Therefore, construction-related air quality impacts would be Class III, ***less than significant***

Construction emissions are generally referred to as short-term (temporary) impacts of a project, but have the potential to represent a significant impact with respect to air quality. General site

grading operations are the primary sources of fugitive dust emissions. However, these emissions can vary greatly, depending on the level of activity, the specific operations taking place, the number and types of equipment operated, vehicle speeds, local soil conditions, weather conditions, and the amount of earth disturbance from site grading and excavation. Emissions of ozone precursors NO_X and ROG are primarily generated by the operation of off-road construction equipment and mobile sources such as delivery vehicles and construction worker vehicles. These emissions vary as a function of the types and number of heavy-duty, off-road equipment used and the intensity and frequency of their operation, as well as vehicle trips per day associated with delivery of construction materials, the export of soil, vendor trips, and worker commute trips. Based on the CalEEMod results for the proposed project, Table 4.2-5 summarizes the estimated maximum daily emissions of pollutants during the construction period with compliance with the requirements described above for Rules 403 and 1113, but without any additional mitigation.

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

	Emissions (lbs/day)				
	ROG	**NOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
2019 Maximum	5.3	67.9	37.3	20.7	12.2
2020 Maximum	2.2	19.5	17.4	1.3	1.1
2021 Maximum	2.0	17.8	17.1	1.1	0.9
2022 Maximum	14.3	15.9	6.8	1.0	0.8
Maximum lbs/day [a]	**14.3**	**67.9**	**37.3**	**20.7**	**12.2**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**
2019 Maximum On-site	4.7	54.5	33.4	9.4	6.1
2020 Maximum On-site	2.1	19.2	16.8	1.1	1.1
2021 Maximum On-site	1.9	17.4	16.6	1.0	0.9
2022 Maximum On-site	14.3	15.6	16.4	0.8	0.8
Maximum On-site lbs/day [a]	14.3	54.5	33.4	9.4	6.1
Local Significance Thresholds [b] (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. .
[a] Maximum daily emissions based on highest in either summer or winter.
[b] LSTs are for a five-acre project in SRA-3 within a distance of 82 feet from the site boundary

As shown in Table 4.2-5, 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 on-site construction activities, such as emissions from on-site grading, and do not apply to off-site mobile emissions. The LST thresholds for sensitive receptors 82 feet (25 meters) from the project area 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, CO, PM_{10} and $PM_{2.5}$ during all years of construction.Therefore, impacts related to construction emissions would be less than significant.

Mitigation Measures. Construction emissions would not exceed SCAQMD regional or LST thresholds; nevertheless, the following mitigation measures could be implemented to further reduce construction emissions. 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 RPVMC 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' 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' 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 construction sites or in the adjoining public or private rights-of-way before 7:00 AM Monday through Friday and before 9:00 AM on Saturday, in accordance with the permitted hours of construction stated in Section 17.56.020.B of the RPVMC.

Significance After Mitigation. Impacts would be less than significant without mitigation. The mitigation measures discussed above could be used to further reduce construction emissions.

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 residential 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 daily residential uses and operations.

CalEEMod 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 transportation 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.

Table 4.2-6
Operational Emissions Associated with On-site Development
(lbs/day)

Emission Source	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
	10.9	0.7	18.3	2.4	2.4
Energy	<0.1	0.2	0.1	<0.1	<0.1
Area	0.5	2.2	7.0	2.3	0.6
Total Emissions	**11.4**	**3.0**	**25.4**	**4.7**	**3.0**
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*55*
Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***

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

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 Section 4.2.1, *Setting*, sensitive receptors n Zone 2 would include residents that live adjacent to the 31 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 federal and state 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. Based on available CO emissions data from the Long Beach monitoring station located at 2425 Webster Avenue, the maximum 8-hour CO level last recorded in 2012was 2.57 parts per million (ppm), which was 71% lower than the 9 ppm state and federal 8-hour standard (California ARB 2017).

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. As shown in Table 4.10-3 in Section 4.10, all of the seven unsignalized intersections analyzed in the transportation study prepared by LLG Engineers (2019) currently operate at LOS D or worse during the AM, School PM, and PM peak hours. Because the project would result in significant traffic impacts at four intersections under existing plus project conditions and five intersections under Year 2030 conditions, increased CO concentrations at these intersections would be a potentially significant impact.

Mitigation Measures. As discussed under Impact T-1 in Section 4.10, Mitigation Measures T-1(a-e) would reduce congestion at affected intersections to less than significant levels. Therefore, with implementation of mitigation, CO hotspot impacts would be less than significant.

Significance after Mitigation. Impacts would be less than significant with proposed traffic mitigation.

Impact AQ-4 **Adoption of the proposed ordinance revision to allow 31 lots to be developed with single-family residences would have the potential to increase the City's population by approximately 84 persons. However, such growth would be a marginal increase above the City's existing population of 42,723 and 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 2016 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 31 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 2016 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates in part local city general plans and the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan (RTP) 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 42,200 in (SCAG 2016). Development of 31 dwelling units on the development sites could cause a direct increase in the City's population. Using the State of California Department of Finance (DOF) average household size for Rancho Palos Verdes of 2.7 persons, the 31 dwelling units would generate an average resident population of approximately 84 persons (31 units x 2.7 persons/unit). The current City population is approximately 42,723, according to the most recent (January 1, 2018) California DOF estimate (California DOF 2018). Therefore, the proposed project would result in a total population of approximately 42,807 persons (42,723 + 84). Although this population would exceed the City's projected 2020 population of 42,200, the City is currently in exceedance of the forecast by 523 persons (42,723 – 42,200). The addition of approximately 84 persons would be a 0.2 percent increase above the City's existing population and is well within the population forecast for the South Coast Air Basin. Therefore, the incremental population growth associated with the project would not hinder attainment of air quality standards and 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 generate emissions exceeding 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 radius of the proposed project area. If there are related projects within the vicinity (one-mile radius) of the proposed project area, 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.

Because 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 concentrations in the site vicinity. However, CO levels would not exceed federal or state 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 regional or LST thresholds for ROC, NOx, CO, PM_{10} and $PM_{2.5}$. Therefore, the project's contribution to cumulative regional air quality impacts would not be cumulatively considerable.