

# Appendix A-1

---

Air Quality Background

## Background

The project site is located in the South Coast Air Basin (the Basin) under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). As the local air quality management agency, the SCAQMD is required to monitor air pollutant levels to ensure that applicable air quality standards are met and, if they are not met, to develop strategies to meet the standards. In March 2017, the SCAQMD Governing Board approved the 2016 Air Quality Management Plan (AQMP) that outlines strategies to reduce pollutant levels to achieve attainment status. Depending on whether the standards are met or exceeded, the Basin is classified as being in “attainment” or “nonattainment.” The Basin is currently in nonattainment for ozone and PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS) standards. Also, the SCAB is in nonattainment for the California Ambient Air Quality Standards (CAAQS) standard for ozone, particulate matter (PM)<sub>10</sub>, and PM<sub>2.5</sub>. Areas of the SCAB located in Los Angeles County are also in nonattainment for lead. The SCAB is designated unclassifiable or in attainment for all other federal and state standards (California Air Resources Board [CARB] 2022).<sup>1</sup> The health and environmental effects associated with criteria pollutants for which the Basin is in nonattainment can be found in SCAQMD’s 2016 AQMP, are described generally in Table A-1.1 (SCAQMD 2017).<sup>2</sup>

**Table A-1.1 Health Effects Associated with Nonattainment Criteria Pollutants**

Pollutant	Adverse Effects
Ozone	Irritation of lungs and breathing passages; cause of coughing and pain the chest and throat, increasing susceptibility to respiratory infections; may lead to scarring of lung tissues and lower lung efficiency
Suspended particulate matter (PM <sub>10</sub> and PM <sub>2.5</sub> )	(a) Worsening of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Decline in pulmonary function or growth in children; (c) Increased risk of premature death; (d) Increased risk of lung cancer; (e) Increased asthma-related hospital admissions; (f) Increased school absences and lost workdays; (g) Possible link to reproductive defects; (h) visibility reduction.

Notes: Adapted language from the SCAQMD AQMP  
Source: SCAQMD 2017

## Methodology and Thresholds

Project construction would generate short-term emissions and project operation would generate long-term emissions. Construction and operational emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 . Based on information provided by the project applicant, emissions were modeled assuming the following:

- Construction start date: January 1, 2024
- Total duration of construction: 14 months
  - Default CalEEMod estimate based on the proposed land use
- The project would require 172 cubic yards (cy) of cut soil that would be distributed throughout the 21.14-acre parcel

<sup>1</sup> CARB. 2022. Map of State and Federal Area Designation. Accessed November 2022 at: <https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations>.

<sup>2</sup> SCAQMD. 2017. 2016 AQMP. Accessed November 2022 at: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf>.

- No off-site haul trips during grading activities as all graded material would be reused or spread on-site.

Construction activities facilitated by the proposed project would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes excavators, graders, dump trucks, and tractors. Some of these pieces of equipment would be used during grading activities, as well as when structures are constructed. It is assumed that all construction equipment would be diesel-powered. The construction emissions associated with development of the proposed project were calculated by estimating the types and number of pieces of equipment that would be used on-site during each of the construction phases. Construction emissions are analyzed using the regional thresholds established by the SCAQMD and published in the *CEQA Air Quality Handbook*.

Operational emissions associated with development were also estimated using CalEEMod. Operational emissions include 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 on-site 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 significant regional air quality impact would occur, the increase in emissions was compared to the SCAQMD's recommended regional thresholds for operational emissions. The SCAQMD has adopted the following thresholds for temporary construction-related pollutant emissions (SCAQMD 2019):<sup>3</sup>

- 75 pounds per day reactive organic compounds (ROC)
- 100 pounds per day NO<sub>x</sub>
- 550 pounds per day carbon monoxide (CO)
- 150 pounds per day sulfur oxides (SO<sub>x</sub>)
- 150 pounds per day PM<sub>10</sub>
- 55 pounds per day PM<sub>2.5</sub>

The SCAQMD has adopted the following thresholds for operational pollutant emissions:

- 55 pounds per day ROC
- 55 pounds per day NO<sub>x</sub>
- 550 pounds per day CO
- 150 pounds per day SO<sub>x</sub>
- 150 pounds per day PM<sub>10</sub>
- 55 pounds per day PM<sub>2.5</sub>

The SCAQMD has also developed Localized Significance Thresholds (LSTs) 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, and distance to the sensitive receptor. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation. LSTs have been

---

<sup>3</sup> SCAQMD. 2019. Air Quality Significance Thresholds. Accessed November 2022 at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>.

developed for nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), PM<sub>10</sub> and PM<sub>2.5</sub>. LSTs do not apply to mobile sources, such as vehicles on a roadway (SCAQMD 2008).<sup>4</sup> As such, LSTs for operational emissions do not apply to on-site development as the majority of emissions would be generated by vehicles on the roadways.

LSTs have been developed for emissions in areas up to five acres in size, with air pollutant modeling recommended for activity in larger areas. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project involves a project footprint of approximately 2.9 acres, though situated on an approximately 21-acre site. LSTs for a two-acre project site were used to provide a conservative estimate (allowable emissions increase with larger project site sizes). Because the project site is in SRA 3, LSTs for construction in SRA 3 are shown in Table A-1.2. SCAQMD provides LSTs for receptors at a distance of 82 to 1,640 feet (25 to 100 meters) from the project site boundary (SCAQMD 2009).<sup>5</sup> The nearest single-family residences are located approximately 430 feet (131 meters) northeast of the project site. LSTs for receptors located 100 meters from the project boundary were used for a more conservative estimate.

**Table A-1.2 SCAQMD LSTs for Construction**

Pollutant	Allowable emissions from a two-acre site in SRA-3 for a receptor at a distance of 100 meters
Gradual conversion of NO <sub>x</sub> to NO <sub>2</sub>	130
CO	1,597
PM <sub>10</sub>	37
PM <sub>2.5</sub>	12

Source: SCAQMD 2009

<sup>4</sup> SCAQMD. 2008. Final Localized Significance Threshold Methodology. Accessed November 2022 at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2>.

<sup>5</sup> SCAQMD. 2009. Appendix C – Mass Rate LST Look-up Tables. Accessed November 2022 at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2>.