3.2 Air Quality

This section evaluates the potential long-term effects of the No Build Alternative and the Build Alternative on air quality, as detailed in **Appendix F** (Air Quality Impacts Report). Short-term construction effects are discussed in **Section 3.17** (Construction).

The assessment of reasonably foreseeable effects in this section is based upon the geographic and temporal proximity parameters detailed in **Chapter 3.0** (Introduction).

3.2.1 Affected Environment

The Study Area for this analysis is the 0.5-mile to 2-mile radius from the guideway centerline, as described in **Section 3.1.1** (Study Area) with a focus on the area within 0.25 mile of the alignment and 0.5 mile of the stations where changes in transit mode and vehicle circulation would be most likely to occur. The Study Area is located within the South Coast Air Basin. A variety of air pollution sources, including existing vehicular traffic within the Study Area, contribute to regional air quality in the South Coast Air Basin, which is designated as a federal nonattainment area for ozone, fine particulate matter of 2.5 microns in diameter and smaller, and lead and is designated as a federal maintenance area for carbon monoxide and fine particulate matter of 10 microns in diameter and smaller.

Air quality regulations applicable to the Project are summarized in **Appendix S** (Regulatory Setting Summary) and detailed in **Appendix F**.

Operational emissions were quantified so that the Build Alternative's 2050 reasonably foreseeable benefits or effects could be evaluated against those of the 2050 No Build Alternative. Emissions can be compared to regional criteria air pollutant thresholds, established by the South Coast Air Quality Management District (SCAQMD), the regional entity with delegated authority of air quality for the South Coast Air Basin. The SCAQMD has established regional daily emission levels for various criteria pollutants. Project emission levels below these thresholds would not be expected to cause a new violation or exacerbate an existing violation of the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) within the region.

The NAAQS are defined under the Clean Air Act (42 United States Code [USC] Section 7409) as ambient levels of criteria pollutants. The NAAQS are developed to be protective of both the general public and of sensitive subpopulations such as children, the elderly, and individuals with chronic respiratory problems who may be more sensitive to the health impacts of air pollutants. The SCAQMD defines sensitive receptors as those locations where a member of a sensitive subpopulation may be present for up to 24 hours. Within the Study Area, sensitive receptors include residences, hospitals, and convalescent facilities.

Regional traffic emissions were calculated from projected vehicle miles traveled for existing conditions, 2050 Build Alternative conditions, and the 2050 No Build Alternative using the California Emission Factor Model for On-road Motor Vehicles (EMFAC) version 2021 incorporating United States Environmental Protection Agency approved November 21, 2025 off-model adjustment factors for the EMFAC2021 model. These factors removed the emission benefits of the California's Advanced Clean Trucks, Zero-Emission Airport Shuttle, Heavy-Duty Vehicle and Engine Emission Warranty and Maintenance Provisions Phase 1, and Heavy-Duty Omnibus regulations. The factors were applied to EMFAC2021 model outputs and incorporated in all results used in this analysis. Model parameters are discussed in Section 4.1, Methodology – Operations, in **Appendix F**.

EMFAC was also used to estimate parking-related evaporative emissions from vehicles. Emissions from powering the electric light rail transit vehicles or lighting the proposed stations were not assumed to occur locally and therefore, were not estimated. Emissions for operation of the MSF were estimated using default parameters in the California Emission Estimator Model (CalEEMod).

FTA must find that a transit project in a nonattainment or maintenance area meets the project-level conformity requirements before FTA can make a grant for any element of that project's implementation. In order to conform, a transit project must come from a currently conforming Regional Transportation Plan and Federal Transportation Improvement Program, must not cause or contribute to any air quality hot-spots, and must follow any other requirements in the state implementation plan for air quality that pertain to the project. For the Build Alternative, traffic volumes at major intersections represent the only emission source which would require the evaluation of carbon monoxide (CO) hot-spots. Traffic volumes at Build Alternative intersections are based on detailed traffic modeling conducted for the transportation analysis as discussed in **Appendix O** (Transportation Impacts Report). Methods for evaluating CO hot-spots are provided in **Appendix F**. Projects requiring hot-spot analyses for particulate matter of 2.5 microns in diameter and smaller ($PM_{2.5}$) or particulate matter of 10 microns in diameter and smaller (PM_{10}) generally include major new or expanded transit centers or stations where a large number of diesel-powered transit vehicles will congregate. The Project (including the No Build Alternative and Build Alternative) does not include diesel-powered transit vehicles.

Emissions from construction of the Build Alternative are addressed in **Table 3.17-2** of **Section 3.17** and **Appendix F**.

Vehicular traffic, commercial operations, and industrial operations contribute to regional air quality in the South Coast Air Basin. Air quality data from monitoring stations near the Study Area show that maximum 1- and 8-hour concentrations of carbon monoxide in the Study Area from 2021 through 2023 were 1.8 and 1.5 parts per million by volume, respectively; these concentrations are well below the NAAQS thresholds of 35 and 9 parts per million by volume, respectively.

This study evaluated CO hot-spots for the highest volume intersections in the Study Area. Under existing conditions, the highest peak hour-volume intersections within the Study Area would be the following:

- Multiway intersection of Atlantic Boulevard, Triggs Street, Goodrich Boulevard, Telegraph Road, and Ferguson Drive with 4,243 vehicles in the peak hour; and
- Multiway intersection of Woods Avenue, Beverly Boulevard, 3rd Street, and Pomona Boulevard with 4,150 vehicles in the peak hour.

This study compiled emission inventories for the existing conditions baseline year and identified potential Project-related operational emission sources including regional traffic, operation of light rail vehicles, operation of light rail vehicle stations, evaporation of volatile organic compounds from parked vehicle fuel tanks at light rail vehicle stations, operation of the MSF, and operation of any bus routes. **Table 3.2-1** shows the total regional operating emissions which would be associated with Project-related sources under existing conditions.

Table 3.2-1 Existing Conditions – Regional Total Operational Emissions (Pounds per Day)

Emission Source	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Regional Traffic	112,421	1,490,131	179,699	3,536	364,202	94,110
Total	112,421	1,490,131	179,699	3,536	364,202	94,110

Source: CDM Smith/AECOM JV 2026.

Key: VOC = volatile organic compounds; CO = carbon monoxide; NOx = nitrogen oxides; SO_2=sulfur dioxide; PM_{10} = Particulate Matter of 10 Microns in Diameter and Smaller; $PM_{2.5}$ = Particulate Matter of 2.5 Microns in Diameter and Smaller

3.2.2 No Build Alternative

The No Build Alternative, as described in **Section 2.2** of the EA, would include already planned and funded roadway and transit projects but would not provide a rail transit option for communities in eastern Los Angeles County.

Peak hour traffic volumes under the No Build Alternative at the two highest-volume intersections would increase from 4,150 to 4,469 and from 4,243 to 4,442 between 2025 and 2050, a 7.7 percent and 4.7 percent increase, respectively. The EMFAC2021 model including the November 2025 off-model adjustment factors provides regional vehicle aggregate CO running exhaust emission rates of 1.32 grams per mile and 0.85 grams per mile in 2025 and 2050, respectively. This 35.7 percent reduction in emission factors is driven by changes to the fleet mix and the gradual phase-in of Federal and Environmental Protection Agency-approved California vehicle regulations. Since the percent reduction in emission rates between current conditions and the No Build Alternative is greater than the percent increase to peak traffic volumes over the same period, there would be no potential for the No Build Alternative to generate a CO hot-spot.

The operational emissions associated with the No Build Alternative would come from regional traffic, which is summarized in **Table 3.2-2**.

Table 3.2-2 No Build Alternative – Regional Total Operational Emissions (Pounds per Day) (2050)

Emission Source	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Regional Traffic	73,292	1,081,888	158,988	3,315	411,588	105,659
Total	73,292	1,081,888	158,988	3,315	411,588	105,659

Source: CDM Smith/AECOM JV 2026.

Key: VOC = volatile organic compounds; CO = carbon monoxide; NOx = nitrogen oxides; SO_2=sulfur dioxide; PM_{10} = Particulate Matter of 10 Microns in Diameter and Smaller; $PM_{2.5}$ = Particulate Matter of 2.5 Microns in Diameter and Smaller

As discussed in **Appendix F**, modeling performed by the Federal Highway Administration using the Environmental Protection Agency's MOVES model with national default fleet data indicates that overall mobile source air toxics emissions are anticipated to decline significantly over the next several decades such that emissions would be lower than existing conditions.

The No Build Alternative would be inconsistent with the currently approved 2024 RTP and 2025 Federal Transportation Improvement Program (FTIP) as it would not provide a rail transit option for communities in eastern Los Angeles County (**Appendix F** provides additional detail). Therefore, as shown in **Table 3.2-3**, the No Build Alternative would not be consistent with adopted regional and local plans and would result in an adverse air quality effect.

Table 3.2-3 Air Quality Impact Summary – No Build Alternative

Topic	Impact	Rationale
Consistency with 2025 Federal Transportation Improvement Program (FTIP) and 2024 Regional Transportation Plan (2024 RTP)	Adverse Effect	▪ Inconsistent with plans; would not support the growth and transit projections of the 2024 RTP and 2025 FTIP.
CO and particulate matter hot-spot	No Adverse Effect	▪ Maximum ambient monitored CO concentrations average approximately 5 percent of the 1-hour NAAQS and 16 percent of the 8-hour NAAQS. ▪ More stringent engine standards would lead to an anticipated decline in CO emission rates. ▪ Highest peak hour-volume intersections within the Study Area: multiway intersection of Woods Avenue, Beverly Boulevard, 3rd Street, and Pomona Boulevard (4,469 vehicles in the peak hour), and the multiway intersection of Atlantic Boulevard, Triggs Street, Goodrich Boulevard, Telegraph Road, and Ferguson Drive (4,442 vehicles in the peak hour). The percent increase in traffic at both peak intersections would be less than the percent decrease in anticipated CO emission rates between existing and future conditions. ▪ The No Build Alternative would not involve any new large congregations of diesel-powered transit vehicles.
Operational emissions	No Adverse Effect	▪ Federal and state regulations for vehicle engines and fuels could cause overall mobile source air toxics emissions to decline significantly over the next several decades. ▪ The magnitude of projected emission reductions is so great that mobile source air toxics emissions in the region would be expected to be lower than existing conditions in virtually all locations under the No Build Alternative

Source: Metro; CDM Smith/AECOM JV 2026.
Key: CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard

3.2.3 Build Alternative

The Build Alternative would be consistent with the currently approved 2025 FTIP and 2024 RTP. The Build Alternative is identified in the 2025 FTIP Project Listing, approved by the Federal Highway Administration and FTA on December 16, 2024. The Build Alternative is identified as "Eastside Transit Corridor Phase 2 - Metro L Line (Gold) Eastside Extension from its terminus at Atlantic Station in East Los Angeles to eastern Los Angeles County" under FTIP Identification LA0G626 for the preliminary engineering and right-of-way phases and RTP Identification 1TR0704, which is consistent with the definition of the Build Alternative. Project funding is programmed under the current 2025 FTIP. Additional funding for future project phases will be programmed under the FTIP at a later date. The Build Alternative would not conflict with the 2025 FTIP and no long-term adverse effect would occur.

Peak hour traffic volumes under the Build Alternative at the two highest-volume intersections would increase from 4,150 to 4,514 and from 4,243 to 4,428 between 2025 and 2050, an 8.8 percent and 4.4 percent increase, respectively. The EMFAC2021 model including the November 2025 off-model adjustment factors provides regional vehicle aggregate CO running exhaust emission rates of 1.32 grams per mile and 0.85 grams per mile in 2025 and 2050, respectively. This 35.7 percent reduction in emission factors is driven by changes to the fleet mix

and the gradual phase-in of Federal and Environmental Protection Agency-approved California vehicle regulations. Since the percent reduction in emission rates between current conditions and the Build Alternative is greater than the percent increase to peak traffic volumes over the same period, there would be no potential for the Build Alternative to generate a CO hot-spot. Additionally, the light rail vehicles would be powered by electricity, not diesel fuel. The Build Alternative would not result in any new large congregations of diesel-powered transit vehicles and there would be no potential to generate a particulate matter hot-spot.

The Environmental Protection Agency guidance for Particulate Matter hot-spot analysis and interagency consultation were used to determine whether the Build Alternative is a Project of Air Quality Concern. Per the transportation conformity rules and regulations, all nonexempt projects must go through review by the Transportation Conformity Working Group (TCWG). On March 24, 2026, the TCWG determined that the Build Alternative is not a Project of Air Quality Concern. The Build Alternative was approved and concurred upon by interagency consultation at the TCWG meeting as a project not having adverse impacts on air quality, and the Build Alternative meets the requirements of the Clean Air Act and 40 Code of Federal Regulations 93.116. No long-term adverse effect would occur.

Operation of the four new stations under the Build Alternative would not directly emit criteria pollutants. The operational emission sources most affected by the Build Alternative would be regional traffic. The Build Alternative's reasonably foreseeable effect would be mode shift of some travelers in the Study Area to rail ridership, replacing vehicle trips and reducing the associated vehicular emissions. Since air quality is characterized at a regional scale and the rail system is a large and interconnected transportation network that extends beyond the Study Area, the Build Alternative-related ridership shift would reduce VMT within the South Coast Air Basin region more than would be seen just within the Study Area. These regional VMT reductions are therefore included in this evaluation. While electricity for MSF Sites 1, 2, and 3 would differ marginally as a result of the different site sizes, criteria pollutant emissions from operational activities would not be expected to differ if either MSF Site 1 or 2 is constructed. Due to the smaller footprint and reduced light rail vehicle car accommodation, MSF Site 3 would result in operational emissions that would be less than MSF Site 1 or 2. As shown in **Table 3.2-4** and **Appendix F**, emissions of all relevant criteria pollutants and precursors, except for volatile organic compounds, would be reduced as a result of the Build Alternative with MSF Site 1 or 2. While emissions of volatile organic compounds could increase as a result of the Build Alternative, this increase would be below SCAQMD regional emission thresholds and there would be no potential for the operational emissions of the Build Alternative to cause a new National Ambient Air Quality Standards violation or exacerbate an existing violation. Emissions of all relevant criteria pollutants and precursors, including volatile organic compounds, would be reduced as a result of the Build Alternative with MSF Site 3. Thus, the Build Alternative with MSF Site 1, 2, or 3 would have no long-term adverse effect.

Table 3.2-4 Build Alternative with MSF – Regional Total Annual Operational Emissions (Pounds per Day)

Alternative	Emission Source	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Build Alternative (2050)	Regional Traffic	73,291	1,081,873	158,986	3,315	411,582	105,657
Build Alternative (2050)	MSF Site 1 or 2	4	<1	<1	<1	<1	<1
Build Alternative (2050)	MSF Site 3	<1	<1	<1	<1	<1	<1
Build Alternative (2050)	Parking Lot Maintenance and Parked Vehicle Fuel Evaporation	<1	--	--	--	--	--
—	**Daily Build Alternative Total with MSF Site 1 or 2**	73,295	1,081,873	158,986	3,315	411,582	105,657
—	**Daily Build Alternative Total with MSF Site 3**	73,291	1,081,873	158,986	3,315	411,582	105,657
No Build Alternative (2050)	Regional Traffic	73,292	1,081,888	158,988	3,315	411,588	105,659
—	**Annual Total**	73,292	1,081,888	158,988	3,315	411,588	105,659
Build Alternative with MSF minus No Build Alternative	Net Build Alternative Emissions with MSF Site 1 or 2[1]	3	(15)	(2)	(<1)	(6)	(1)
Build Alternative with MSF minus No Build Alternative	Net Build Alternative Emissions with MSF Site 3[1]	(1)	(15)	(2)	(<1)	(6)	(1)
Build Alternative with MSF minus No Build Alternative	SCAQMD Regional Significance Threshold	55	550	55	150	150	55
—	**Exceeds Level**	No	No	No	No	No	No

Source: CDM Smith/AECOM JV 2026.

Note:

[1] Emission reductions (beneficial impacts) are shown in parentheses.

Key: MSF = maintenance and storage facility; VOC = volatile organic compounds; CO = carbon monoxide; NOx = nitrogen oxides; SO_2=sulfur dioxide; PM_{10} = Particulate Matter of 10 Microns in Diameter and Smaller; $PM_{2.5}$ = Particulate Matter of 2.5 Microns in Diameter and Smaller; < = less than

Operation of the Build Alternative, regardless of MSF site selection, would not cause adverse air quality effects and would provide net air quality benefits on all criteria pollutants (other than volatile organic compounds) through reduced regional emissions and decreased reliance on automobile travel due to increased availability of, and anticipated mode shift of a subset of Study Area travelers to, light rail transit. The negligible increase in emissions of volatile organic compounds would be below SCAQMD regional emission thresholds. Thus, the Build Alternative would have no long-term adverse effect.

3.2.4 Avoidance, Minimization, and Mitigation Measures for the Build Alternative

The measures identified in **Table 3.2-5** would be implemented for the Build Alternative in the long term. Construction measures are provided in **Section 3.17**.

Table 3.2-5 Long-Term Avoidance, Minimization, and Mitigation Measures

Topic	Project Effect	Proposed Measure	Measure Type	Effects After Implementation of Measure(s)
Consistency with 2025 Federal Transportation Improvement Program (FTIP) and 2024 Regional Transportation Plan (RTP)	The Build Alternative would be consistent with the currently approved 2025 FTIP and 2024 RTP	No avoidance, minimization, or mitigation measures needed	None	**No Adverse Effect**
Carbon monoxide hot-spot	No potential for the Build Alternative to generate a carbon monoxide hot-spot	No avoidance, minimization, or mitigation measures needed	None	**No Adverse Effect**
Particulate matter hot-spot	No potential for the Build Alternative to generate a particulate matter hot-spot	No avoidance, minimization, or mitigation measures needed	None	**No Adverse Effect**
Operational emissions	Operation of the Build Alternative, regardless of MSF site selection, would not cause adverse air quality effects and would provide net air quality benefits on all criteria pollutants (other than volatile organic compounds) through reduced regional emissions and decreased reliance on automobile travel. The negligible increase in emissions of volatile organic compounds would be below SCAQMD regional emission thresholds.	No avoidance, minimization, or mitigation measures needed	None	**No Adverse Effect**

Source: CDM Smith/AECOM JV 2026.