

### 3.3. AIR QUALITY

The following summarizes the applicable regulations and the existing setting and provides a detailed impact assessment related to Air Quality. Refer to the Air Quality Technical Report (Appendix E) for additional details related to applicable regulations and the existing setting.

Criteria air pollutants are defined as pollutants for which the federal and State governments have established ambient air quality standards for outdoor concentrations. The federal and State standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons such as children, pregnant women, and the elderly, from illness or discomfort. Criteria air pollutants include ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), fine particulate matter 2.5 microns or less in diameter (PM<sub>2.5</sub>), respirable particulate matter ten microns or less in diameter (PM<sub>10</sub>), and lead (Pb). Note that reactive organic gases (ROGs), which are also known as reactive organic compounds (ROCs) or volatile organic compounds (VOCs), and Nitrogen oxide (NO<sub>x</sub>) are not classified as criteria pollutants. However, ROGs and NO<sub>x</sub> are widely emitted from land development projects and participate in photochemical reactions in the atmosphere to form O<sub>3</sub>. The analysis also discusses toxic air contaminants (TACs).

#### 3.3.1 Regulatory Framework

##### 3.3.1.1 Federal Regulations

**Clean Air Act (CAA).** The federal CAA was first enacted in 1955 to establish federal air quality standards, known as National Ambient Air Quality Standards (NAAQS). The CAA mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. The Proposed Project is located within the South Coast Air Basin (SCAB) and, as such, is in an area designated as a nonattainment area for certain pollutants that are regulated under the CAA.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect the development of the Proposed Project include Title 1 (Nonattainment Provisions) and Title II (Mobile-Source Provisions). Title III (Air Toxics) also has provisions that apply to the development of the Proposed Project.

**National Ambient Air Quality Standards (NAAQS).** The NAAQS set primary standards and secondary standards for specific criteria air pollutants. Primary standards define ambient concentration limits for the intention of protecting public health, which includes considerations for sensitive populations such as asthmatics, children, and the elderly. Secondary Standards

define limits to protect public welfare to include protection against decreased visibility, damage to animals, crops, vegetation, and buildings. A summary of the NAAQS is shown in **Table 3.3-1**.

**Table 3.3-1 – National Ambient Air Quality Standards**

Pollutant		Primary/Secondary	Averaging Time	Level
Carbon Monoxide (CO)		Primary	8-hour	9 ppm
			1-hour	35 ppm
Lead (Pb)		Primary and secondary	Rolling 3-month average	0.15 µg/m <sup>3</sup>
Ozone (O <sub>3</sub> )		Primary and secondary	8-hour	0.070 ppm
Nitrogen dioxide (NO <sub>2</sub> )		Primary	1-hour	100 ppb
		Primary and secondary	Annual	0.053 ppm
Particulate Matter	PM <sub>2.5</sub>	Primary	Annual	12 µg/m <sup>3</sup>
		Secondary	Annual	15 µg/m <sup>3</sup>
	PM <sub>10</sub>	Primary and secondary	24 hours	35 µg/m <sup>3</sup>
		Primary and secondary	24 hours	150 µg/m <sup>3</sup>
Sulfur Dioxide (SO <sub>2</sub> )		Primary	1-hour	75 ppb
		Secondary	3-hour	0.5 ppm

ppm = parts per million; ppb = parts per billion; µg/m<sup>3</sup> = micrograms per cubic meter

**SOURCE:** CARB, *Ambient Air Quality Standards*, June 25, 2020.

The adverse health effects of criteria pollutants include:

- **Carbon Monoxide (CO).** Elevated concentrations of CO weaken the heart’s contractions and lower the amount of oxygen carried by the blood. It is especially dangerous for people with chronic heart disease. Inhalation of CO can cause nausea, dizziness, and headaches at moderate concentrations and can be fatal at high concentrations.
- **Lead (Pb).** Lead affects the brain and other parts of the body’s nervous system. Exposure to lead in very young children impairs the development of the nervous system, kidneys, and blood forming processes in the body.
- **Ozone (O<sub>3</sub>).** An elevated level of O<sub>3</sub> irritates the lungs and breathing passages, causing coughing and pain in the chest and throat, thereby increasing susceptibility to respiratory infections and reducing the ability to exercise. Effects are more severe in people with asthma and other respiratory ailments. Long-term exposure may lead to scarring of lung tissue and may lower lung efficiency.
- **Nitrogen Dioxide (NO<sub>2</sub>) and Nitrogen Oxides (NO<sub>x</sub>).** Nitrogen oxides irritate the nose and throat, and increase one’s susceptibility to respiratory infections, especially in people with asthma. The principal concern of NO<sub>x</sub> is as a precursor to the formation of ozone.
- **Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>).** These small particulates can potentially aggravate existing heart and lung diseases, change the body’s defenses against inhaled materials, and damage lung tissue. The elderly, children, and those with chronic lung or heart disease are most sensitive to PM<sub>10</sub> and PM<sub>2.5</sub>. Lung impairment can persist for two to

three weeks after exposure to high levels of particulate matter. Some types of particulates can become toxic after inhalation due to the presence of certain chemicals and their reaction with internal body fluids.

- **Sulfur Dioxide (SO<sub>2</sub>).** Emissions of sulfur dioxide aggravate lung diseases, especially bronchitis. It also constricts the breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. SO<sub>2</sub> potentially causes wheezing, shortness of breath, and coughing. High levels of particulates appear to worsen the effect of sulfur dioxide, and long-term exposures to both pollutants leads to higher rates of respiratory illness.

**Safe Affordable Fuel-Efficient (SAFE) Vehicle Rule.** On September 19, 2019, the U.S. Department of Transportation's National Highway Traffic Safety Administration and United States Environmental Protection Agency (USEPA) issued the "One National Program Rules" to enable the federal government to provide nationwide uniform fuel economy and greenhouse gas emission standards for automobile and light duty trucks. This action finalizes the SAFE Vehicles Rule and clarifies that federal law preempts State and local tailpipe greenhouse gas emissions standards as well as zero emission vehicle (ZEV) mandates. The SAFE Vehicle Rule also withdraws the CAA waiver granted to the State of California that allowed the State to enforce its own Low Emission Vehicle program.<sup>1</sup> On March 31, 2020, Part II of the SAFE Vehicles was issued and sets carbon dioxide emissions and corporate average fuel economy standards for passenger vehicles and light duty trucks, covering model years 2021 to 2026.<sup>2</sup>

### 3.3.1.2 State Regulations

The California Clean Air Act of 1988 (Chapter 1568, Statutes of 1988) requires all air pollution control districts in the state to aim to achieve and maintain California Ambient Air Quality Standards (CAAQS) by the earliest possible date and to develop plans and regulations specifying how the districts will meet this goal. Responsibility for achieving the CAAQS, which for certain pollutants and averaging periods are more health protective than federal standards, is placed on the California Air Resources Board (CARB) and local air pollution control districts. State standards, shown in **Table 3.3-2**, are to be achieved through district-level air quality management plans that are incorporated into the SIP. Traditionally, CARB has established the CAAQS, maintained oversight authority in air quality planning, developed programs for reducing emission from motor vehicles, developed air emissions inventories, collected air quality and meteorological data, and approved SIPs developed by the individual air districts.

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<sup>1</sup> U.S. Department of Transportation and USEPA, *One National Program Rule on Federal Preemption of State Fuel Economy Standards*, 2019. <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-one-national-program-federal-preemption-state#:~:text=In%20this%20action%20NHTSA%20is,and%20local%20programs%20are%20preempted.>

<sup>2</sup> U.S. Department of Transportation, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*, 2020. [https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/final\\_safe\\_preamble\\_web\\_version\\_200330.pdf](https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/final_safe_preamble_web_version_200330.pdf).

**Table 3.3-2 – California Ambient Air Quality Standards**

Pollutant		Averaging Time	Level
Carbon Monoxide (CO)		8-hour	9 ppm
		1-hour	20 ppm
Lead (Pb)		30-day average	1.5 µg/m <sup>3</sup>
Nitrogen Dioxide (NO <sub>2</sub> )		1-hour	0.180 ppm
		Annual	0.030 ppm
Ozone (O <sub>3</sub> )		8-hour	0.070 ppm
		1 hour	0.09 ppm
Particulate Matter	PM <sub>2.5</sub>	Annual	12 µg/m <sup>3</sup>
	PM <sub>10</sub>	24 hours	50 µg/m <sup>3</sup>
		Annual	20 µg/m <sup>3</sup>
Sulfur Dioxide (SO <sub>2</sub> )		1-hour	0.25 ppm
		24 hours	0.04 ppm
Sulfates		24 hours	25 µg/m <sup>3</sup>
Hydrogen Sulfide		1 hour	0.03 ppm

**SOURCE:** CARB, *Ambient Air Quality Standards*, <https://www.arb.ca.gov/research/aaqs/aaqs2.pdf>, May 2016.

### 3.3.1.3 Regional Regulations

**South Coast Air Quality Management District (SCAQMD).** The SCAQMD was created to protect the public from the harmful effects of air pollution, achieve and maintain air quality standards, foster community involvement, and develop and implement cost-effective programs that meet State and federal mandates, while considering environmental and economic impacts. The SCAQMD monitors air quality, and plans, implements, and enforces programs in order to attain and maintain CAAQS and NAAQS in the SCAB. The SCAB region makes up all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The attainment status of the SCAB region is summarized in **Table 3.3-3**. SCAB is a nonattainment area for ozone and particulate matter for both the CAAQS and the NAAQS.

**Table 3.3-3 – Attainment Status of the South Coast Air Basin**

Pollutants	Federal Classification	State Classification
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO <sub>2</sub> )	Attainment	Attainment
Ozone (O <sub>3</sub> ) - 8-hour standard	Nonattainment (extreme)	Non-attainment
Ozone (O <sub>3</sub> ) - 1-hour standard	Nonattainment (extreme)	Non-attainment
Particulate Matter (PM <sub>10</sub> )	Attainment	Non-attainment
Particulate Matter (PM <sub>2.5</sub> )	Non-attainment (serious)	Non-attainment
Sulfur Dioxide (SO <sub>2</sub> )	Unclassifiable/Attainment	Unclassifiable/Attainment

**SOURCE:** CARB, *Maps of State and Federal Area Designations*, 2019.

The SCAQMD is required to develop an Air Quality Management Plan (AQMP) to reach attainment for ozone and particulate matter in the region. The SCAQMD approved the latest version, 2016 AQMP, in March 2017. The 2016 AQMP analyzes the existing and potential regulatory options, including proven, cost-effective strategies, for controlling emissions and seeks to achieve multiple goals in partnerships to further reduce air contaminants as well as greenhouse gas emissions and TACs in order to meet attainment. The 2016 AQMP projected the SCAB region would attain the 24-hour  $PM_{2.5}$  standards by 2019, annual  $PM_{2.5}$  standards by 2021, 1-hour  $O_3$  standards by 2023, and 8-hour  $O_3$  standards by 2032.

#### SCAQMD Rules and Regulations

The following is a list of noteworthy SCAQMD rules applicable to the Proposed Project:

- Rule 402 (Nuisance) – This rule prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.
- Rule 403 (Fugitive Dust) – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. This rule is intended to reduce  $PM_{10}$  from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust.
- Rule 1113 (Architectural Coatings) – This rule requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.

**Southern California Association of Governments (SCAG).** MPO are designated local decision-making bodies that carry out the federal transportation planning process. SCAG is the federally designated MPO for Los Angeles County. SCAG is required to adopt and periodically update a RTP. SB 375 requires MPOs to set regional greenhouse gas emission reduction targets that are developed through a SCS as part of the RTP. SCAG's 2020-2045 RTP/SCS presents the latest transportation vision for Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial Counties through 2045 and provides a long-term investment framework for addressing the region's transportation and growth challenges. The expansion of public transit and displacement of on-road light duty automobile and truck travel are recognized in 2020-2045 RTP/SCS as crucial pillars of sustainable regional transportation planning.

**Los Angeles County Metropolitan Transportation Authority (Metro).** Approved by the Metro Board of Directors on September 24, 2020, the Moving Beyond Sustainability Plan establishes agency-wide sustainability goals, targets, and strategies for the next ten years. The Plan includes energy, water, emissions and pollution control, materials and construction/operations,

climate adaptation and resiliency, livable neighborhoods, equity, and economic and workforce development goals. Metro has also prepared the Climate Action and Adaptation Plan 2019 that commits the agency to reducing greenhouse gas emissions by 79 percent relative to 2017 levels by 2030 and 100 percent by 2050. The Draft Moving Beyond Sustainability Plan, published in 2020, establishes agency-wide sustainability goals, targets, and strategies for the next ten years. The Plan will include energy, water, emissions and pollution control, materials and construction/operations, climate adaptation and resiliency, livable neighborhoods, equity, and economic and workforce development goals. Metro has also prepared the Climate Action and Adaptation Plan 2019 that commits the agency to reducing greenhouse gas emissions by 79 percent relative to 2017 levels by 2030 and 100 percent by 2050. Many of the benefits of reducing greenhouse gas (GHG) emissions correlate to other air pollutants as well. The 2019 Climate Action and Adaptation Plan updated the agency's commitment to reducing operational greenhouse gas emissions by 79 percent relative to 2017 levels by 2030 and 100 percent by 2050. Operational emissions are broken down into three sources, or scopes. Scope 1 emissions include direct GHG emissions from equipment and facilities owned and/or operated by Metro. Scope 2 includes indirect GHG emissions from electricity purchases. Scope 3 includes all other Metro activities from sources owned or controlled by another company or entity, including: business travel, embodied emission in material goods purchased and service contracted by Metro, emissions from landfilled solid waste, and emissions Metro employee commute patterns. The Plan includes thirteen mitigation measures to reduce GHG emissions, most of which are aimed at reducing Scope 1 and Scope 2 emissions.

Metro adopted a Green Construction Policy in August 2011 and is committed to using more sustainable construction equipment and vehicles as well as implementing best practices, to reduce harmful diesel emissions from all Metro construction projects performed on Metro properties and in Metro ROWs. The Green Construction Policy encourages the use of construction equipment with technologies such as hybrid drives and specific fuel economy standards, both of which are methods to reduce air pollutant emissions during the construction period. From January 2015 onwards, the Green Construction Policy has required all off-road, diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 off-road emission standards at a minimum.

#### 3.3.1.4 Local Regulations

The Cities through which the Proposed Project traverses have published planning documents that address air quality. Refer to the Air Quality Technical Report for a more detailed discussion of the specific elements of each plan below that are relevant to the Proposed Project.

#### City of Los Angeles

**General Plan.** The City of Los Angeles' General Plan contains goals and policies for future development in the City. The General Plan Framework Element provides Citywide policy and direction for the creation and updates of the General Plan elements. The Air Quality Element of the General Plan identifies existing air quality issues for the City of Los Angeles and contains goals, objectives, and policies for improving air quality through strategic land use planning and other initiatives.

**Land Use/Transportation Policy.** The City of Los Angeles Land Use/Transportation Policy provides the framework to guide future development around transit station areas. The policy includes several elements, consisting of Land Use, Housing, Urban Design, Ridership Strategy, Parking and Traffic Circulation, Equity, Economic Development, and Community Facilities Elements. The elements are intended to guide the land use and circulation patterns linked to the transit system. The guiding principles of the Land Use/Transportation Policy that are applicable to air quality include:

- Increase transit ridership and maximize the use and efficiency of Los Angeles' rail and bus transit systems.
- Establish transit centers and station areas as places where future growth of Los Angeles is focused.
- Develop compact quality pedestrian oriented mixed-use neighborhoods within walking distance to rail transit stations and other transit centers.
- Improve the public health and environment by reducing emission of air pollution from automobiles by creating a more efficient urban form.

**North Hollywood – Valley Village Community Plan.** The North Hollywood – Valley Village Hollywood Community Plan Area is located approximately 15 miles northeasterly of Downtown Los Angeles. The Community Plan is intended to promote an arrangement of land uses, streets, and services which will contribute to the economic, social, and physical health, safety, welfare, and convenience of the people who live and work in the community. The plans include goals to maximize the development opportunities of transit systems.

**Mobility Plan 2035.** In February 2015, the City of Los Angeles released the City's Mobility Plan 2035 as an addition to the Air Quality Element of the General Plan. The Plan identifies goals, objectives, policies, and action items (programs and projects) that serve as guiding tools for making sound transportation decisions as the City evolves. The Mobility Plan 2035 includes a number of policies related to the Proposed Project, including policies that promote the link between land use and transportation and increase the use of technology (applications, real time transportation information). It also includes wayfinding to expand awareness and access to parking options and a host of multi-modal options (car share, bicycle share, car/van pool, bus and rail transit, shuttles, walking, bicycling, driving).

### City of Burbank

**General Plan.** The Burbank 2035 General Plan addresses air quality in the Air Quality and Climate Change Element. The plan acknowledges that one of the City's biggest challenges is how to best accommodate growth and encourage economic development, while protecting air quality and taking action to curb greenhouse gas emissions. The City of Burbank General Plan identifies air quality and climate change programs to reduce air pollutant emissions in order to improve overall air quality and environmental health.

**Burbank Center Plan.** The Burbank Center Plan is an economic revitalization plan for Downtown Burbank and surrounding areas. The Burbank Center Plan includes objectives related to air quality such as encouraging coordination of land use and transportation facilities and services in order to reduce the need for private vehicle transportation in accordance with regional congestion management and clean air goals.

### City of Glendale

**General Plan.** The Air Quality Element of the Glendale General Plan identifies existing air quality issues for the City of Glendale and contains goals and policies. The overall goal of this element is to assist other governmental agencies in the attainment of healthful air for Glendale, including those sensitive to air pollution.

**Greater Downtown Strategic Plan.** The Greater Downtown Strategic Plan, adopted in 1996, includes the downtown area and the adjacent residential neighborhoods. Goals of the Greater Downtown Strategic Plan include significantly increasing the amount of public open space and developed parkland in Downtown Glendale and strengthening the interdependence between downtown and the surrounding neighborhoods. The Greater Downtown Strategic Plan was followed by the Town Center Specific Plan in 2004 and the Downtown Strategic Plan in 2006 to update and implement the vision, goals, and policies for the Greater Downtown area.

**Downtown Specific Plan (DSP).** The DSP is designed to update and implement the vision, goals, and policies for the downtown as initially set forth in the Greater Downtown Strategic Plan. The DSP is an urban design-oriented plan, which sets the physical standard and guidelines as well as land use regulations for activities within the DSP area. The DSP's purpose as it relates to air quality includes strengthening pedestrian, bicycle and transit-oriented characteristics while ensuring vehicular access to downtown destinations and concentrating growth in the downtown – a transit-rich entertainment, employment and cultural center – to relieve development pressures on existing residential neighborhoods.

### City of Pasadena

**General Plan.** The City of Pasadena's General Plan does not include an Air Quality Element; however, the mobility element of the General Plan includes policies aimed at reducing air quality pollutant emissions through transit. The relevant mobility objectives and policies are generally focused on integration of transit to displace vehicle trips, reducing congestion, encouraging active transportation, and enhancing multi-modal transportation nodes.

#### 3.3.2. Existing Setting

This section describes the existing air quality setting of the Project Area, which includes a discussion of the air pollutants of concern, the background concentrations of these pollutants, and the air quality management of the SCAB. Below is a description of the air pollutants commonly used to characterize air quality conditions and public health issues.



### 3.3.2.1 Sensitive Receptors

Certain groups of people are more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The 18-mile corridor includes many sensitive receptors.

### 3.3.2.2 Climate and Meteorology

The Proposed Project is located within the SCAB, an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the SCAB, which is a coastal plain with connecting broad valleys and low hills. The Southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the SCAB is a function of the area's natural physical characteristics (weather and topography) and human influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the SCAB, making it an area of high pollution potential.

### 3.3.2.3 Measured Pollutant Concentrations

The SCAQMD operates air quality monitoring stations throughout Los Angeles County. The monitoring stations located closest to the Proposed Project and most representative of the air quality within the Project Area are the Pasadena – South Wilson Avenue, Los Angeles – North Main Street, and Reseda stations. All three stations monitor O<sub>3</sub>, NO<sub>2</sub>, and PM<sub>2.5</sub>, while the Los Angeles – North Main Street station also monitors PM<sub>10</sub>. A summary of the monitored values for O<sub>3</sub>, NO<sub>2</sub>, and PM<sub>2.5</sub> at the Pasadena – South Wilson Avenue monitoring station for the past three years of available data (2017 to 2019) is presented in **Table 3.3-4**. The values show that the Pasadena monitoring station has registered values above State and/or federal standards for O<sub>3</sub>.

A summary of the monitored values for O<sub>3</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> at the Los Angeles – North Main Street monitoring station for the past three years of available data (2017 to 2019) is presented in **Table 3.3-5**. The values show that the Los Angeles monitoring station has registered values above State and federal standards for O<sub>3</sub> and PM<sub>2.5</sub>.

**Table 3.3-4 – Pasadena – South Wilson Avenue Air Monitoring Station Ambient Pollutant Concentrations**

Pollutant	Standards	Year		
		2017	2018	2019
<b>OZONE (O<sub>3</sub>)</b>				
Maximum 1-hour concentration monitored (ppm)		0.139	0.112	0.120
Maximum 8-hour concentration monitored (ppm)		0.100	0.090	0.098
Number of days exceeding State 1-hour standard	0.09 ppm	18	8	1
Number of days exceeding federal/State 8-hour standard	0.070 ppm	36	19	6
<b>NITROGEN DIOXIDE (NO<sub>2</sub>)</b>				
Maximum 1-hour concentration monitored (ppm)		0.072	0.068	0.059
Annual average concentration monitored (ppm)		0.015	0.014	0.013
Number of days exceeding State 1-hour standard	0.18 ppm	0	0	0
<b>FINE PARTICULATE MATTER (PM<sub>2.5</sub>)</b>				
Maximum 24-hour concentration monitored (µg/m <sup>3</sup> )		22.8	32.5	30.9
Annual average concentration monitored (µg/m <sup>3</sup> )		9.6	10.2	8.9
Number of samples exceeding federal standard	35 µg/m <sup>3</sup>	0	0	0

**SOURCE:** CARB, *Air Quality Data Statistics*, 2020; SCAQMD, *Air Quality South Coast Air Quality Management District*, 2019.

**Table 3.3-5 – Los Angeles – North Main Street Air Monitoring Station Ambient Pollutant Concentrations**

Pollutant	Standards	Year		
		2017	2018	2019
<b>OZONE (O<sub>3</sub>)</b>				
Maximum 1-hour concentration monitored (ppm)		0.116	0.098	0.085
Maximum 8-hour concentration monitored (ppm)		0.086	0.073	0.080
Number of days exceeding State 1-hour standard	0.09 ppm	6	2	0
Number of days exceeding federal/State 8-hour standard	0.070 ppm	14	4	2
<b>NITROGEN DIOXIDE (NO<sub>2</sub>)</b>				
Maximum 1-hour concentration monitored (ppm)		0.081	0.070	0.069
Annual average concentration monitored (ppm)		0.02	0.018	0.018
Number of days exceeding State 1-hour standard	0.18 ppm	0	0	0
<b>RESPIRABLE PARTICULATE MATTER (PM<sub>10</sub>)</b>				
Maximum 24-hour concentration monitored (µg/m <sup>3</sup> )		64.6	68.2	62.0
Annual average concentration monitored (µg/m <sup>3</sup> )		25.7	30.2	25.5
Number of samples exceeding State standard	50 µg/m <sup>3</sup>	40	31	3
Number of samples exceeding federal standard	150 µg/m <sup>3</sup>	0	0	0
<b>FINE PARTICULATE MATTER (PM<sub>2.5</sub>)</b>				
Maximum 24-hour concentration monitored (µg/m <sup>3</sup> )		54.9	61.4	43.5
Annual average concentration monitored (µg/m <sup>3</sup> )		12	12.8	10.8
Number of samples exceeding federal standard	35 µg/m <sup>3</sup>	6	6	1

**SOURCE:** CARB, *Air Quality Data Statistics*, 2020; SCAQMD, *Air Quality South Coast Air Quality Management District*, 2019.

A summary of the monitored values for O<sub>3</sub>, NO<sub>2</sub>, and PM<sub>2.5</sub> at the Reseda monitoring station for the past three years of available data (2017 to 2019) is presented in **Table 3.3-6**. The values show that the Reseda monitoring station has registered values above State and/or federal standards for O<sub>3</sub>.

**Table 3.3-6 – Reseda Air Monitoring Station Ambient Pollutant Concentrations**

Pollutant	Standards	Year		
		2017	2018	2019
<b>OZONE (O<sub>3</sub>)</b>				
Maximum 1-hour concentration monitored (ppm)		0.140	0.101	0.101
Maximum 8-hour concentration monitored (ppm)		0.114	0.0101	0.087
Number of days exceeding State 1-hour standard	0.09 ppm	44	23	6
Number of days exceeding federal/State 8-hour standard	0.070 ppm	64	49	6
<b>NITROGEN DIOXIDE (NO<sub>2</sub>)</b>				
Maximum 1-hour concentration monitored (ppm)		0.063	0.057	0.064
Annual average concentration monitored (ppm)		0.012	0.012	0.011
Number of days exceeding State 1-hour standard	0.18 ppm	0	0	0
<b>FINE PARTICULATE MATTER (PM<sub>2.5</sub>)</b>				
Maximum 24-hour concentration monitored (µg/m <sup>3</sup> )		35.2	38.9	30.0
Annual average concentration monitored (µg/m <sup>3</sup> )		9.7	**	9.2
Number of samples exceeding federal standard	35 µg/m <sup>3</sup>	0	1	0

\*\*Insufficient data available to determine value.

**SOURCE:** CARB, *Air Quality Data Statistics*, 2020; SCAQMD, *Air Quality South Coast Air Quality Management District*, 2019.

### Air Toxics

The SCAQMD completed the Multiple Air Toxics Exposure Study IV (MATES IV), which was an ambient air monitoring and evaluation study conducted in the SCAB. Compared to previous studies of air toxics in the SCAB, Mates IV found a decreasing risk for air toxics exposure. The MATES IV concluded that the average carcinogenic risk throughout the SCAB, attributed to TACs, is approximately 418 in one million.

As the MATES-IV was being concluded, the California Office of Environmental Health Hazard Assessment (OEHHA) adopted revised methods for estimating cancer risks, which resulted in a SCAB-wide cancer risk of 1,023 in one million. This revised figure represents a change in the methodology for risk calculations, taking into account age sensitivity factors and breathing rates to a greater extent than previous efforts. Mobile sources (e.g., cars, trucks, trains, ships, aircraft) represent the greatest contributors, at 90 percent. About 68 percent of all risk is attributed to diesel particulate matter emissions. As of August 2020, SCAQMD is updating and finalizing its MATES-V.

According to the most current SCAQMD inhalation cancer risk data (MATES IV Carcinogenic Interactive Map), the Project Area is within a cancer risk zone of approximately 792 to 1,142 cases per one million. This is largely due to the Proposed Project proximity to Interstate 210, Interstate 5, SR-1, and SR-2. The potential alignments travel through seven areas that have a higher cancer risk than the SCAB-wide average. For comparison, the average cancer risk in the SCAB is 1,023 cases per one million people; as such, existing risks in the study area are not substantially different from the SCAB-wide average. The alignment runs through 19 areas (from the MATES IV Interactive Map), seven of which have a risk greater than the SCAB-wide average cancer risk.

### 3.3.3 Significance Thresholds and Methodology

#### 3.3.3.1 Thresholds of Significance

##### State CEQA Guidelines

In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant impact related to air quality if it would:

- a) Conflict with or obstruct implementation of the applicable air quality plan;
- b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard;
- c) Expose sensitive receptors to substantial pollutant concentrations; and/or
- d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The State CEQA Guidelines also states that the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the determination above.

##### SCAQMD Air Quality Significance Thresholds

Based on the SCAQMD's regulatory role in SCAB, the significance thresholds and analysis methodologies outlined in the *SCAQMD CEQA Air Quality Handbook, Localized Significance Thresholds and Calculation Methodology* guidance documents were used in evaluating impacts. The SCAQMD daily air pollutant emissions threshold amounts are presented in **Table 3.3-7**. If the operation or construction emissions exceed the applicable threshold, then the impact can be considered to be significant.

**Table 3.3-7 – SCAQMD Air Quality Significance Thresholds**

Pollutant	Construction	Operation
<b>MASS DAILY THRESHOLDS</b>		
Nitrogen Oxides (NOx)	100 lbs/day	55 lbs/day
Volatile Organic Compounds (VOC)	75 lbs/day	55 lbs/day
Respirable Particulate Matter (PM10)	150 lbs/day	150 lbs/day
Fine Particulate Matter (PM2.5)	55 lbs/day	55 lbs/day
Sulfur Oxides (SOx)	150 lbs/day	150 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Lead (Pb)	3 lbs/day	3 lbs/day

**SOURCE:** SCAQMD, *SCAQMD Air Quality Significance Thresholds*, 2019.

The SCAQMD has also established a localized significance threshold (LST) for emissions based on the source receptor area (SRA), site size, and the receptor distance. These LSTs represent the mass emissions rates that could result in localized exceedances of ambient air quality standards. The Proposed Project traverses three different SRAs: the East San Fernando Valley SRA (SRA 7), West San Gabriel Valley (SRA 8), and South San Gabriel Valley (SRA 11). To evaluate construction impacts, this analysis assumes a number of localized construction projects focusing on building BRT stations and associated infrastructure. To ensure a conservative analysis, a one-acre site and 25-meter distance to the nearest sensitive receptor were assumed. These are the smallest site sizes and closest receptor distances published in the SCAQMD’s LST look-up tables for daily localized emissions. To evaluate operations impacts, this analysis recognizes the linear footprint of the BRT corridor and conservatively assumes the Project Area to be one-acre with receptors 25 meters from the source of emissions. Localized emissions would be significant if the operation or construction emissions exceed any of the LST thresholds shown in **Table 3.3-8**.

**Table 3.3-8 – SCAQMD LST Thresholds**

Phase	NOx	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>EAST SAN FERNANDO VALLEY (SRA 7)</b>				
Construction (lbs/day)	80	498	5	3
Operation (lbs/day)	80	498	1	1
<b>WEST SAN GABRIEL VALLEY (SRA 8)</b>				
Construction (lbs/day)	69	535	4	3
Operation (lbs/day)	69	535	1	1
<b>SOUTH SAN GABRIEL VALLEY (SRA 11)</b>				
Construction (lbs/day)	83	760	5	4
Operation (lbs/day)	83	760	1	1

**SOURCE:** SCAQMD, *Mass Rate LST Look-Up Tables*, 2009.

With respect to criteria pollutants, NAAQS and CAAQS represent the exposure level (with an adequate margin of safety) deemed safe for humans. No ambient air quality standards exist for TACs because there is no exposure level deemed safe for humans. Pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, CARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a Hazard Index, is used to evaluate risk.

### 3.3.3.2 Methodology

The Proposed Project would generate temporary construction-related emissions and result in changes to regional operational emissions. The methodology used to evaluate construction and operational effects is described below.

#### Construction

The analysis quantified construction emissions using the California Emissions Estimator Model (CalEEMod) version 2016.3.2, which has been approved by the SCAQMD for emissions estimation within SCAB. To determine the significance of potential construction air quality impacts, the calculated daily emissions were measured against applicable SCAQMD regional and local significance thresholds. The *SCAQMD Air Quality Analysis Handbook* recommends the assessment of air pollutant emissions from projects for both regional and localized impacts. Regional emissions refer to all emissions associated with project implementation that occur within SCAB, while localized emissions are those emitted from sources specifically located on a project site.

For construction, regional emissions include those that would be generated by all equipment, fugitive/area sources, and emissions associated with debris hauling, material delivery, and crew vehicle trips. The SCAQMD guidance advises that maximum daily emissions be disclosed in the air quality impacts assessment. While construction of the Proposed Project is expected to cumulatively last 24 to 30 months, construction activities at any one station location would be much shorter in duration, with potential overlapping activities at two or more locations. The regional analysis accounts for a conservative projection of the maximum daily equipment and vehicle activity that could be occurring along the entire Project corridor in a given day. Analyzing such a worst-case scenario ensures that all other construction activities would not produce air quality impacts that exceed those analyzed in this document.

The SCAQMD has developed a set of mass emissions rate look-up tables that can be used to evaluate localized impacts that may result from construction LSTs. If the on-site emissions from proposed construction activities are below the LST emissions levels found in the LST mass rate look-up tables for the SRA, then emissions would not have the potential to cause a significant localized air quality impact. The proposed BRT service would travel through three SRAs: East

San Fernando Valley SRA (SRA 7), West San Gabriel Valley (SRA 8), and South San Gabriel Valley (SRA 11).

The localized analysis accounts for the standard construction methods that would be used to install the station platforms and accessory features along the Proposed Project corridor. Construction work would generally include a combination of the following elements dependent upon the chosen BRT alignment: restriping, curb-and-gutter/sidewalk reconstruction, ROW clearing, pavement improvements, station/loading platform construction, landscaping, and lighting and traffic signal modifications. Construction equipment anticipated to be used for the Proposed Project could include but would not be limited to asphalt milling machines, asphalt paving machines, large and small excavators/backhoes, loaders, bulldozers, dump trucks, compactors/rollers, and concrete trucks. Smaller equipment may also be used such as walk-behind compactors, compact excavators and tractors, and small hydraulic equipment.

The SCAQMD's methodology clearly states that off-site mobile emissions should not be included in the emissions compared to LSTs. Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod on-site emissions outputs were considered. Each individual project site (assumed to be each proposed BRT station) is less than 1-acre and it was assumed that sensitive receptors would lie adjacent to the BRT stations. According to SCAQMD methodology, it is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters. Therefore, the LST screening thresholds for a 1-acre project site with sensitive receptors located within 25 meters of the project site were used for this analysis.

Daily construction emissions from off-road equipment, on-road vehicles and fugitive dust from the Proposed Project were compared to the SCAQMD's regional significance thresholds, see **Table 3.3-7**. In order to evaluate localized emissions impacts, emissions from the construction of a representative bus station were evaluated and compared to the LSTs for the East San Fernando Valley SRA, West San Gabriel SRA, and South San Gabriel Valley SRA, see **Table 3.3-8**.

### Operations

The Proposed Project would produce two types of operational air quality impacts. First, BRT service would generate emissions associated with operating bus services throughout the corridor. BRT service is expected to utilize zero-emission electric buses. However, compressed natural gas (CNG)-powered buses may be required when the Proposed Project first opens. If required, the use of CNG-powered buses during operation would be a temporary condition and any additional impacts posed by CNG-powered buses would be short-term and negligible. While operation of electric buses would not generate combustion-related emissions directly, buses would require battery charging.

The energy consumption of the buses would generate indirect operational NOx emissions from power plant or other energy sources that were quantified below based on the annual vehicle miles traveled (VMT) of the fleet and the USEPA’s eGRID2018 Summary Tables for the State of California.<sup>3</sup> Second, operation of the electric buses would generate particulate matter emissions from brake and tire wear as well as fugitive road dust. The analysis quantified brake and tire wear particulate matter and fugitive road dust emissions using CARB’s Emissions Factor Model (EMFAC2017).

The Proposed Project was compared against existing conditions, which “normally constitutes the baseline physical conditions by which a lead agency determines whether an impact is significant,” under Section 15125(a) of the CEQA Guidelines. As summarized in **Table 3.3-9**, there are over 428 million regional daily VMT for motor vehicles under existing conditions. As the Proposed Project includes several route options, the alignment with the highest mixed-flow traffic VMT was evaluated and compared to the SCAQMD’s thresholds. As a result, this route would result in the highest operational emissions; consequently, any other route would produce lesser operational emissions. When compared to the Existing condition, the Existing plus Project condition would reduce VMT by 0.017 percent by replacing some auto use with bus transit trips. A similar reduction is demonstrated between the 2042 Baseline condition and the Proposed Project. Year 2017 was used as the Baseline condition in this analysis to ensure consistency with the regional transportation model. There is a marginal difference (less than 0.1 percent) in regional VMT between 2017 and 2019 and the difference would have no effect to the impact conclusions presented in this analysis.

**Table 3.3-9 – Regional Vehicle Miles Traveled**

Scenario	Daily VMT	Annual VMT	Percent Decrease
Existing (2017)	428,792,499	148,791,691,153	-
Existing + Project	428,721,905	148,766,500,989	0.017%
2042 Baseline	511,871,989	177,619,580,183	-
Proposed Project	511,785,330	177,589,509,510	0.017

**SOURCE:** Kimley-Horn Associates, *North Hollywood to Pasadena BRT Project Transportation Technical Report*, 2020.

Transportation modeling was also completed for the Route Options. The regional VMT for implementing the design options differed marginally from the Proposed Project by approximately 0.003 percent. Therefore, it is reasonable to only quantify air pollutant emissions associated with the Proposed Project. In order to conservatively evaluate any potential BRT service route, the alignment with the highest mixed-flow traffic VMT was evaluated and compared to the SCAQMD’s thresholds. As a result, this route would result in the highest operational emissions; consequently, any other route would produce lesser operational emissions. Additionally, the

<sup>3</sup> USEPA, *eGRID2018*, [https://www.epa.gov/sites/production/files/2020-01/documents/egrid2018\\_summary\\_tables.pdf](https://www.epa.gov/sites/production/files/2020-01/documents/egrid2018_summary_tables.pdf), 2018.



analysis takes into account the changes in air quality emissions associated with changes along the project route from implementation of Metro's NextGen Service and the Proposed Project that would reduce service from existing bus lines that overlap with the proposed BRT route. Metro Line 180 connects Hollywood with Pasadena and would be restructured to reduce service along the route by approximately 303,125 annual revenue miles.

The potential impacts related to localized CO hot-spot emissions are evaluated following the methodology prescribed in the Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) developed for the California Department of Transportation (Caltrans) by the Institute of Transportation Studies at the University of California, Davis.

### 3.3.4 Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation measures (if applicable). The potential for the Proposed Project to result in an impact to energy resources is independent of the specific alignment and Project components. The following impact conclusions are valid for the Proposed Project and all route variations, treatments, and configurations.

**Impact 3.3-1)** Would the Proposed Project conflict with or obstruct implementation of the applicable air quality plan?

#### Construction and Operations

**Less than Significant Impact.** As part of its enforcement responsibilities, the USEPA requires each State with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under State law, the California CAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and State ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The Proposed Project is located within the SCAB, which is under the jurisdiction of the SCAQMD. The SCAQMD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SCAB is in nonattainment. In order to reduce such emissions, the SCAQMD drafted the 2016 AQMP. The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving the CAAQS and NAAQS. The plan's pollutant control strategies are based on the latest scientific and technical information and planning assumptions updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts (defined in consultation with local governments and with reference to local general plans).

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the *SCAQMD's 1993 CEQA Air Quality Handbook*, and include the following:

- Consistency Criterion No. 1: The Proposed Project would not result in an increase in the frequency or severity of existing air quality violation, or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.
- Consistency Criterion No. 2: The Proposed Project would not exceed the assumptions of the AQMP or increments.

The violations to which Consistency Criterion No. 1 refers are the CAAQS and the NAAQS. As evaluated under Impact (b) below, the Proposed Project would not exceed the short-term construction standards or long-term operational standards and, as a result, would not violate any air quality standards, see **Table 3.3-10** and **Table 3.3-11**. The Proposed Project would be consistent with the first criterion.

Second, the 2016 AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. The Proposed Project would construct an 18-mile BRT route connecting North Hollywood to Pasadena. Implementation of the Proposed Project would not introduce new growth in population, housing, or employment to Los Angeles County or the greater SCAG region. Therefore, the Proposed Project would not induce growth exceeding the assumptions within the AQMP. The Proposed Project would expand the transit network within the County of Los Angeles and would encourage mode shift from single-passenger vehicles to transit. As a result, the Proposed Project is consistent with the 2016 AQMP as well as the goals set out in the Cities of Los Angeles, Burbank, Glendale, and Pasadena's General Plans. The Proposed Project is also consistent with the second criterion.

Therefore, the Proposed Project would result in a less-than-significant impact related to construction and operational activities.

#### Mitigation Measures

No mitigation measures are required.

#### Significance of Impacts after Mitigation

Less than significant impact.

**Impact 3.3-2) Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?**

**Construction**

**Less-Than-Significant Impact.** The SCAB region is in nonattainment for O<sub>3</sub> and PM<sub>2.5</sub>. The analysis presented below quantitatively addresses the six pollutants regulated by the SCAQMD's significance thresholds, including particulate matter as well as O<sub>3</sub> precursors, ROG and NOx.

Construction activities would result in the short-term generation of criteria pollutant emissions. Emissions would include (1) fugitive dust generated from curb/pavement demolition, site work, and other construction activities; (2) hydrocarbon (ROG) emissions related to the application of architectural coatings; (3) exhaust emissions from powered construction equipment; and (4) motor vehicle emissions associated with debris hauling trips, material delivery trips, and worker trips.

During construction, the Proposed Project would be subject to SCAQMD Rule 403 (Fugitive Dust). SCAQMD Rule 403 does not require a permit for construction activities but sets forth requirements for all construction sites (as well as other fugitive dust sources) in SCAB. In general, Rule 403 prohibits a project from causing or allowing emissions of fugitive dust from construction (or another fugitive dust source) to remain visible in the atmosphere beyond the property line of the emissions source.

Bus charging is expected to occur at stationary facilities. Coaches would likely be serviced at one maintenance division, likely the El Monte Metro Division. Coaches maybe CNG-fueled in the opening years and use existing fueling facilities. Metro is committed to an electric bus fleet by 2030. The BRT coaches would utilize charging facilities already planned for this and other maintenance and storage facilities. Any upgrades needed to substations, transformers, conduits, and charging facilities would be programmed into Metro's capital improvement plans for its fleet and developed over time. The BRT service's fleet of zero-emission electric buses would be charged overnight at the maintenance and storage facility where the buses are parked. In addition, electric charging equipment would be provided at both ends of the BRT route, at the North Hollywood B/G Line (Red/Orange) and PCC, for the opportunity to boost the charge on the buses between runs.

Construction under the Proposed Project would involve sidewalk modifications as well as the installation of stations along the route. Emissions sources include but are not limited to equipment, truck trips for debris disposal and material delivery, and worker commute trips. Consistent with Metro's Green Construction Policy, Proposed Project construction would require Tier 4-certified construction equipment. The SCAQMD significance thresholds are based on the maximum daily emissions of a project. Therefore, for the purposes of this impact analysis, the maximum single-day construction activity for the Proposed Project was modeled.

Emissions for a scenario characterizing maximum daily activity intensity along the Proposed Project corridor during construction were estimated using the SCAQMD-recommended CalEEMod, version 2016.3.2.

**Table 3.3-10** shows potential criteria pollutant emissions during the calendar year of 2022. Any construction work in a later year would generally produce less emissions given turnover of older construction equipment over time in favor of new, clear-burning engines. Further, any concurrent construction of another site could increase emissions, but would not exceed these regional thresholds of significance. Finally, Metro’s Green Construction Policy requires construction to use Tier 4 construction equipment; however, in order to provide the most conservative analysis, the estimates of construction emissions do not include this measure. As a result, maximum daily construction emissions would likely be lower than those provided in **Table 3.3-10**. Proposed Project construction emissions would not exceed the SCAQMD’s regional construction thresholds for any criteria air pollutant and, as a result, emissions would be less than significant. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

**Table 3.3-10 – Maximum Daily Construction Emissions**

Emissions Source	Daily Emissions in Pounds per Day					
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Off-Road Equipment	4.52	45.83	45.38	0.08	2.24	2.08
On-Site Paving	0.05	-	-	-	-	-
On-Road Haul Trucks	0.08	2.52	0.66	0.008	0.18	0.06
On-Road Vendor Trucks	0.03	0.92	0.27	0.002	0.07	0.02
On-Road Worker Trips	0.27	0.18	2.04	0.006	0.68	0.18
Total Emissions	4.95	49.45	48.34	0.09	3.16	2.34
SCAQMD Regional Thresholds	75	100	550	150	150	55
Exceed?	No	No	No	No	No	No

**SOURCE:** Impact Sciences, *North Hollywood to Pasadena BRT Project Air Quality Report*, 2020.

### Operation

**Less-Than-Significant Impact.** The Proposed Project would result in indirect criteria air pollutant emissions from, brake and tire wear from transit buses, and the reduction of motor vehicle use throughout the surrounding region as motorists shift from vehicles to public transit.

Under the Proposed Project, ZEV buses are expected to travel 1,348,500 annual revenue miles in 2042 as well as an additional 267,180 “deadhead” miles to the El Monte Metro Division, or other Metro division in closer proximity to the Project corridor, for battery charging. Any other overnight facility would be closer to the Project corridor, resulting in less emissions from “deadhead” miles. Implementation of Metro’s NextGen service and implementation of the Proposed Project would reduce service from existing bus lines that overlap with the proposed BRT route. Metro Line 180 connects Hollywood with Pasadena and would be restructured to reduce service along the route by approximately 303,124 annual revenue miles. Metro anticipates having a 100 percent electric fleet by 2030, which is accounted for in the emissions analysis.

As summarized in **Table 3.3-11**, the operation ZEVs for the BRT service combined with the service reduction from Metro Line 180 would result in negligible increases in PM<sub>10</sub> and PM<sub>2.5</sub> emissions in 2042, exclusively from tire wear and break wear. .

**Table 3.3-11 – Maximum Daily Operational Emissions**

Emissions Source	Daily Emissions in Pounds per Day					
	ROG	NOx	CO	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>2042 BASELINE EMISSIONS</b>						
Regional Traffic Emissions	19,045	140,871	664,736	2,919	1,682	1,582
<b>PROPOSED PROJECT</b>						
ZEV Operations	-	-	-	-	0.83	0.31
Displaced Metro Line 180 Operations	-	-	-	-	0.19	0.07
Regional Traffic Emissions	19,042	140,847	664,624	2,918	1,681	1,582
<b>NET OPERATIONAL EMISSIONS</b>						
Total Emissions	-3	-24	-112	-1	-0.36	0.24
<b>SCAQMD Thresholds</b>	<b>55</b>	<b>55</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
<i>Exceed?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

**SOURCE:** Impact Sciences, *North Hollywood to Pasadena BRT Project Air Quality Report*, 2020.

More significantly, the implementation of BRT service in this corridor would also reduce emissions emitted by the overall vehicle fleet traveling within the study area, as mode share shifts away from auto use to public transit. In operational year 2042, BRT service would reduce 30,070,673 VMT annually as compared to conditions without BRT service), a 0.017 percent reduction in VMT that would result in concomitant reductions in start, hot soak, and running emissions from the vehicle fleet. As summarized in **Table 3.3-11**, the Proposed Project would result in a net decrease of ROG, NO<sub>x</sub>, CO, and PM<sub>2.5</sub>. PM<sub>10</sub> emissions would slightly increase as a result of operations. The increase in daily PM<sub>10</sub> emissions is significantly lower than the SCAQMD’s thresholds. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

When compared to the Existing condition, the Existing plus Project condition would also reduce overall emissions in the study area. As shown in **Table 3.3-9**, BRT services would reduce 25,190,164 VMT annually when compared to the Existing condition. This would also result in reductions in start, hot soak, and running emissions from the vehicle fleet in the study area. There would be some criteria pollutant emissions from the initial use of CNG buses at the start of service in 2022. Specifically, the operation of 20 CNG buses would emit 0.78\_lbs/day of ROG, 4.14 lbs/day of NOx, 421 lbs/day of CO, 0.03\_lbs/day of PM<sub>10</sub>, and 0.03 lbs/day of PM<sub>2.5</sub>. When considering overall fleet emissions reductions associated with mode shift from passenger vehicles to public transit, initial BRT service would result in -5.08\_lbs/day of ROG, -32.62 lbs/day of NOx, -160 lbs/day of CO, -0.55\_lbs/day of PM<sub>10</sub>, and -0.48 lbs/day of PM<sub>2.5</sub>. Like the 2042 scenarios, these daily emissions would not exceed SCAQMD operations thresholds, and would be considered less than significant.

Transportation modeling was also completed for the route options. The regional VMT for implementing the design options differed from the Proposed Project by approximately 0.003 percent. Therefore, the implementation of any route options would still result in a reduction in criteria pollutant emissions that would not exceed SCAQMD's regional operational thresholds of significance and would be considered less than significant.

These reductions in regional emissions would also reduce the ambient levels of criteria pollutants and produce public health benefits. Reductions in ozone precursor emissions will contribute to reductions in respiratory infections, asthma, and other ailments associated with ozone exceedances. Reductions in other criteria pollutants will reduce heart and lung diseases associated with particulate emissions and heart disease associated with carbon monoxide, among other health benefits.

### Mitigation Measures

No mitigation measures are required.

### Significance of Impacts after Mitigation

Less than significant impact.

### Impact 3.3-3) Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?

#### Construction

**Less-than-Significant Impact.** The following analysis assesses the potential for sensitive receptors to be exposed to substantial pollutant concentrations during construction activities.

**Toxic Air Contaminants.** The greatest potential for TAC emissions would be related to diesel particulate matter emissions associated with heavy equipment operations during construction activities. Construction activities associated with the Proposed Project would be sporadic and short-term in nature. Metro has committed to using equipment outfitted with engines meeting Tier 4 emissions standards that would substantially reduce diesel PM emissions and associated exposures. Construction would travel along the route and would not be in any one location over those 30-months. The assessment of cancer risk is typically based on a 70-year exposure period; however, the Proposed Project's construction is anticipated to have a duration of approximately 30 months. Because exposure to diesel exhaust would be well below the 70-year exposure period, construction activities would not result in an elevated cancer risk to exposed persons because of the short-term nature of construction. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

**Localized Pollutant Emissions.** The SCAQMD has developed a set of mass emissions rate look-up tables that can be used to evaluate localized impacts that may result from construction LSTs. A single-day construction scenario was prepared in CalEEMod in order estimate the

maximum daily activity that may occur upon construction along the route. **Table 3.3-12** summarizes the localized emissions associated with construction activity at a typical station site.

**Table 3.3-12 – Localized Construction Emissions per Site – Maximum Pounds per Day**

Construction Activity	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Demolition	10.31	11.58	0.55	0.52
Site Preparation	13.87	7.92	1.58	0.59
Station Construction	9.75	13.56	0.46	0.42
Roadway/Sidewalk Paving	12.01	17.35	0.60	0.55
Roadway Restriping	5.33	8.09	0.25	0.24
Maximum Daily Localized Emissions	13.87	17.35	1.58	0.59
East San Fernando Valley SRA LST	80	498	5	3
West San Gabriel Valley SRA - LST	69	535	4	3
South San Gabriel Valley SRA - LST	83	760	5	4
Exceed?	No	No	No	No

**SOURCE:** Impact Sciences, *North Hollywood to Pasadena BRT Project Air Quality Report*, 2020.

The on-site air pollutant emissions on the peak day of construction would not exceed the applicable LSTs in any of the three SRAs. Metro’s Green Construction Policy requires construction to use Tier 4 construction equipment; however, because the Policy allows for exceptions to this requirement under specific, documented circumstances, in order to provide the most conservative analysis, **Table 3.3-12** construction emissions do not include this measure. As a result, emissions are likely to be lower than what is presented in the table. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

### Operations

**Less-than-Significant Impact.** The following analysis assesses the potential for sensitive receptors to be exposed to substantial pollutant concentrations during operational activities.

**Localized Pollutant Emissions.** Operational activities would not include localized emissions. The only potential source of localized emissions associated with bus operations would be pollutants from bus idling. The Proposed Project would include ZEVs and there would be no exhaust emissions. There is no potential for localized emissions to exceed the SCAQMD significance thresholds.

**Carbon Monoxide Hot-Spot Analysis.** The *SCAQMD CEQA Air Quality Analysis Handbook* recommends the evaluation of potential CO hot spots that may occur from traffic congestion resulting from implementation of projects with substantial trip generation or modifications to roadway networks. Based on ambient air monitoring data collected by SCAQMD, SCAB has continually met State and federal ambient air quality standards for CO since 2003. As such, SCAB was reclassified to attainment/maintenance status from serious nonattainment, effective June 11, 2007. While the Final 2016 AQMP is the most recent AQMP, no additional regional or hot-spot CO modeling has been conducted to demonstrate attainment of the 8-hour average CO standard since the analysis provided in the 2003 AQMP.

Since local CO concentrations are a function of (1) intersection traffic volumes, (2) peak-hour intersection LOS, (3) CO emissions factors [idle and grams per mile], and (4) the ambient CO background concentration, it is possible to identify which, if any, of the most congested intersection locations anticipated under Proposed Project have the potential to violate State or federal CO standards. As shown in **Table 3.3-13**, maximum intersection approach volumes under the Proposed Project would not exceed the maximum total intersection approach volume identified for a 2003 attainment demonstration intersection during the peak periods. Refer to the Air Quality Technical Report for a comprehensive list of intersection volumes.

USEPA Air Data provides the maximum 8-hour CO concentrations at monitoring stations within Los Angeles County. The closest monitoring stations to the Proposed Project include Pasadena – South Wilson, Los Angeles – North Main Street, and Reseda. The maximum CO background concentrations in 2020 at Pasadena – South Wilson, Los Angeles – North Main Street, and Reseda are 0.9 parts per million (ppm), 1.3 ppm, and 1.4 ppm, respectively.<sup>4</sup> These background concentrations are significantly lower than the 8-hour CO ambient air standard of 9.0 ppm as well as the predicted 8-hour background concentration of 7.8 ppm used for the 2003 attainment demonstration analysis.

Maximum intersection approach volumes under the Proposed Project would be over 40 percent less than the maximum intersection approach volume used for the 2003 AQMP attainment demonstration. Volumes would be less in the Existing plus Project condition without the ambient growth attributed to future years. Furthermore, the background concentration of 8-hour CO has significantly reduced as compared to the 2003 AQMP. As such, there would be no potential for CO emissions at any intersection location to result in an exceedance of either the CAAQS or NAAQS for CO. Therefore, the Proposed Project would not result in a significant impact related to operational activities.

**Toxic Air Contaminant Emissions.** Operation of the proposed BRT service would utilize zero-emission buses that do not combust fuel that could create TAC emissions from diesel or other fuels. Further, the enhancement of public transit service over this 18-mile corridor would generally reduce use of passenger vehicles and trucks for travel, as people shift increasingly to public transit. As such, the long-term operation of BRT service would reduce TAC emissions from motor vehicles. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities. The Proposed Project may require CNG buses during the opening years of BRT service; however, due to the decrease in VMT from the overall vehicle fleet, the Proposed Project would help reduce TAC emissions along the service corridor and impacts from TAC emissions would be considered less than significant. These reductions in localized emissions would also reduce the ambient levels of criteria pollutants and produce public health benefits. This includes reducing the incidence of heart and lung diseases associated with localized particulate emissions, heart disease associated with carbon monoxide, and chronic and acute health impacts associated with exposure to TACs.

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<sup>4</sup> USEPA, *Monitor Values Report*, <https://www.epa.gov/outdoor-air-quality-data/monitor-values-report>.



**Table 3.3-13 – Comparison of Intersection Total Approach Volumes**

Intersections	Proposed Project									
	AM Peak-Hour Approach Volumes					PM Peak-Hour Approach Volumes				
	South bound	West bound	North bound	East Bound	Total	South bound	West bound	North bound	East Bound	Total
N. Buena Vista & W. Magnolia Blvd.	1,641	1,005	848	956	4,450	1,077	1,274	1,332	1,123	4,806
W. Magnolia Blvd. & Victory Blvd.	1,392	934	777	918	4,021	1,401	1,014	1,234	1,316	4,965
Maximum Volumes	4,450					4,965				
<b>ATTAINMENT DEMONSTRATION INTERSECTION</b>										
Wilshire Blvd./ Veteran Ave.	721	1,830	560	4,951	8,062	1,400	3,317	933	2,069	7,719
Sunset Blvd./ Highland Ave.	2,304	1,342	1,551	1,417	6,614	1,832	1,540	2,238	1,764	7,374
La Cienega Blvd./ Century Blvd.	1,384	1,890	821	2,540	6,635	2,029	2,728	1,674	2,243	8,674
Long Beach Blvd./ Imperial Highway	479	1,760	756	1,217	4,212	944	1,400	1,150	2,020	5,514
Maximum Volumes	8,062					8,674				
Percent Change: Maximum Build Alternative vs. Maximum Attainment Demonstration Total Approach Volumes	-45%					-43%				

**SOURCE:** Impact Sciences, *North Hollywood to Pasadena BRT Project Air Quality Report*, 2020.

### Mitigation Measures

No mitigation measures are required.

### Significance of Impacts after Mitigation

Less than significant impact.

**Impact 3.3-4)** Would the Proposed Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

### Construction

**Less-Than-Significant Impact.** Construction activities associated with the Proposed Project may generate detectable odors from heavy-duty equipment exhaust and architectural coatings. However, construction-related odors would be short-term in nature and cease upon project completion. In addition, the Proposed Project would be required to comply with the California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would reduce the detectable odors from heavy-duty equipment exhaust. The Proposed Project would also be required to comply with the SCAQMD Rule 1113 – Architectural Coating, which would minimize odor impacts from ROG emissions during architectural coating. Any odor impacts to existing adjacent land uses would be short-term and not substantial. Nuisances can be reported to the local jurisdiction for enforcement as well. The Proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

### Operations

**Less-Than-Significant Impact.** The *SCAQMD CEQA Air Quality Handbook* (1993) identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. Stations would include waste bins that would be maintained on a regular basis and would not typically generate significant odors. The Proposed Project would not include any of the land uses that have been identified by the SCAQMD as odor sources. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

### Mitigation Measures

No mitigation measures are required.

### Significance of Impacts after Mitigation

Less than significant impact.