# 3.2 Air Quality

This section is based on the *Sepulveda Transit Corridor Project Air Quality Technical Report*, incorporated into this DEIR as Appendix C.

## 3.2.1 Regulatory and Policy Framework

### 3.2.1.1 Federal

#### Clean Air Act

The Federal Clean Air Act (CAA) is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare. An air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without any harmful effects on people or the environment, thus, it is used as a threshold metric to define clean air (CARB, 2024a). The EPA administers national programs to monitor concentrations of certain air pollutants and control emissions from major sources. Through the CAA, the EPA regulates emission sources that are under the exclusive authority of the federal government, such as certain types of locomotives, as well as mandating various emission standards, including those for on-road vehicles (EPA, 2013).

#### Criteria Air Pollutants and National Ambient Air Quality Standards

The CAA requires EPA to set and revise NAAQS for certain common and widespread pollutants, known as "criteria pollutants," and provides authority for the agency to add additional pollutants. Standards are in effect today for six pollutants: ozone ($O_3$), nitrogen dioxide ($NO_2$), carbon monoxide (CO), sulfur dioxide ($SO_2$), particulate matter (PM) (regulated as subsets of particles with diameter less than 2.5 microns and less than 10 microns and are denoted as $PM_{2.5}$ and $PM_{10}$, respectively), and lead (Pb). The current NAAQS are presented in Table 3.2-1 along with the corresponding averaging times. Also shown in Table 3.2-1 are the California Ambient Air Quality Standards (CAAQS), which are generally more stringent than the federal standards and are discussed in greater detail in Section 3.2.1.2. In February 2024, the federal $PM_{2.5}$ annual standard was revised from 12 micrograms per cubic meter ($\mu g/m^3$) to 9 $\mu g/m^3$, making the federal standard more stringent than the state standard of 12 $\mu g/m^3$.

**Table 3.2-1. Federal and California Ambient Air Quality Standards**

| Pollutant | Averaging Time | NAAQS | CAAQS |
|---|---|---|---|
| Ozone ($O_3$) | 1-Hour | — | 0.09 ppm (180 $\mu g/m^3$) |
| | 8-Hour | 0.07 ppm (137 $\mu g/m^3$) | 0.070 ppm (137 $\mu g/m^3$) |
| Carbon Monoxide (CO) | 1-Hour | 35 ppm (40 $mg/m^3$) | 20 ppm (23 $mg/m^3$) |
| | 8-Hour | 9 ppm (10 $mg/m^3$) | 9.0 ppm (10 $mg/m^3$) |
| Nitrogen Dioxide ($NO_2$) | 1-Hour | 0.100 ppm (188 $\mu g/m^3$) | 0.18 ppm (339 $\mu g/m^3$) |
| | Annual Average | 0.053 ppm (100 $\mu g/m^3$) | 0.030 ppm (57 $\mu g/m^3$) |
| Sulfur Dioxide ($SO_2$) | 1-Hour | 0.075 ppm (196 $\mu g/m^3$) | 0.25 ppm (655 $\mu g/m^3$) |
| | 24-Hour | 0.14 ppm (180 $\mu g/m^3$) | 0.04 ppm (105 $\mu g/m^3$) |
| Respirable Particulate Matter ($PM_{10}$) | 24-Hour | 150 $\mu g/m^3$ | 50 $\mu g/m^3$ |
| | Annual Average | — | 20 $\mu g/m^3$ |
| Fine Particulate Matter ($PM_{2.5}$) | 24-Hour | 35 $\mu g/m^3$ | — |
| | Annual Average | 9.0 $\mu g/m^3$ | 12 $\mu g/m^3$ |

| Pollutant | Averaging Time | NAAQS | CAAQS |
|---|---|---|---|
| Lead (Pb) | 30-Day Average | — | 1.5 µg/m$^3$ |
| | Rolling 3-Month Average | 0.15 µg/m$^3$ | — |
| Visibility-Reducing Particles | 8-Hour | — | Extinction of 0.23 per kilometer |
| Sulfates | 24-Hour | — | 25 µg/m$^3$ |
| Hydrogen Sulfide | 1-Hour | — | 0.03 ppm (42 µg/m$^3$) |
| Vinyl Chloride | 24-Hour | — | ppm (26 µg/m$^3$) |

Source: CARB, 2016, 2024

— = no standard
µg/m$^3$ = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standard
mg/m$^3$ = micrograms per cubic meter
NAAQS = National Ambient Air Quality Standard
ppm = parts per million

The principal health effects and typical sources of each criteria pollutant are detailed in Table 3.2-2.

**Table 3.2-2. Federal and California Criteria Air Pollutant Effects and Sources**

| Pollutant | Principal Health and Atmospheric Effects | Typical Sources |
|---|---|---|
| Ozone ($O_3$) | High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOCs may also contribute | Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOCs) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes. |
| Respirable Particulate Matter ($PM_{10}$) | Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of $PM_{10}$. | Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources. |
| Fine Particulate Matter ($PM_{2.5}$) | Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$. | Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG. |
| Carbon Monoxide (CO) | CO interferes with the transfer of oxygen to the blood and deprives | Combustion sources, especially gasoline-powered engines and motor |

| Pollutant | Principal Health and Atmospheric Effects | Typical Sources |
|---|---|---|
| | sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless. | vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale. |
| Nitrogen Dioxide ($NO_2$) | Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors. | Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations. |
| Sulfur Dioxide ($SO_2$) | Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility. | Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used. |
| Lead (Pb) | Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Lead is also a toxic air contaminant and water pollutant. | Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads. |
| Visibility-Reducing Particles (VRP) | Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar. | See particulate matter above. May be related more to aerosols than to solid particles. |
| Sulfate | Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles. | Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas. |
| Hydrogen Sulfide ($H_2S$) | Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor. | Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs. |
| Vinyl Chloride | Neurological effects, liver damage, cancer. Also considered a toxic air contaminant. | Industrial processes. |

Source: Caltrans, 2020

### State Implementation Plan

Federal law requires that all states attain the NAAQS. Areas of the state that are designated as "Non-attainment" for one or more of the NAAQS are required under the federal CAA to develop plans meeting specific requirements depending on the severity of the pollution problem. The severity of the pollution problem for "Non-attainment" areas is based on the measured ambient air quality data and the interim design values set for the region. "Non-attainment" areas can be described as "Marginal," "Moderate," "Serious," "Severe-15," "Severe-17," and "Extreme" based on the concentrations measured over recent years. An area must demonstrate continual achievement of the interim design value concentrations in order to be redesignated to a lower "non-attainment" tier. The type of non-attainment designation is based on the amount of reductions in pollutant concentrations that must occur for the NAAQS to be achieved. As part of its enforcement responsibilities, the EPA requires each state with non-attainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards.[1] Failure of a state to reach attainment of the NAAQS by the target date can trigger penalties, including withholding of federal funds.

## 3.2.1.2 State

### California Air Resources Board

The California Air Resources Board (CARB), a department within the California Environmental Protection Agency (CalEPA), is responsible for protecting public health and the environment by regulating air pollution and addressing climate change. Established in 1967 through the Mulford-Carrell Act, CARB oversees efforts to achieve and maintain health-based air quality standards, reduce greenhouse gas (GHG) emissions, and minimize exposure to toxic air contaminants. CARB works in coordination with 35 local air districts in California to regulate stationary and mobile sources of emissions, develop emissions inventories, and monitor air quality to ensure compliance with state and federal standards. It has implemented several landmark programs, including the Low Emission Vehicle (LEV) standards, the Advanced Clean Cars Program, and the Cap-and-Trade Program, which are instrumental in reducing emissions from vehicles, industrial sources, and other sectors. CARB also promotes the use of zero-emission vehicles (ZEVs) and cleaner technologies through its regulatory framework and incentive programs. CARB's policies, many of which exceed federal requirements, serve as a model for air quality and climate change regulations nationwide.

#### *CARB Off-Road Regulation and 2023 Amendment*

The CARB Off-Road Regulation is designed to reduce GHG emissions and criteria air pollutants from in-use off-road diesel equipment, such as construction and industrial machinery. Initially adopted in 2007, the regulation establishes fleet average emissions standards and mandates the phase-out of older, higher-polluting engines, encouraging the transition to cleaner technologies. The regulation applies to fleets operating within California and sets compliance requirements based on fleet size and composition.

The 2023 Amendment to the Off-Road Regulation, taking effect in 2024, introduces stricter emissions limits and accelerates the transition to zero-emission equipment. Key updates include the prohibition of Tier 0 and Tier 1 engines, stricter fleet average emissions standards, and mandates for large fleets to transition a portion of their horsepower to zero-emission equipment (e.g., 10% by 2026 and 25% by

[1] State Implementation Plans forecast a trajectory of emissions reductions to lower ambient concentrations of criteria pollutants.

2030). Additionally, the amendment lowers the operational threshold for low-use equipment and enhances reporting and recordkeeping requirements to improve compliance oversight.

### California Clean Air Act

In addition to being subject to the requirements of the federal CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). In California, the CCAA is administered by California Air Resources Board (CARB) at the state level and by air quality management districts and air pollution control districts at the regional and local levels. CARB is responsible for meeting the state requirements of the CAA, administering the CCAA, and establishing the CAAQS. The CCAA requires all air districts in the state to endeavor to achieve and maintain the CAAQS. In this capacity, CARB conducts research, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. CARB also establishes emissions standards for motor vehicles sold in California, consumer products (i.e., hair spray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

### California Ambient Air Quality Standards

The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. In February 2024, the federal $PM_{2.5}$ annual standard was revised from 12 µg/m$^3$ to 9 µg/m$^3$, making the federal standard more stringent than the state standard of 12 µg/m$^3$. Under the CCAA, areas are designated as non-attainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as non-attainment. Although California law continues to mandate CAAQS, meeting the federal standards has precedence over attainment of the CAAQS, because failure to meet federal standard deadlines may result in federal penalties. The state standards are summarized in Table 3.2-2.

### In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, CARB adopted the Off-Road Vehicle Regulation to reduce diesel particulate matter (DPM) and nitrogen oxides ($NO_x$) emissions from in-use (existing) off-road, heavy-duty diesel vehicles in California. The regulation applies to all self-propelled off-road diesel vehicles of 25 horsepower or greater used in California and most two-engine vehicles (except on-road two-engine sweepers). The regulation also applies to vehicles that are rented or leased (rental or leased fleets). Examples include loaders, crawler tractors, skid steers, backhoes, forklifts, airport ground support equipment, water well drilling rigs, and two-engine cranes. Such vehicles are used in construction, mining, and industrial operations. The regulation does not apply to stationary equipment or portable equipment such as generators. The off-road vehicle regulation establishes emissions performance requirements, establishes reporting, disclosure, and labeling requirements for off-road vehicles, and it limits unnecessary idling. In November 2022, CARB amended the regulation to require fleets to phase out use of the oldest and highest-polluting off-road diesel vehicles in California; to prohibit the addition of high-emitting vehicles to a fleet; and to require the use of R99 or R100 renewable diesel in off-road diesel vehicles. Beginning January 1, 2024, all fleets are required to procure and use renewable diesel in all vehicles owned or operated in California that are subject to the off-road vehicle regulation, with some limited exceptions, including lack of available renewable diesel.

### Truck and Bus Regulation

In December 2008, CARB adopted the Statewide Truck and Bus Regulation that requires installation of PM retrofits on all on-road heavy duty trucks and buses beginning January 1, 2012; replacement of older trucks must start on January 1, 2015. By January 1, 2023, all vehicles need to have 2010 model year engines or equivalent.

### Toxic Air Contaminant Identification and Control Act

CARB's statewide comprehensive air toxics program was established in the early 1980s. According to Section 39655 of the California Health and Safety Code, a toxic air contaminant (TAC) is "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose or present a potential hazard to human health." The Toxic Air Contaminant Identification and Control Act created California's program to reduce exposure to air toxics, and under this Act, CARB is required to prioritize the identification and control of air toxics emissions. In selecting substances for review, CARB must consider criteria relating to the risk of harm to public health, such as the amount or potential amount of emissions, manner of and exposure to usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community.

CARB classified DPM emissions from diesel-fueled engines as TACs in August 1998. Following the identification process, CARB was required by law to determine if there was a need for further control, which led to the risk management phase of the program. For the risk management phase, CARB formed the Diesel Advisory Committee to assist in the development of a risk management guidance document and a risk reduction plan. With the assistance of the Advisory Committee and its subcommittees, CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*.

The Diesel Advisory Committee approved these two documents on September 28, 2000, paving the way for the next step in the regulatory process: the control measure phase. During the control measure phase, specific statewide regulations designed to further reduce DPM emissions from diesel-fueled engines and vehicles have and continue to be evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce DPM emissions.

### Assembly Bill 1346

Assembly Bill (AB) 1346 was signed into law on October 9, 2021 and mandates CARB to adopt regulations prohibiting the sale of new gas-powered, small off-road engines (SOREs), such as those used in lawn equipment and generators, by January 1, 2024, or as soon as feasible. The law aims to reduce air pollution from SOREs, which contribute significantly to smog and greenhouse gas (GHG) emissions. It supports the transition to zero-emission alternatives by providing $30 million in funding for rebate programs to assist small businesses and individuals in purchasing compliant electric-powered equipment. While the law targets new sales, existing equipment can continue to be used, ensuring a phased and economically feasible transition to cleaner technologies.

## 3.2.1.3 Regional

### Southern California Association of Governments Regional Transportation Plan

Federal law (23 United States Code [U.S.C.] Section 134 et seq.) requires that any urbanized area with population of 50,000 or more be guided and maintained by a regional entity known as a Metropolitan

Planning Organization (MPO). The MPO for the Sepulveda Transit Corridor Project (Project) Study Area is the Southern California Association of Governments (SCAG), which also serves as the Regional Transportation Planning Agency. The SCAG region encompasses six counties — Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura — and 191 cities in an area covering more than 38,000 square miles. The Project Study Area spans across portions of southwest Los Angeles County, and Los Angeles County Metropolitan Transportation Authority (Metro) facilities within the SCAG region are accounted for in SCAG regional planning activities.

SCAG is required by federal law to prepare and update a long-range Regional Transportation Plan (RTP) (23 U.S.C. Section 134 et seq.) every four years. California Senate Bill (SB) 375, codified in 2008 in Government Code Section 65080 (b)(2)(B), also requires that the RTP include a Sustainable Communities Strategy (SCS) that outlines growth strategies for land use and transportation and helps reduce emissions from cars and light-duty trucks. SCAG's most recently adopted plan is the *Connect SoCal, 2024–2050 Regional Transportation Plan/Sustainable Communities Strategy* (2024-2050 RTP/SCS) (SCAG, 2024) and was adopted by the SCAG Regional Council on April 4, 2024. It received federal approval from the Federal Highway Administration and Federal Transit Administration on May 10, 2024. The Project is identified in Connect SoCal as the "Sepulveda Pass Transit Corridor Phase 2," RTP ID 1160001 (SCAG, 2020b).

The 2024-2050 RTP/SCS is an update to SCAG's *Connect SoCal, 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy* (2020-2045 RTP/SCS) (SCAG, 2020a). The foundation of the 2020-2045 RTP/SCS was rooted in its "Core Vision" that focused on maintaining and better managing the regional transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit in close proximity and increasing investment in transit and complete streets. SCAG's regional transportation and land use planning initiatives are closely intertwined with improving regional air quality.

Performance of the 2024-2050 RTP/SCS in 2050 is measured by comparing a "Plan" scenario to a "No Plan" scenario, where the No Plan scenario represents 2050 without implementation of the 2024-2050 RTP/SCS. When compared to the No Plan scenario, the Plan scenario would reduce regional vehicle miles traveled (VMT) per capita by 6.3 percent, daily minutes of person delay per capita would decrease from 8.2 minutes to 6.3 minutes, and trips by transit would increase by 1.4 percent. These performance results highlight how implementation of the 2024-2050 RTP/SCS will help reduce mobile source air pollutant emissions.

Most areas within the SCAG region are designated "Non-attainment" or "Maintenance" areas for one or more transportation-related criteria pollutants (i.e., ozone and particulate matter), meaning that the air quality standards have not been met or were not met in the past. Pursuant to the federal CAA, SCAG's 2024-2050 RTP/SCS is required to meet all federal transportation conformity requirements, including regional emissions analysis, financial constraint, timely implementation of transportation control measures, and interagency consultation and public involvement (42 U.S.C. Section 7401 et seq.). The regional emissions analysis for the 2024-2050 RTP/SCS was developed using demographic data and forecasts from California Department of Finance (Population and Housing Estimates for Cities, Counties, and the State-January 1, 2020-2022) in conjunction with a more robust collaborative effort at the local level to refine regional growth projections through the planning horizon of 2050. One of the guiding principles of both the 2020-2045 and 2024-2050 RTP/SCS is to encourage transportation investments that will result in improved air quality and public health. The expansion and enhancement of the regional public transit network and the associated displacement of vehicle trips is a fundamental tenet of the regional planning initiatives to attain the air quality standards.

## South Coast Air Quality Management District Plans, Policies, and Rules

The South Coast Air Quality Management District (SCAQMD) was created for planning, implementing, and enforcing air quality standards for the South Coast Air Basin, which includes all of Orange County; Los Angeles County (excluding the Antelope Valley portion); the western, non-desert portion of San Bernardino County; and the western Coachella Valley and San Gorgonio Pass portions of Riverside County. The South Coast Air Basin is 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 South Coast Air Basin is a subregion within the western portion of the SCAQMD jurisdiction. While air quality in the South Coast Air Basin has improved, the South Coast Air Basin requires continued diligence to meet the air quality standards.

The SCAQMD is tasked with preparing regional programs and policies designed to improve air quality within the South Coast Air Basin, which are assessed and published in the form of the SCAQMD Air Quality Management Plan (AQMP). The AQMP is generally updated every three to four years to evaluate the effectiveness of the adopted programs and policies and to forecast attainment dates for non-attainment pollutants to support the SIP based on measured regional air quality and anticipated implementation of new technologies and emissions reductions. The most recent publication is the 2022 AQMP, which was adopted by the SCAQMD Governing Board on December 2, 2022.

The 2022 AQMP incorporates the latest scientific and technological information and planning assumptions, including Connect SoCal 2020 and updated emission inventory methodologies for various source categories. The 2022 AQMP is focused on attaining the 2015 8-hour ozone standard of 70 parts per million and builds upon the emission reductions strategies stated in previous AQMPs, such as the 2016 AQMP, which focused on demonstrating NAAQS attainment dates for the 2008 8-hour ozone standard, the 2012 annual $PM_{2.5}$ standard, and the 2006 24-hour $PM_{2.5}$ standard, which focused on attaining the 1997 8-hour and 2008 8-hour ozone standards, as well as $PM_{2.5}$ standards.

The 2015 8-hour ozone standard is the most stringent standard to date and an attainment date of 2037 has been established for the South Coast Air Basin. The 2022 AQMP focuses primarily on reducing $NO_X$ emissions as it is the key pollutant in controlling the formation of ozone. Additionally, reducing $NO_X$ emissions would also reduce the secondary formation of $PM_{2.5}$, thus supporting efforts to meet $PM_{2.5}$ standards. The 2022 AQMP states that $NO_X$ emissions would need to be reduced by 67 percent by 2037 to meet the standard. Emission reduction strategies to meet the standard will build upon already strict regulations for stationary and tailpipe sources and will also rely on adoption and implementation of zero emission technologies and low-$NO_X$ technologies.

The AQMP also includes an element that is related to transportation and sustainable communities planning. Pursuant to California Health and Safety Code Section 40450, SCAG has the responsibility of preparing and approving the portions of the AQMP relating to regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. The growth projections that are incorporated into the AQMP inventory for evaluating emission control strategies and determining air quality standards attainment dates are based on analyses prepared for the 2024-2050 RTP/SCS, which is required to be prepared by the MPO in accordance with SB 375. The formulation of the AQMP is a prime example of the correlation and intersectionality of regional transportation planning and air quality planning.

The SCAQMD has a long and successful history of reducing air toxics and criteria pollutant emissions in the South Coast Air Basin. SCAQMD has an extensive control program, including traditional and innovative rules and policies. To date, the most comprehensive study on air toxics in the South Coast Air

Basin is the Multiple Air Toxics Exposure Study V (MATES V), conducted by the SCAQMD. The monitoring program measured more than 30 air pollutants, including both gases and particulates. The monitoring study was accompanied by a computer modeling study in which the SCAQMD estimated the risk of cancer and non-cancer risks from exposure to toxic air pollution throughout the region based on emissions and meteorological data.

The SCAQMD has also established various rules to manage and improve air quality in the South Coast AQMD Rule Book (SCAQMD, 2021a). The City of Los Angeles would be required to comply with all applicable SCAQMD Rules and Regulations pertaining to construction activities, including:

- Regulation IV – Prohibitions: This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events, including the following rules directly applicable to the Project:
  - Rule 401 (Visible Emissions) states that a person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No 1 on the Ringelmann Chart or of such opacity as to obscure an observer's view.
  - Rule 402 (Nuisance) states that a person should not emit 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 cause, or have a natural tendency to cause, injury or damage to business or property.
  - Rule 403 (Fugitive Dust) controls fugitive dust through various best management practices requirements including:
    - applying water in sufficient quantities to prevent the generation of visible dust plumes
    - applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible
    - utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the Project site
    - limiting vehicle speeds on unpaved roads to 15 miles per hour (mph) and maintaining effective cover over exposed areas
  - Rule 403 also prohibits the release of fugitive dust emissions from any active operation, open storage piles, or disturbed surface area beyond the property line of the emission source and prohibits particulate matter deposits on public roadways.
  - Rule 403.2 (Fugitive Dust from Large Roadway Projects) supplements Rule 403 by requiring additional provisions to control fugitive dust when construction of large roadway projects are in close proximity to an area of public exposure or sensitive receptors.
- Regulation XI – Source Specific Standards: Regulation XI sets emissions standards for specific sources, including the following rules most relevant to the Project:
  - Rule 1113 (Architectural Coatings) requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compound (VOC) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

- Rule 1186 ($PM_{10}$ Emissions from Paved and Unpaved Roads, and Livestock Operations) applies to owners and operators of paved and unpaved roads and livestock operations. The rule is intended to reduce $PM_{10}$ emissions by requiring the cleanup of material deposited onto paved roads, use of certified street sweeping equipment, and treatment of high-use unpaved roads.
- Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines) applies to stationary compression ignition (CI) engines greater than 50 brake horsepower and sets limits on emissions and operating hours of these engines. In general, new stationary, emergency standby, diesel-fueled engines greater than 50 brake horsepower are not permitted to operate more than 50 hours per year for maintenance and testing.

### Los Angeles Countywide Sustainability Plan

In 2019, the Los Angeles County Sustainability Office published "Our County", a regional sustainability plan for the communities in Los Angeles County. It outlines what local governments and stakeholders can do to enhance their communities, while reducing damage to the environment. It contains 12 goals focusing on a variety of sectors. Goals relevant to the Project include the following:

- **Goal 1:** Resilient and healthy community environments where residents thrive in place
  - By 2025, decrease average on-road DPM emissions to 80 percent below 2017 levels and reach attainment status with the Federal and State annual $PM_{2.5}$ standard
  - By 2035, decrease average on-road DPM emissions to 100 percent below 2017 levels and reach attainment status with the Federal and State 8-hour ozone standard
- **Goal 7:** A fossil fuel-free LA County
  - By 2025, have 60,000 new public electric vehicle charging stations and 30 percent of all new light-duty private vehicles are zero-emission vehicles
  - By 2035, 70,000 additional public electric vehicle charging stations and 80 percent of all new light-duty private vehicles are zero-emission vehicles
  - By 2045, 100 percent of all new light-duty private vehicles are zero-emission vehicles
- **Goal 8:** A convenient, safe, clean, and affordable transportation system that enhances mobility while reducing car dependency
  - By 2025, increase to at least 15 percent all trips by foot, bike, micromobility, or public transit and reduce average daily VMT per capita to 20 miles
  - By 2035, increase to at least 30 percent all trips by foot, bike, micromobility, or public transit and reduce average daily VMT per capita to 15 miles
  - By 2045, increase to at least 50 percent all trips by foot, bike, micromobility, or public transit and reduce average daily VMT per capita to 10 miles

### Los Angeles County Metropolitan Transportation Authority Green Construction Policy

Construction contractors will be required to comply with the provisions of the Los Angeles County Metropolitan Transportation Authority (Metro) *Green Construction Policy* to reduce harmful air pollutant emissions (particularly particulate matter and nitrogen oxides [$NO_x$]) during Metro construction projects (Metro, 2011a). Through adopting the *Green Construction Policy*, Metro

committed to the following construction equipment requirements, construction best management practices, and implementation strategies for all construction projects performed on Metro properties or within Metro right-of-way:

- All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 4 off-road emission standards at a minimum. In addition, if not already supplied with a factor-equipped diesel particulate filter, all construction equipment shall be outfitted with Best Available Control Technology devices certified by CARB achieving no less than the equivalent of a Level 3 diesel emission control strategy.
- All on-road heavy-duty diesel trucks or equipment with a gross vehicle weight rating of 19,500 pounds or greater shall comply with EPA 2007 on-road emission standards for particulate matter and $NO_X$ (0.01 grams per brake horsepower hour [g/bhp-hr] and 1.2 g/bhp-hr, respectively).
- Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Where access to the power grid is not available, on-site generators must meet the following standards:
  - Meet a 0.01 g/bhp-hr standard for PM, or
  - Be equipped with best available control technology for particulate matter emissions reductions
- Best management practices shall include, at a minimum the following:
  - Use of diesel particulate traps or best available control technology, as feasible
  - Use renewable diesel for all diesel engines
  - Maintain equipment according to manufacturer's specifications
  - Restrict idling of construction equipment and on-road heavy-duty trucks to a maximum of five minutes when not in use (CARB exceptions apply)
  - Maintain a buffer zone that is a minimum of 1,000 feet between truck traffic and sensitive receptors, where feasible
  - Work with local jurisdictions to improve traffic flow by signal synchronization during construction hours, where feasible
  - Configure construction parking to minimize traffic interference, where feasible
  - Enforce truck parking restrictions, where applicable
  - Prepare haul routes that conform to local requirements to minimize traversing through congested streets or near sensitive receptor areas
  - Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, as feasible
  - Schedule construction activities that affect traffic flow on the arterial system to off-peak hours to the extent practicable
  - Use electric power in lieu of diesel power where available
  - Maintain traffic speeds on all unpaved areas at or below 15 mph

All Metro construction project solicitations shall include provisions authorizing enforcement of the requirements of the *Green Construction Policy*. Contractors operating under Metro agreements shall provide certified statements and documentation ensuring that equipment and vehicles employed to complete construction activities conform to the requirements listed above.

## Metro Countywide Sustainability Planning Program

Over the past 15 years, Metro has developed policies directed toward controlling emissions and enhancing energy efficiency. The *Energy Conservation and Management Plan* (ECMP) (Metro, 2011b) is a strategic blueprint for proactively guiding energy use in a sustainable, cost-effective, and efficient manner. The ECMP complements Metro's 2007 *Energy and Sustainability Policy* (Metro, 2007a), focusing on electricity for rail vehicle propulsion, electricity for rail and bus facility purposes, natural gas for rail and bus facility purposes, and the application of renewable energy. The ECMP addresses current and projected energy needs based on 2010 utility data and existing agency plans to meet increasing ridership through system expansion and new facility construction incorporating Measure R initiatives.

Metro prepares annual energy and resource reports to provide evaluations on the effectiveness of ECMP strategies. The most recent iteration is the *2019 Energy and Resource Report* (Metro, 2019b), which analyzes the sustainability and environmental performance of Metro's operational activities during the 2018 calendar year. Relative to 2017, Metro bus fleet operations in 2018 reduced VOC emissions by 7 percent, $NO_X$ emissions by 3 percent, and particulate matter emissions by 7 percent. These achievements are testaments to the effectiveness of the ECMP. The *2019 Energy and Resource Report* will be the final report in its current format as Metro moves toward preparing an overall agency-wide sustainability report as part of Moving Beyond Sustainability (Metro, 2020a) as discussed herein.

In addition to the annual energy and resource reports, Metro expanded its sustainability planning program through the following initiatives: the Metro *Countywide Sustainability Planning Policy and Implementation Plan* (Metro, 2012), *the Resiliency Indicator Framework Report* (Metro, 2015), the *Climate Action and Adaptation Plan* (CAAP) (Metro, 2019c), and *Moving Beyond Sustainability* (Metro, 2020a). *Moving Beyond Sustainability* was published as the culmination of over a decade of policies, plans, initiatives, and reporting to develop a more efficient and equitable transportation network, which builds upon the goals and strategies established in the 2019 CAAP, including reducing Metro's systemwide emissions to levels 79 percent below 2017 levels by 2030 and 100 percent below 2017 levels by 2050. *Moving Beyond Sustainability* outlines a comprehensive sustainability strategy through 2030, and also identifies longer term goals.

### *Moving Beyond Sustainability*

*Moving Beyond Sustainability* is outlined in a hierarchical framework of goals, targets, strategies, and actions to organize the measures, programs, and projects comprising Metro's mission and vision. The plan is organized into topical strategic focus areas, including water quality and conservation; solid waste; materials, construction, and operations; energy resource management; emissions and pollution control; resilience and climate adaptation; and economic and workforce development. Implementing strategies in *Moving Beyond Sustainability* will reduce criteria pollutant emissions, such as electrifying its bus fleets.

In addition, Metro's *Moving Beyond Sustainability – Sustainability Strategic Plan 2020* (Moving Beyond Sustainability) (Metro, 2020a) requires that contractors use renewable diesel for all diesel engines. The use of renewable diesel reduces the negative health impacts from diesel exhaust. For the Crenshaw/Los Angeles International Airport (LAX) project, the reduction in emissions for 2017 was equivalent to removing over 15,000 cars from the road (Metro, 2020a). This plan also sets targets for achieving

Leadership in Energy and Environmental Design (LEED) Silver certification for all new facilities over 10,000 square feet achieving Envision certification where LEED is not applicable; and designing and building 100 percent of capital projects to California Green Building Standards (CALGreen) Tier 2 standards.

***Metro Construction and Demolition Debris Recycling and Reuse Policy***

Metro published its Construction and Demolition Debris Recycling and Reuse Policy to encourage responsible practices that will enhance reliance on recyclable and recycled products and reduce environmental impacts from waste disposal in landfills (Metro, 2007b). The policy dictates that Metro must give preference to recyclable and recycled products in the selection of construction materials to the maximum extent feasible during design and construction of proposed projects, as well as mandating that Metro shall not use any landfill or recycling facility that does not present and maintain acceptable documentation indicating their legitimacy for disposal or diversion purposes. Construction debris or waste that cannot be recycled or reused on-site shall be manifested, transported, and disposed to the most appropriate facility. Metro shall ensure that any material used in the design or construction of all structures would not adversely affect the performance, safety, or the environment of the transportation system.

***Metro Environmental Policy***

Metro's Environmental Policy was prepared to provide guidance in identifying potential environmental impacts generated by:

- Development activities and developing mitigation measures to address those impacts
- Operating and maintaining Metro vehicles and facilities to minimize negative impacts on the environment
- Reducing consumption of natural resources; and
- Reducing and/or diverting the amount of solid waste going to landfills.

Metro is committed to planning and constructing projects and operating and maintaining facilities and vehicles in a manner that will protect human health and the environment. Strategies outlined in the Environmental Policy to reduce air quality impacts include: compliance with all environmental, federal, state, and local laws and regulations; restoration of the environment by providing mitigation, corrective action, and monitoring to ensure that environmental commitments are implemented; avoidance of environmental degradation by minimizing releases to air, water, and land; prevention of pollution and conservation of resources by reducing waste and reusing materials; and ensuring that the planning, design, construction and operation of facilities and services consider environmental protection and sustainable features.

### 3.2.1.4 Local

### City of Los Angeles General Plan

***Air Quality Element***

The principal objective of the Air Quality Element of the City of Los Angeles General Plan is to aid the region in attaining the state and federal ambient air quality standards while continuing economic growth and improvement in the quality of life afforded to City of Los Angeles residents (LA County Planning, 1992). The Air Quality Element also documents how the City of Los Angeles will implement

local programs contained in the General Plan. Goals, objectives, and policies of the Air Quality Element applicable to the Project are listed in Table 3.2-3.

**Table 3.2-3. City of Los Angeles General Plan – Relevant Air Quality Goals, Objectives, and Policies**

| Goal/Objective/Policy | Descriptions |
|---|---|
| **Goal 1** | Good air quality and mobility in an environment of continued population growth and healthy economic structure. |
| Objective 1.1 | It is the objective of the City of Los Angeles to reduce air pollutants consistent with the regional Air Quality Management Plan, increase traffic mobility, and sustain economic growth. |
| Objective 1.3 | It is the objective of the City of Los Angeles to reduce particulate air pollutants emanating from unpaved areas, parking lots, and construction sites. |
| Policy 1.3.1 | Minimize particulate matter emissions from construction sites. |
| **Goal 3** | Efficient management of transportation facilities and system infrastructure using cost-effective system management and innovative demand management techniques. |
| Objective 3.2 | It is the objective of the City of Los Angeles to reduce vehicular traffic during peak periods. |
| Policy 3.2.1 | Manage traffic congestion during peak periods. |
| **Goal 4** | Minimize impact of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation, and air quality. |
| Objective 4.1 | It is the objective of the City of Los Angeles to include the regional attainment of ambient air quality standards as a primary consideration in land use planning. |
| Policy 4.1.1 | Coordinate with all appropriate regional agencies the implementation of strategies for the integration of land use, transportation, and air quality policies. |
| Objective 4.2 | It is the objective of the City of Los Angeles to reduce vehicle trips and vehicle miles traveled associated with land use patterns. |
| Policy 4.2.1 | Revise the City's General Plan/Community Plans to achieve a more compact, efficient urban form and to promote more transit-oriented development and mixed-use development. |
| Policy 4.2.2 | Improve accessibility for the City's residents to places of employment, shopping centers and other establishments. |
| Policy 4.2.3 | Ensure that new development is compatible with pedestrians, bicycles, transit, and alternative fuel vehicles. |
| Policy 4.2.5 | Emphasize trip reduction, alternative transit, and congestion management measures for discretionary projects. |

Source: LA County Planning, 1992

***Plan for a Healthy Los Angeles***

The *Plan for a Healthy Los Angeles* is a comprehensive initiative aimed at integrating health and wellness into the city's long-term growth and development strategies. Formally adopted in 2015 and updated in 2021, this plan is a part of the city's General Plan and emphasizes creating healthier communities through several key objectives and policies that include the following (DCP, 2021):

- **Access to Open Space:** Promoting the availability of parks and recreational areas to enhance physical activity and mental well-being.
- **Healthy Housing:** Ensuring that housing policies support health through safe, affordable, and accessible housing options.

- **Active Transportation:** Encouraging walking, cycling, and the use of public transportation to reduce pollution and promote physical activity.
- **Public Safety:** Implementing measures to improve safety in neighborhoods, thereby reducing injuries and enhancing community well-being.
- **Clean Air:** Focusing on reducing air pollution to protect respiratory health and overall quality of life.

### City of Los Angeles Mobility Plan 2035

An Element of the *City of Los Angeles General Plan,* the Mobility Plan 2035, includes goals, objectives, policies, and guidelines for the City of Los Angeles to pursue in maintaining a balanced, efficient, and equitable transportation network (DCP, 2016). As an update to the *City of Los Angeles's General Plan* Transportation Element (last adopted in 1999), Mobility Plan 2035 incorporates Complete Street principles and outlines the policy foundation for how future generations of residents will interact with their streets. Chapter 5: Clean Environments and Healthy Communities includes an objective to reduce VMT by 5 percent every 5 years, up to 20 percent by 2035, which would also reduce criteria pollutants and GHG emissions. Strategies to achieve the VMT reductions include land uses policies that focus on shortening distances between housing, jobs, and services; offering more attractive non-vehicle alternatives, such as transit; and pricing mechanisms that encourage commuters to consider alternatives to driving alone.

### City of Los Angeles Department of Transportation Strategic Plan

The *LADOT Strategic Plan Update* lays out goals, plans, and policies of the Los Angeles Department of Transportation (LADOT) to address the City of Los Angeles' future transportation needs, especially in regard to equity, efficiency, climate resilience, and carbon emission reduction (LADOT, 2020). Relevant to the Project are the following policies: increase active transportation infrastructure; reduce VMT and emissions from surrounding transportation network (which lead to reductions in criteria pollutant emissions); and increase equitable mobility and access options.

## 3.2.2 Methodology

### 3.2.2.1 Regional Construction Emissions

Construction of project alternatives would generate emissions of volatile organic compounds (VOCs)[2], $NO_X$, CO, sulfur oxides ($SO_X$), $PM_{10}$, and $PM_{2.5}$ that could result in short-term air quality effects. Emissions would be generated from off-road equipment; mobile sources including worker vehicles, vendor trucks, and haul trucks; fugitive dust emissions during demolition, site grading and earth movement activities, and concrete batch plant operations; paving, and application of architectural coatings. Regional emissions include emissions generated from on-site sources (e.g., off-road equipment) operating within the construction site boundaries and off-site sources, primarily mobile sources (e.g., haul truck travel). The emission estimation approach for each emission source is discussed in the following sections.

Construction emissions were estimated using a spreadsheet approach that incorporated emission factors and methodologies from the California Emissions Estimator Model (CalEEMod) (CAPCOA, 2022), version 2022.1.1.24, CARB EMission FACtors model (EMFAC2021), version 1.0.2, and the EPA's Compilation of Air Pollutant Emission Factors (AP-42). CalEEMod is a model developed by the California Air Pollution Control Officers Association (CAPCOA) that quantifies ozone precursors, criteria pollutants, and GHG emissions from construction and operation of new land use development and linear projects in

[2] The terms VOC and ROG (reactive organic gases) are used interchangeably. SCAQMD uses VOC, and CalEEMod uses ROG.

California; EMFAC2021 is a model developed and used by CARB to assess emissions from on-road vehicles including cars, trucks, and buses in California; and AP-42, while not a model, contains emissions factors and process information for more than 200 air pollution source categories, some of which are incorporated into CalEEMod's calculation methods.

The emissions modeling for each project alternative was based on alternative-specific construction data (schedule, phasing, workday hours, equipment quantities, truck volumes, etc.) provided by developers of each of the alternatives. Construction data for the project alternatives went through a collaborative process with the environmental team to develop reasonable construction assumptions based on current phases of design plans. Where alternative-specific data were not available, reasonable assumptions based on similar infrastructure/transit projects and default values from CalEEMod were applied in the analysis. Based on the scale of project alternatives and progress in design development, conservative construction assumptions were used for each project alternative and would likely yield conservative emissions estimates. Additionally, the construction assumptions used for the air quality analysis of each project alternative were also used in the greenhouse gas emissions analysis.

Construction emissions can vary from day to day, depending on the intensity and specific type of construction activity. The peak daily regional emissions are forecast values for the worst-case day and do not represent the emissions that would occur during every day of construction. Peak daily emissions accounted for individual construction phases that may overlap on a given day. The peak daily regional emissions for each project alternative were compared to SCAQMD regional significance thresholds for construction to determine impacts on regional air quality. Details regarding construction data and emission calculations for each project alternative are provided in *Sepulveda Transit Corridor Project Air Quality Technical Report* (Metro, 2025a).

### Off-Road Equipment

Project construction would utilize a variety of diesel-powered off-road equipment (e.g., cranes, bulldozers, excavators, etc.) throughout the construction period of each project alternative. Emission factors and load factors for off-road equipment were obtained from CalEEMod and did not incorporate the potential use of renewable diesel, as outlined in Metro's *Green Construction Policy*. Consequently, the estimated emissions from off-road construction equipment may be conservative, as the analysis does not account for potential reductions resulting from contractors utilizing renewable diesel to power on-site equipment.

Off-road equipment emissions were estimated based on the equipment activity data which included the equipment quantity, horsepower (hp), load factor, and daily usage (hours per day). The construction analysis assumed that all off-road equipment greater than or equal to 50 hp would meet Tier 4 Final engine specifications in accordance with Metro's *Green Construction Policy*, thus, the emissions analysis used Tier 4 Final emission factors obtained from CalEEMod. For off-road equipment less than 50 hp, emission factors were based on the CalEEMod fleet average.

### Mobile Sources

Mobile source emissions would be generated from worker vehicles, vendor trucks, and haul trucks commuting to and from the construction worksites throughout the construction period of each project alternative. Mobile sources would generate emissions from different processes including exhaust (fuel combustion), evaporative, and fugitive dust. Consistent with CalEEMod methodology, the worker vehicle fleet mix consisted of 25 percent light-duty autos (LDA), 50 percent light-duty trucks type 1 (LDT1), and 25 percent light-duty trucks type 2 (LDT2). Based on EMFAC2021 data, the majority of LDA, LDT1, and

LDT2 vehicle categories were gasoline powered; therefore, worker vehicle emissions were conservatively based on gasoline powered vehicles.

Consistent with CalEEMod, the vendor truck fleet mix consisted of 50 percent medium-heavy duty trucks (MHDT) and 50 percent heavy-heavy duty trucks (HHDT). The vendor truck fleet would also apply to water trucks used for dust control. The haul truck fleet mix consisted of 100 percent HHDT. Based on EMFAC2021 data, the majority of MHDT and HHDT vehicle categories were diesel powered; therefore, vendor and haul truck emissions were conservatively based on diesel-powered trucks. The following sections provide details on the vehicle processes that are accounted for in the EMFAC2021 model.

***Exhaust Emissions***

Exhaust emissions would be generated from fuel combustion of gasoline and diesel during vehicle travel, as well as engine starting and idling. Exhaust emissions were estimated based on EMFAC2021 emissions factors for the running (i.e., traveling), starting, and idling processes combined with the daily vehicle activity data (number of trips and trip lengths).

On-site exhaust emissions would be generated from vendor trucks and haul trucks traversing worksites to deliver or pick-up materials and equipment. Emissions factors for on-site truck travel were based on a speed of 15 miles per hour. A trip length of 0.10 mile was assumed for all on-site truck trips.

Off-site exhaust emissions would be generated from worker vehicles and trucks commuting to and from construction worksites. Emission factors for worker vehicles were based on aggregate vehicle speeds and aggregate model year. Vendor and haul truck emission factors were based on aggregate vehicle speeds and vehicle model years of 2007 or newer to be consistent with Metro's *Green Construction Policy*. Off-site trip lengths (in miles) were based on alternative-specific data or CalEEMod default trip lengths for each mobile source category.

***Evaporative Emissions***

Mobile sources would also generate evaporative emissions, primarily VOC emissions, due to fuel evaporation from leaks in fuel systems, hoses, connectors, and carbon canisters. Emission factors were obtained from EMFAC2021 for the various evaporative processes including diurnal, hot soak, and running loss. Evaporative emissions were based on these emission factors and daily vehicle trips.

***Fugitive Dust Emissions***

$PM_{10}$ and $PM_{2.5}$ fugitive dust emissions would be generated during vehicle travel from tire wear, brake wear, and dust from paved and unpaved roads. Emission factors for tire wear and brake wear were obtained from EMFAC2021. Tire wear and brake wear emissions were estimated using the emission factors combined with daily vehicle activity (number of trips and trip lengths).

Mobile sources would also generate dust when traveling on paved and unpaved roads. When a vehicle travels over a road, the force of the wheels on the road can resuspend surface material that is entrained by vehicular travel and this road dust contributes to airborne $PM_{10}$ and $PM_{2.5}$ fugitive dust. Emission factors for entrained road dust were calculated using the methodologies in Sections 13.2.1 (Paved Roads) and 13.2.2 (Unpaved Roads) of AP-42.

On-site vehicle travel emissions were based on truck travel along unpaved roads or surfaces and unpaved road dust emissions factors were derived using the methodology from Section 13.2.2. Off-site vehicle travel emissions were based on vehicle travel along paved roads and paved road dust emissions factors were derived using the methodology from Section 13.2.1. Paved road and unpaved road dust emissions were estimated using their respective emission factors and daily vehicle activity (number of

trips and trip lengths). The analysis incorporated standard dust control measures, such as watering unpaved surface areas or unpaved roads.

### Demolition and Earth Movement

Fugitive dust emissions would be generated during demolition and earth movement activities. Emission factors for demolition activities were estimated using methods from Section 13.2.4 (Aggregate Handling and Storage Piles) of AP-42 and Appendix C of the CalEEMod User's Guide. Fugitive dust emissions from demolishing buildings and hardscape (concrete/asphalt) were estimated based on the emission factors and the demolition debris weight.

Fugitive dust emissions would also be generated during earth movement activities (site grading, bulldozing, and truck loading). Emission factors for each of these processes were based on methods from Sections 11.9 (Western Surface Coal Mining) and 13.2.4 (Aggregate Handling and Storage Piles) of AP-42, and Appendix C of CalEEMod User's Guide. Fugitive dust emissions were estimated using the emission factors and activity data (soil volume, number of grading passes, bulldozer hours of use, etc.). The analysis incorporated standard dust control measures, such as watering active demolition sites and exposed surfaces in accordance with SCAQMD Rule 403.

### Architectural Coatings

The application of architectural coatings would generate VOC emissions due to off-gassing emissions resulting from the evaporation of solvents contained in surface coatings.[3] Emission factors for architectural coatings are based on the VOC content of the surface coating. VOC emissions for architectural coatings in non-residential buildings, such as buildings at the maintenance and storage facility (MSF) and within stations, are based on the amount of surface to be coated. For non-residential buildings, the total surface amount is two times the square footage. Additionally, of the total surface area to be coated, CalEEMod assumes that 75 percent of the area would be for the interior surfaces and 25 percent would be for the exterior shell. The VOC content for building coatings was 100 grams per liter, consistent with CalEEMod's default value for non-residential coatings used within the SCAQMD.

VOC off-gassing emissions would also be generated from the painting of stripes, handicap symbols, directional arrows, and car space descriptions in parking lots. Consistent with CalEEMod methodology, the total area to be painted is based on the total parking lot area multiplied by 6 percent. The VOC content for parking lot paints was 100 grams per liter, consistent with CalEEMod's default value for parking land uses within the SCAQMD based on the limit for traffic coatings under Rule 1113.

### Paving

VOC off-gassing emissions would be generated during paving of asphalt surfaces. CalEEMod's emission factor for paving is 2.62 pounds of VOC per day per acre of paving area. Emissions were estimated using the emission factor and the area to be paved.

### Concrete Batch Plants

Temporary concrete batch plants at concrete casting facilities would produce the concrete used for the fabrication of precast components for track alignment, stations, and other facilities. Batch plants can produce fugitive dust emissions from material handling including sand transfer, aggregate transfer,

[3] CalEEMod uses the term VOC when referring to emissions from the application of architectural coatings, consistent with local regulations. VOCs are organic compounds that can evaporate into an organic gas. VOCs can be either reactive or non-reactive. Over the years, non-reactive VOCs have been exempted from regulation. Both VOCs and ROG are precursors to ozone, so they are summed in the CalEEMod output under the header ROG.

cement unloading, cement supplement unloading, weight hopper loading, and truck mix loading. Batch plants must obtain an air quality permit from SCAQMD and comply with SCAQMD rules to minimize emissions.

The locations of batch plants can vary by project alternative, some may occur within the construction areas of an MSF, outside of the Project Study Area or SCAQMD boundaries at a commercial facility. Their locations are subject to change based on the current stage in the design phase, lending uncertainty to where the actual precast site will be located. Due to this uncertainty, the regional air quality analysis assumed concrete batch plants for project alternatives would be located within the SCAQMD boundaries; therefore, concrete batch plant fugitive dust emissions were included in the regional emissions analysis for all project alternatives. Fugitive dust emissions were estimated using methodology from Section 11.12 (Concrete Batching) of AP-42. It should be noted that in the future when construction activities are set to begin, a site-specific analysis for concrete batch plants will be conducted to obtain all permits and approvals necessary prior to operation of the concrete batch plant.

#### 3.2.2.2 Regional Operations Emissions

Operations of project alternatives would generate emissions of VOCs, $NO_X$, CO, $SO_X$, $PM_{10}$, and $PM_{2.5}$ that could result in long-term impacts on ambient air quality. Operational emissions may be generated from mobile and area sources, as well as emergency generators related to the components of project alternatives, such as MSFs and train stations. Other components such as traction power substation (TPSS) or tunnel ventilation systems would not result in appreciable air pollutant emissions as site visits for maintenance would be infrequent and ventilation systems would be electric powered. Therefore, air pollutant emissions from these components were not quantified. Additionally, transit technology for project alternatives would be electric powered and would not generate air pollutant emissions during operations.

Regional operational emissions would include emissions generated by on-site sources, such as landscaping equipment and emergency generators, and off-site sources, primarily mobile sources. Operational emissions for mobile sources and emergency generators were estimated using a spreadsheet methodology with emission factors and methodologies from CalEEMod, EMFAC2021, and AP-42. Operational emissions for MSFs and stations were estimated in CalEEMod. The emissions modeling for project alternatives relied on alternative-specific data such as the sizes of stations and buildings, number of employees, and traffic data. Where project-specific information was not available, reasonable assumptions based on similar projects and default values from CalEEMod were used in the analysis. The emission estimation approach for each emission source is discussed in the following sections.

Peak daily regional operational emissions were estimated for the full build-out of project alternatives in Horizon Year 2045. The net change in peak daily emissions between project alternatives and the No Project Alternative were compared to SCAQMD's regional significance thresholds for operations to determine impacts on regional air quality, Section 0 provides more details for this evaluation approach. Details regarding operational data and emission calculations for each project alternative are provided in *Sepulveda Transit Corridor Project Air Quality Technical Report* (Metro, 2025a).

##### Area Sources

Area source emissions would be generated from the reapplication of architectural coatings, consumer products, and landscaping equipment emissions. Area source emissions are primarily attributed to operations at MSFs and stations. Area source emissions for these land uses were estimated using

CalEEMod. Output reports for each project alternative are provided in Attachment 1 to the *Sepulveda Transit Corridor Project Air Quality Technical Report* (Metro, 2025a).

Architectural coatings would primarily result in VOC off-gassing from the evaporation of solvents contained in surface coatings. Architectural coating emissions would be generated in a similar manner as described in Section 3.1.4 but would also include a reapplication rate, the rate at which surfaces are repainted. CalEEMod uses a reapplication rate of 10 percent, indicating all buildings are assumed to be repainted at a rate of 10 percent of the total area per year, and all coatings and paints would comply with limits established by SCAQMD Rule 1113 (CAPCOA, 2022).

Consumer products would primarily result in VOC emissions from chemically formulated products (cleaning compounds, detergents, degreasers, etc.). CalEEMod estimates consumer product emissions from three categories: general, pesticide/fertilizers, and parking degreasers. For each category, the emissions factors are based on the amount of VOC per square foot per day. Emissions would be based on the emissions factors and the type and size of the land use (e.g., general office building).

Landscaping emissions would result from fuel combustion in landscaping equipment. CalEEMod's emission factors for landscaping equipment are in grams per square foot of building type (residential or non-residential). Landscaping emissions are based on the emissions factors, area to be landscaped, and the number of summer days for the project area. Although AB 1346 would ban the sale of new gas-powered SOREs used for landscaping and encourages the transition to electric-powered equipment, existing gas-powered equipment could still be used in the future. Therefore, the analysis conservatively assumed landscaping equipment in 2045 would continue to be gas-powered.

### Natural Gas

On December 10, 2022, the City of Los Angeles passed Ordinance 187714, which requires all newly constructed buildings in the City of Los Angeles to be all-electric. This ordinance was added to the City of Los Angeles Municipal Code under Section 99.04.106.8 and had an effective date of January 1, 2023. Based on this ordinance, the operations emissions analysis did not include criteria pollutant emissions from combustion of natural gas related to building space and water heating because project alternative buildings would be considered new construction and would be required to comply with the Los Angeles Municipal Code.

### Mobile Sources

Mobile sources would generate emissions from different processes including exhaust (fuel combustion), evaporative, and fugitive dust from brake wear, tire wear, and paved roads. The *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) evaluated daily VMT in the Project Study Area for the existing conditions under Baseline Year 2021 (Existing Conditions 2021), the No Project Alternative in forecast Horizon Year 2045 (No Project Alternative 2045), and for each project alternative in forecast Horizon Year 2045.

Emission factors for air pollutants were generated from EMFAC2021 and were based on all vehicle categories and fuel types, aggregate speeds, and model years, as well as the appropriate calendar year (2021 for Existing Conditions, and 2045 for No Project Alternative and project alternatives). Fugitive dust emission factors for paved roads were also included in the emissions estimates. Daily emissions were estimated by multiplying the daily VMT by the mobile emission factors.

Additionally, mobile source emissions would be generated from employees traveling to project alternative MSFs. Daily employee trips were based on the number of MSF employees multiplied by two to account for trips to and from the MSF. The trip length for employees was based on the CalEEMod

default value for non-residential home-to-work trips for a general office building. The daily trips and trip length were multiplied together to derive a daily VMT. Emission factors for air pollutants were generated from EMFAC2021 and were based on all vehicle categories and fuel types, aggregate speeds and model years, and calendar year 2045. Daily emissions were estimated by multiplying the daily VMT by the mobile emission factors.

### Emergency Generators

The use of emergency generators may be required to provide power for lighting and emergency systems during unplanned power outages. Emissions associated with periodic maintenance and testing of the emergency generators were included in the daily operational emissions. Emergency generator emission factor and load factors were obtained from CalEEMod. The analysis assumed that testing and maintenance activities for the emergency generators would operate up to one hour per day per generator. Emergency generator emissions were estimated outside CalEEMod using a spreadsheet approach. Criteria pollutant emissions were estimated based on an alternative-specific generator size (hp), and emission factors and load factors were obtained from CalEEMod.

### 3.2.2.3 Localized Construction Emissions

The SCAQMD developed localized significance thresholds (LST) that represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and thus would not cause or contribute to localized air quality impacts. LSTs were developed based on the ambient concentrations of that pollutant for each of the 38 source receptor areas (SRA) in the South Coast Air Basin. The localized thresholds, which are found in the mass-rate look-up tables in SCAQMD's *Final Localized Significance Threshold Methodology* document, were developed for the analysis of projects that are less than or equal to five acres in size and applicable only to the following criteria pollutants: $NO_X$, CO, $PM_{10}$, and $PM_{2.5}$ (SCAQMD, 2008).

Localized construction emissions were based on emissions generated on-site within the construction site boundaries, including exhaust emissions from off-road equipment and trucks, and fugitive dust from demolition, earth movement activities, and truck travel. Consistent with SCAQMD localized methodology, off-site emissions such as mobile sources, were not included in the localized emissions inventory. Project alternatives expand from the San Fernando Valley (Valley) to the Westside of Los Angeles (Westside) with components (alignment, stations, TPSSs, etc.) located along the corridor; therefore, two geographic areas were utilized to develop localized emissions inventories. For Alternatives 1 and 3, components located north of the Getty Center parking area would be categorized as operating in the Valley and components south of the Getty Center parking area would be categorized as operating in the Westside. For Alternatives 4, 5, and 6, components located north of Del Gado Drive would be categorized as operating in the Valley and components south of Del Gado Drive would be categorized as operating in the Westside. For each project alternative, peak daily emissions of components in the Valley and Westside were compared to the appropriate LST values.

The LSTs are based on (1) the size or total area of the emissions source, (2) the distance to nearby sensitive receptor locations, and (3) the ambient air quality in each SRA where the emissions sources are located.

1. Size — The LST categories for size (i.e., acres) are 1, 2, and 5 acres. The site acreage for construction components in the Valley and Westside varies and some components are greater than 5 acres. Although the LSTs were developed for sites up to 5 acres, the LSTs can still be used to conduct a screening-level analysis for projects greater than 5 acres. Based on the varying size of construction worksite, a 2-acre site was used to evaluate local impacts from project alternatives. This approach is conservative, because the emissions from multiple components with a total acreage greater than 2 acres will be compared to LSTs for a 2-acre site.
2. Distance — The LST categories for distance (i.e., meters) to nearby sensitive receptor locations range from less than or equal to 25, 50, 100, 200, and 500 meters. These distances are based on polar receptor grid used in SCAQMD's dispersion modeling to derive LSTs. It was conservatively assumed that a receptor could be located within 25 meters (82 feet) based on the proximity of sensitive land uses to the proposed alignments. Although receptors could be closer than 25 meters to the site boundaries, SCAQMD guidance states the 25-meter distance should be used for the LSTs as they represent the most conservative screening thresholds (SCAQMD, 2008).
3. SRA — The LST SRA for a project is based on the city or community that the project is located. Because of the large domain for project alternatives, LST values for two SRAs were utilized to compare potential localized impacts along the alternatives' corridors. Project alternatives expand from the Valley to Westside and intersect with SRA 7−East San Fernando Valley and SRA 2−Northwest Los Angeles County Coastal. LST values for both SRAs were obtained from the mass-rate look-up tables. Construction activity in the Valley would be compared to the LSTs for SRA 7 and construction activity in the Westside would be compared to the LSTs for SRA 2.

**Localized Emissions Approach**

The approach to estimating localized emissions involves several steps. First, the maximum daily emissions for NOX, CO, PM10, and PM2.5 within the Valley and Westside regions are identified, accounting for overlapping construction phases and schedules. This ensures that the analysis captures the worst-case scenario for daily emissions. Next, the components contributing to these maximum emissions (e.g., stations, TPSSs, or alignment segments) are identified to evaluate their spatial relationship and proximity to sensitive receptors. For localized significance, emissions from components in close proximity are summed to determine the peak daily localized emissions that could influence the same receptors. These combined emissions are then compared against SCAQMD's LSTs. This methodology provides a basis for assessing whether the project may cause or contribute to an exceedance of ambient air quality standards (AAQS) at a localized level, with findings informing the significance determination and disclosure of potential health impact.

### 3.2.2.4 Localized Operations Emissions

Localized emissions during operations would be generated by area sources and emergency generators at MSFs and stations. Based on the level of intensity for local operational activities compared to local construction activities, a screening-level approach was used to evaluate impacts of localized operational emissions. Similar to localized construction emissions, the localized operational emissions were evaluated using SCAQMD's LSTs. The localized operational emissions would only include emissions generated on-site and does not include mobile source emissions.

The LSTs are based on (1) the size or total area of the emissions source, (2) the distance to nearby sensitive receptor locations, and (3) the ambient air quality in each SRA where the emissions sources are located.

1. Size — The LST categories for size (i.e., acres) are less than or equal to 1, 2, and less than or equal to 5. The total acreage for the MSF and stations is greater than 5 acres. Although the LSTs were developed for sites up to 5 acres, the LSTs can still be used to conduct a screening-level analysis for projects greater than 5 acres to determine if further refined analysis of local air quality impacts is required. Therefore, the LSTs for a 5-acre site were used to evaluate local impacts from project alternatives.
2. Distance — The LST categories for distance (i.e., meters) to nearby sensitive receptor locations range from less than or equal to 25, 50, 100, 200, and 500 meters. These distances are based on polar receptor grid used in SCAQMD's dispersion modeling to derive LSTs. It was conservatively assumed that a receptor could be located within 25 meters (82 feet) based on the proximity of sensitive land uses to the proposed alignments. Although receptors could be closer than 25 meters to the site boundaries, SCAQMD guidance states the 25-meter distance should be used for the LSTs as they represent the most conservative screening thresholds (SCAQMD, 2008).
3. SRA — The LST SRA for a project is based on the city or community that the project is located. Because of the large domain for project alternatives, LST values from two SRAs were utilized to compare potential localized impacts along the alternatives' corridors. Project alternatives expand from the Valley to Westside and intersect with SRA 7−East San Fernando Valley and SRA 2−Northwest Los Angeles County Coastal. LST values for both SRAs were obtained from the mass-rate look-up tables and the most stringent values between each SRA were selected for the LSTs.

The components (MSFs and stations) of project alternatives are located at different locations along the alternative alignment; therefore, it was conservatively assumed that the localized emissions from all components would occur within a 5-acre site, although in reality, the total acreage of all these components is far greater than 5 acres. Localized emissions from MSFs and stations for each project alternative were summed together and compared to the operational LSTs.

#### 3.2.2.5 Operational Carbon Monoxide Hot Spots

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. As part of SCAQMD's 2003 AQMP, which is the most recent AQMP that addresses CO concentrations, a detailed CO hot spots analysis was conducted by SCAQMD at four heavily congested intersections in the South Coast Air Basin that were likely to experience the highest CO concentrations. The results of the CO hot-spot analysis did not predict a violation of CO standards at any of these four intersections. As such, the potential for project alternatives to result in localized CO impacts occurring from the addition of project-associated intersection volumes was assessed by comparing the highest daily intersection for project alternatives with the highest daily intersection volumes at the busiest intersection evaluated in the 2003 AQMP. If project alternatives have lower intersection volumes than intersection volumes at the four intersections modeled by SCAQMD, it can be concluded that project alternatives would not result in any localized CO impacts.

#### 3.2.2.6 CEQA Thresholds of Significance

For the purposes of the Environmental Impact Report, impacts are considered significant if the Project would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- 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.

- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
- The SCAQMD has developed or adopted significance thresholds, discussed below, to assist Lead Agencies in assessing a project's potential to regional and local air quality during short-term construction and long-term operation.

### Regional Significance Thresholds

SCAQMD has developed numerical significance thresholds that are applicable to both construction and operational regional emissions generated by a California Environmental Quality Act (CEQA) project within its jurisdiction. These significance thresholds were derived using regional emissions modeling to determine maximum allowable mass quantities of pollutant emissions that could be generated by individual projects without adversely affecting air quality and creating public health concerns based on existing pollution levels. These regional pollutant emission thresholds are shown in Table 3.2-4. Project alternative emissions that exceed these thresholds would be considered significant under CEQA.

**Table 3.2-4. South Coast Air Quality Management District Regional Significance Thresholds**

| Pollutant | Mass Daily Threshold (lbs/day) | |
|---|---|---|
| | Construction | Operations |
| Volatile Organic Compounds (VOC)[a] | 75 | 55 |
| Nitrogen Oxides ($NO_x$) | 100 | 55 |
| Carbon Monoxide (CO) | 550 | 550 |
| Sulfur Dioxide ($SO_2$) | 150 | 150 |
| Respirable Particulate Matter ($PM_{10}$) | 150 | 150 |
| Fine Particulate Matter ($PM_{2.5}$) | 55 | 55 |
| Lead[b] | 3 | 3 |

Source: SCAQMD, 2023

[a]The terms VOC and ROG are used interchangeably. SCAQMD uses VOC, and CalEEMod uses ROG.
[b]The Project would result in no lead emissions sources during the construction period or operations. As such, lead emissions are not evaluated herein.

CalEEMod = California Emissions Estimator Model
lbs/day = pounds per day
ROG = reactive organic gases

Pursuant to CEQA Guidelines Section 15125(a)(2), a lead agency has the discretion to exclusively use a future conditions baseline for the purposes of determination of significance under CEQA in instances where showing an existing conditions analysis would be misleading or without informational value. Use of an existing conditions baseline would be misleading for the Project because it ignores the regional background growth in population, traffic, and transportation infrastructure that would occur between the Existing Conditions Baseline Year of 2021 and Project build-out in 2045. The 2021 existing conditions will be substantially altered by regional growth that will occur independent of the Project, which, in turn, would mask the impacts that are attributable to the Project and would not provide the reader with an accurate and meaningful delineation of project-related impacts). Considering such growth is critical when determining future effects for transit projects designed to reduce traffic congestion, VMT, and associated air quality impacts over time. Isolating project alternative impacts from ancillary changes in the environment would result in a misleading analysis.

Therefore, operational air quality impacts will be evaluated using the net change in emissions between project alternatives in Horizon Year 2045 and a projected future conditions baseline. The projected future conditions baseline represents the Existing Conditions in 2021 adjusted for regional background growth that would occur by 2045. In this case, the projected future conditions baseline is 2045 without Project conditions. The Horizon Year 2045 of the regional travel demand Corridor Based Model 2018, which incorporates Metro Measure M projects identified in the Measure M Expenditure Plan, roadway improvements, and other transit improvements anticipated to occur throughout the transit corridor, was selected as the Project's horizon year. The use of Horizon Year 2045 represents a characterization of the holistic, long-term benefits of the Project as transit-oriented development expands within the Project Study Area and throughout the region. The significance of regional criteria pollutant emissions for project alternatives will be based on the net change in emissions between project alternatives and the projected future conditions baseline (2045 without Project conditions).

### Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern

All criteria pollutants generated by construction and future operation of the Project would be associated with some form of health risk (e.g., asthma, lower respiratory problems).[4] Criteria pollutants can be classified as either regional pollutants or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. $O_3$ is considered a regional criteria pollutant, whereas CO, $NO_2$, $SO_2$, and lead are localized pollutants. It should be noted that $O_3$ is not directly emitted from emission sources, rather $O_3$ is formed from chemical reactions involving precursor emissions, $NO_X$, and ROG, in the presence of sunlight. Particulate matter can be both a local and a regional pollutant, depending on its composition. The primary criteria pollutants of concern generated by the Project would be $O_3$ precursors (reactive organic gases [ROG] and $NO_X$), CO, and particulate matter, including DPM.

The sections that follow discuss thresholds and analysis considerations for regional Project-generated criteria pollutants with respect to their human health implications.

### Regional Project-Generated Criteria Pollutants (Ozone Precursors and Regional PM)

Adverse health effects from regional criteria pollutant emissions, such as $O_3$ precursors and particulate matter, generated by the Project are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). Therefore, $O_3$ precursors (ROG and $NO_X$) contribute to the formation of ground-borne $O_3$ on a regional scale. Emissions of ROG and $NO_X$ generated in an area may not correlate to a specific $O_3$ concentration in that same area. Similarly, some types of particulate pollutant may be transported over long distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased $O_3$ or regional particulate matter concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project. Moreover, exposure to regional air pollution does not guarantee that an individual will experience an adverse health effect. As discussed above, there are large individual differences in the intensity of symptomatic responses to air pollutants. These differences are influenced, in part, by the underlying health condition of an individual, which cannot be known.

Models like the Environmental Benefits Mapping and Analysis Program (BenMAP) and similar tools are designed to evaluate health impacts of regional air pollution, focusing on large-scale population

[4] A more detailed discussion of potential health effects is provided in Table 3.2-2 (Federal and California Air Pollutant Effects and Sources).

outcomes and significant emission contributions across wide areas. While these models can quantify changes in $O_3$ levels or secondary particulate matter and their associated health effects, they are primarily developed for regional planning and policy analyses, making them less sensitive to smaller-scale, project-specific emissions.

Applying such models to project-level emissions, such as those generated during construction, poses challenges due to limitations in spatial and temporal resolution. Results for localized activities are likely unreliable, because these tools cannot accurately link small-scale pollutant contributions to specific health outcomes or determine their effect on non-attainment days[5]. These limitations are widely recognized among air quality agencies, which continue to explore refinements to improve the precision of these tools for diverse applications.

As discussed above, air districts develop region-specific CEQA thresholds of significance in consideration of existing air quality concentrations as well as attainment or non-attainment designations under the NAAQS and CAAQS. The NAAQS and CAAQS are informed by a wide range of scientific evidence that demonstrates that there are known safe concentrations of criteria pollutants. Although recognizing that air quality is a cumulative problem, air districts typically consider projects that generate criteria pollutant and $O_3$ precursor emissions that are below the thresholds to be minor in nature. Such projects would not adversely affect air quality or exceed the NAAQS or CAAQS. Emissions generated by the Project could increase photochemical reactions and the formation of tropospheric $O_3$ and secondary particulate matter, which, at certain concentrations, could lead to increased incidences of specific health consequences. Although these health effects are associated with $O_3$ and particulate pollution, the effects are a result of cumulative and regional emissions. Therefore, the Project's incremental contribution cannot be traced to specific health outcomes on a regional scale, and a quantitative correlation of Project-generated regional criteria pollutant emissions to specific human health impacts is not included in this analysis.

### Thresholds for Analysis of Localized Construction Emissions

Potential impacts of localized construction emissions were evaluated using construction LST values. Construction LST values were based on a 2-acre site with receptors located at 25 meters from the site boundaries and were obtained for SRA 2 – Northwest Los Angeles County Coastal and SRA 7 – East San Fernando Valley. These SRAs were selected because the majority of project alternative components are located within their boundaries. The LST values for localized construction emissions are provided in Table 3.2-5.

[5] A non-attainment day is when an area does not meet the national primary or secondary ambient air quality standard (NAAQS).

**Table 3.2-5. Localized Significance Thresholds for Construction**

| Source Receptor Area | Construction LSTs (lbs/day) | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| 2 – Northwest Los Angeles County Coastal | 147 | 827 | 6 | 4 |
| 7 – East San Fernando Valley | 114 | 786 | 7 | 4 |

Source: SCAQMD, 2008

CO = carbon monoxide
lbs/day = pounds per day
LST= localized significance threshold
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of diameter less than 10 microns
$PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns

## Thresholds for Analysis of Localized Operational Emissions

Potential impacts of localized operational emissions were evaluated using operational LST values. Operational LST values were based on a 5-acre site with receptors located at 25 meters from the site boundaries and were obtained for SRA 2 – Northwest Los Angeles County Coastal and SRA 7 – East San Fernando Valley. These SRAs were selected because the majority of project alternative components are located within their boundaries. The LST values for localized operational emissions are provided in Table 3.2-6.

**Table 3.2-6. Localized Significance Thresholds for Operations**

| Source Receptor Area | Operational LSTs (lbs/day) | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| 2 – Northwest Los Angeles County Coastal | 221 | 1,531 | 3 | 2 |
| 7 – East San Fernando Valley | 172 | 1,434 | 4 | 2 |
| **Operational LSTs for Analysis[a]** | **172** | **1,434** | **3** | **2** |

Source: SCAQMD, 2008

[a]The more stringent localized significance thresholds value between Source Receptor Area (SRA) 2 and SRA 7 was selected to evaluate localized operational emissions.

CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance thresholds
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of diameter less than 10 microns
$PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns

## Cumulative Impacts

Potential cumulative air quality impacts would result when the pollutant emissions of the Project combine with those of other projects' pollutant emissions to degrade air quality conditions below acceptable levels. This could occur on a local level (e.g., increased vehicle emissions at congested intersections or concurrent construction activities at sensitive receptor locations) or a regional level (e.g., potential $O_3$ impacts from multiple past, present, and reasonably foreseeable projects within the South Coast Air Basin). Given that both localized and regional pollution is regulated at the air basin level, the South Coast Air Basin is the Resource Study Area for the purposes of air quality.

The South Coast Air Basin experiences chronic exceedances of the NAAQS and CAAQS and is currently in non-attainment status for $O_3$ (federal and state standards), $PM_{10}$ (state standards only), and $PM_{2.5}$ (federal and state standards). Consequently, cumulative development in the South Coast Air Basin as a whole could violate an air quality standard or contribute to an existing or projected air quality violation. SCAQMD recommends that if an individual project results in criteria pollutant emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Conversely, if a project's emissions do not exceed the recommended daily thresholds for project-specific impacts, its impacts would not be cumulatively considerable and would not contribute to non-attainment of applicable air quality standards in the South Coast Air Basin.

### 3.2.3 Project Measures

There are no project measures applicable to air quality.

### 3.2.4 Existing Conditions

#### 3.2.4.1 Regional Climate and Meteorology

The Project Study Area is located within the South Coast Air Basin, an area covering approximately 6,745 square miles and bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The South Coast Air Basin 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 South Coast Air Basin, which is a coastal plain with connecting broad valleys and low hills.

The Southern California region, which includes the South Coast Air Basin, lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and 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 South Coast Air Basin is a function of the area's natural physical characteristics (weather and topography) as well as human-made 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 South Coast Air Basin, making it an area of high pollution potential.

The worst air pollution throughout the South Coast Air Basin occurs from June through September. This condition is generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing height. This combination of environmental factors frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the South Coast Air Basin vary with location, season, and time of day. $O_3$ concentrations, for example, tend to be lower along the coast, higher in the near-inland valleys, and lower in the far-inland areas of the South Coast Air Basin and adjacent desert. Substantial progress has been made in reducing air pollution levels in Southern California in recent years. However, the South Coast Air Basin still faces considerable challenges to attain the federal and state air quality standards.

Weather stations closest to the Project Study Area are the Western Regional Climate Center (WRCC) monitoring stations at Woodland Hills Pierce College (COOP ID 041484) and the University of California, Los Angeles (UCLA) (COOP ID 049152). These monitoring stations were selected to accurately represent

the climate conditions occurring in the northern and southern portions of the Project Study Area. According to climate data recorded from 1949 to 2012 for the Woodland Hills station, the average annual maximum temperature in the area is approximately 81 degrees Fahrenheit (°F), and the average annual minimum temperature is approximately 48°F. The average precipitation in the area is approximately 16 inches annually, occurring primarily from December through March (WRCC, 2023a). According to climate data recorded from 1933 to 2016 for the UCLA station, the average annual maximum temperature in the area is approximately 71°F, and the average annual minimum temperature is approximately 55°F. The average precipitation in the area is approximately 17 inches annually, occurring primarily from December through March (WRCC, 2023b).

### 3.2.4.2 Pollutants of Concern

#### Criteria Pollutants

NAAQS and CAAQS have been established for six pollutants: $O_3$, $NO_2$, CO, $SO_2$, $PM_{10}$, $PM_{2.5}$, and lead. Brief descriptions of the criteria air pollutants, common sources, and documented health concerns from exposure are provided in Table 3.2-7.

**Table 3.2-7. Criteria Air Pollutants and Characteristics**

| Pollutant | Characteristics |
|---|---|
| Ozone | • Colorless gas and secondary pollutant formed by complex atmospheric interactions between two or more reactive organic gas compounds (including volatile organic compounds and $NO_X$) in the presence of ultraviolet sunlight. Automobile travel and industrial sources are the greatest sources of atmospheric $O_3$ formation.<br>• Short-term exposure (lasting for a few hours) to $O_3$ levels typical in Southern California can result in breathing pattern changes, restricted breathing, increased susceptibility to infections, inflammation of the lung tissue, and immunological changes. |
| Nitrogen Dioxide | • Formed in the atmosphere through chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and $NO_2$ are collectively referred to as $NO_X$ and are major contributors to $O_3$ formation and contribute to the formation of $PM_{10}$.<br>• High concentrations (1) can cause breathing difficulties, (2) are linked to chronic pulmonary fibrosis, (3) can cause an increase of bronchitis in children (two and three years old), and (4) can result in a brownish-red cast to the atmosphere with reduced visibility. |
| Carbon Monoxide | • Colorless, odorless gas formed by incomplete combustion of fossil fuels (e.g., motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains)<br>• Excess exposure can reduce the blood's ability to transport oxygen, causing dizziness, fatigue, and impairment of central nervous system functions. |
| Sulfur Dioxide | • Refers to any compounds of sulfur and oxygen. A colorless, pungent gas that forms primarily through the combustion of sulfur-containing coal and oil.<br>• Stringent controls placed on stationary $SO_2$ emissions and limits on sulfur content of fuels have reduced atmospheric $SO_2$ concentrations. Highest levels of $SO_2$ are found near large industrial complexes (e.g., power plants) and can harm plant leaves and erode iron and steel.<br>• An irritant gas that attacks the throat and lungs; can cause acute respiratory symptoms and diminished lung function in children. |
| Respirable Particulate Matter | • Comprising airborne liquid and solid particles (e.g., smoke, soot, dust, salts, acids, and metals) formed by atmospheric chemical reactions of gases emitted from industrial and motor vehicles. |

| Pollutant | Characteristics |
|---|---|
| | • Results from crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.<br>• Collects in the upper portion of the respiratory system and can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. |
| Fine Particulate Matter | • Formed in the atmosphere from gases (i.e., sulfur dioxide, nitrogen oxides, and volatile organic compounds) and results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves.<br>• Inhalation (i.e., Pb, sulfates, nitrates, chlorides, ammonia) can be absorbed into the bloodstream and damage human organs, tissues, and cells throughout the body. Suspended $PM_{2.5}$ can damage and discolor surfaces and produce haze and reduce regional visibility. |
| Lead | • Occurs in atmosphere as particulate matter emitted from leaded gasoline combustion; manufacture of batteries, paint, ink, ceramics, and ammunition; and secondary lead smelting facilities.<br>• Phased-out leaded gasoline reduced overall airborne lead by 95 percent between 1978 and 1987. Current emission sources of greater concern include lead smelters, battery recycling, and manufacturing facilities.<br>• Prolonged exposure can lead to serious threats to human health (i.e., gastrointestinal disturbances, anemia, kidney disease, and neuromuscular and neurological dysfunction). Infancy and childhood exposure can impair neurobehavioral performance. |

Source: CARB, 2024c

CO = carbon monoxide
$NO_2$ = nitrogen dioxide
$O_3$ = ozone
Pb = lead
$PM_{10}$ = respirable particulate matter of diameter less than 10 microns
$PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns
$SO_2$ = sulfur dioxide

## Toxic Air Contaminants

TACs are generally defined as those air pollutants that may increase a person's risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Although NAAQS and CAAQS have been established for criteria pollutants, no ambient standards exist for TACs. Many 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, the CARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment.

Air toxics are generated by many sources, including stationary sources, such as dry cleaners, gas stations, auto body shops, and combustion sources; mobile sources, such as diesel trucks, ships, and trains; and area sources, such as farms, landfills, and construction sites. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) non-carcinogenic, and long-term (chronic) non-

carcinogenic. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. The principal TAC associated with the Project is DPM emitted during construction activities.

DPM differs from other air toxics in that it is a complex mixture of hundreds of substances rather than a single substance. DPM is typically composed of carbon particles ("soot," also called black carbon) and numerous organic compounds (CARB, 2024d). As more than 90 percent of DPM is less than 1 micrometer (µm) in diameter (about 1/70th the diameter of a human hair), the majority of DPM is small enough to be inhaled into the lungs. Although particles the size of DPM can deposit throughout the lung, the largest fraction deposits in the deepest regions of the lungs where the lung is most susceptible to injury. Health effects associated with exposure to DPM include premature death, hospitalizations, and emergency department visits for exacerbated chronic heart and lung disease, including asthma, increased respiratory symptoms, and decreased lung function in children (CARB, 2024d).

### 3.2.4.3 Regional Attainment Status

The EPA is tasked with the regulatory authority of monitoring pollutant concentrations and determining whether areas have attained the NAAQS.

Table 3.2-8 presents the attainment status designations for the non-desert portion of Los Angeles County within the SCAQMD jurisdiction. The South Coast Air Basin portion of Los Angeles County is currently designated non-attainment of the NAAQS for $O_3$ and $PM_{2.5}$ and is designated non-attainment of the CAAQS for $O_3$, $PM_{10}$, and $PM_{2.5}$.

**Table 3.2-8. Attainment Status Designations – South Coast Air Basin Portion of Los Angeles County**

| Pollutant | Averaging Time | CAAQS Status | NAAQS Status |
|---|---|---|---|
| Ozone | 1-Hour | Non-attainment | Non-attainment (Extreme) |
| | 8-Hour | Non-attainment | Non-attainment (Extreme) |
| Carbon Monoxide | 1-Hour | Attainment | Attainment (Maintenance) |
| | 8-Hour | Attainment | Attainment (Maintenance) |
| Nitrogen Dioxide | 1-Hour | Attainment | Unclassifiable/Attainment |
| | Annual Average | Attainment | Attainment (Maintenance) |
| Sulfur Dioxide | 1-Hour | Attainment | Unclassifiable/Attainment |
| | 24-Hour | Attainment | Unclassifiable/Attainment |
| Respirable Particulate Matter | 24-Hour | Non-attainment | Attainment (Maintenance) |
| | Annual Average | Non-attainment | No Federal Standard |
| Fine Particulate Matter | 24-Hour | No State Standard | Non-attainment (Serious) |
| | Annual Average | Non-attainment | Non-attainment (Moderate) |
| Lead | 30-Day Average | Attainment | No Federal Standard |
| | 3-Month Average | Attainment | Non-attainment (Partial) |

Source: CARB, 2024b; EPA, 2024

CO = carbon monoxide
$NO_2$ = nitrogen dioxide
$O_3$ = ozone
Pb = lead
$PM_{10}$ = respirable particulate matter of diameter less than 10 microns
$PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns
$SO_2$ = sulfur dioxide

### 3.2.4.4 Local Air Quality

The attainment status designations are based on concentrations of air pollutants measured at air monitoring sites throughout the South Coast Air Basin. The SCAQMD divides the South Coast Air Basin into 38 SRAs, the boundaries of which were determined by the proximity to the nearest air monitoring station and local topography and meteorological patterns. The SCAQMD operates a total of 34 air monitoring sites that are used to characterize air quality within the 38 SRAs. The Project Study Area predominately transects portions of SRA 6 (West San Fernando Valley) and SRA 7 (East San Fernando Valley) in the northern portion and SRA 2 (Northwest Coastal Los Angeles County) in the southern portion. However, although project alternatives are included in SRA 7 (East San Fernando Valley), there is no longer an active monitoring station in this SRA; therefore, the SRA 6 monitoring station data was used. Figure 3.2-1 displays the Project Study Area overlain on the portions of the SCAQMD SRAs that it covers, as well as the locations of monitoring stations in SRA 2 (West Los Angeles – Veterans Administration monitoring site) and SRA 6 (Reseda monitoring site). The following discussions address pollutant concentrations measured at stations from 2021 to 2023.

**Figure 3.2-1. SCAQMD Source Receptor Areas in Project Study Area**


Source: HTA, 2024

Table 3.2-9 presents pollutant concentrations measured at the Reseda monitoring station that provides data representative of air quality conditions within SRA 6. As shown in Table 3.2-9, concentrations of $O_3$ exceeded applicable standards numerous times during the most recent three-year period of data available. The 24-hour federal standard for $PM_{2.5}$ was also exceeded for one year during this period. The air monitoring data recorded at the Reseda monitoring station reflects the non-attainment status of the South Coast Air Basin portion of Los Angeles County for $O_3$ and $PM_{2.5}$. The Reseda monitoring station is not equipped to measure concentrations of $PM_{10}$. Concentrations of all other pollutants monitored at this site remained below applicable federal and state air quality standards, consistent with the attainment or maintenance designations corresponding to the South Coast Air Basin portion of Los Angeles County.

**Table 3.2-9. Reseda Air Monitoring Station Data (SRA 6)**

| Pollutant | Averaging Time | Maximum Concentrations and Frequencies of Exceeded Standards | | |
|---|---|---|---|---|
| | | 2021 | 2022 | 2023 |
| Ozone | Maximum 1-Hour Concentration (ppm) | 0.110 | 0.11 | 0.104 |
| | Days > 0.09 ppm (CAAQS) | 4 | 7 | 10 |
| | Maximum 8-Hour Concentration (ppm) | 0.083 | 0.096 | 0.096 |
| | Days >0.070 ppm (NAAQS/CAAQS) | 33 | 24 | 30 |
| Carbon Monoxide | Maximum 1-Hour Concentration (ppm) | 2.6 | 2.2 | 2.3 |
| | Days > 20 ppm (CAAQS) | 0 | 0 | 0 |
| | Maximum 8-Hour Concentration (ppm) | 1.9 | 1.8 | 1.7 |
| | Days >9.0 ppm (NAAQS/CAAQS) | 0 | 0 | 0 |
| Nitrogen Dioxide | Maximum 1-Hour Concentration (ppm) | 0.0542 | 0.0547 | 0.0481 |
| | Days > 0.10 ppm (NAAQS) | 0 | 0 | 0 |
| | Annual Average Concentration (ppm) | 0.010 | 0.010 | 0.010 |
| | >0.030 ppm (CAAQS) | 0 | 0 | 0 |
| Respirable Particulate Matter | Maximum 24-Hour Concentration (µg/m$^3$) | — | — | — |
| | Days > 150 µg/m$^3$ (NAAQS) | | | |
| | Days > 50 µg/m$^3$ (CAAQS) | | | |
| | Annual Average Concentration (µg/m$^3$) | — | — | — |
| | > 20 µg/m$^3$ (CAAQS) | | | |
| Fine Particulate Matter | Maximum 24-Hour Concentration (µg/m$^3$) | 55.5 | 20.5 | 21.9 |
| | Days > 35 µg/m$^3$ (NAAQS) | 3 | 0 | 0 |
| | Annual Average Concentration (µg/m$^3$) | 10.1 | 8.8 | 8.8 |
| | > 12 µg/m$^3$ (CAAQS) | No | No | No |
| | > 9 µg/m$^3$ (NAAQS) | No[a] | No | No |

Source: SCAQMD, 2024

[a]The federal standard for annual $PM_{2.5}$ was revised to 9 µg/m$^3$ in 2024. Prior to 2024, the federal standard was 12 µg/m$^3$; therefore, concentrations in 2021 would not have exceeded the federal standard for annual $PM_{2.5}$.

— = no data
µg/m$^3$ = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standards
CO = carbon monoxide
NAAQS = National Ambient Air Quality Standards
$NO_2$ = nitrogen dioxide
$O_3$ = ozone
$PM_{10}$ = respirable particulate matter of diameter less than 10 microns

$PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns
ppm = parts per million
SRA = Source Receptor Area

Table 3.2-10 presents pollutant concentrations measured at the West Los Angeles-Veterans Administration monitoring station that provides data representative of air quality conditions within SRA 2. Concentrations of $O_3$ exceeded applicable standards numerous times during the most recent three-year period of data available as shown in Table 3.2-10. The air monitoring data recorded at the West Los Angeles-Veterans Administration monitoring station reflects the non-attainment status of the South Coast Air Basin portion of Los Angeles County for $O_3$. The West Los Angeles-Veterans Administration monitoring station is not equipped to measure concentrations of particulate matter ($PM_{10}$ and $PM_{2.5}$). Concentrations of all other pollutants monitored at this site remained below applicable federal and state air quality standards, consistent with the attainment or maintenance designations corresponding to the South Coast Air Basin portion of Los Angeles County.

**Table 3.2-10. West Los Angeles - Veterans Administration Air Monitoring Station Data (SRA 2)**

| Pollutant | Averaging Time | Maximum Concentrations and Frequencies of Exceeded Standards | | |
|---|---|---|---|---|
| | | 2021 | 2022 | 2023 |
| Ozone | Maximum 1-Hour Concentration (ppm) | 0.095 | 0.081 | 0.109 |
| | Days > 0.09 ppm (CAAQS) | 1 | 0 | 1 |
| | Maximum 8-Hour Concentration (ppm) | 0.082 | 0.07 | 0.066 |
| | Days >0.070 ppm (NAAQS/CAAQS) | 1 | 0 | 0 |
| Carbon Monoxide | Maximum 1-Hour Concentration (ppm) | 2 | 1.7 | 1.4 |
| | Days > 20 ppm (CAAQS) | 0 | 0 | 0 |
| | Maximum 8-Hour Concentration (ppm) | 1.6 | 1.5 | 1.2 |
| | Days >9.0 ppm (NAAQS/CAAQS) | 0 | 0 | 0 |
| Nitrogen Dioxide | Maximum 1-Hour Concentration (ppm) | 0.061 | 0.051 | 0.044 |
| | Days > 0.10 ppm (NAAQS) | 0 | 0 | 0 |
| | Annual Average Concentration (ppm) | 0.010 | 0.011 | 0.009 |
| | >0.030 ppm (CAAQS) | No | No | No |
| Respirable Particulate Matter | Maximum 24-Hour Concentration (µg/m$^3$) | — | — | — |
| | Days > 150 µg/m$^3$ (NAAQS) | | | |
| | Days > 50 µg/m$^3$ (CAAQS) | | | |
| | Annual Average Concentration (µg/m$^3$) | — | — | — |
| | > 20 µg/m$^3$ (CAAQS) | | | |
| Fine Particulate Matter | Maximum 24-Hour Concentration (µg/m$^3$) | — | — | — |
| | Days > 35 µg/m$^3$ (NAAQS) | | | |
| | Annual Average Concentration (µg/m$^3$) | — | — | — |
| | > 12 µg/m$^3$ (NAAQS/CAAQS) | | | |
| | > 9 µg/m$^3$ (NAAQS) | | | |

Source: SCAQMD, 2024

— = no data
µg/m$^3$ = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standards
CO = carbon monoxide
NAAQS = National Ambient Air Quality Standards
$NO_2$ = nitrogen dioxide
$O_3$ = ozone

$PM_{10}$ = respirable particulate matter of diameter less than 10 microns
$PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns
ppm = parts per million
SRA = Source Receptor Area

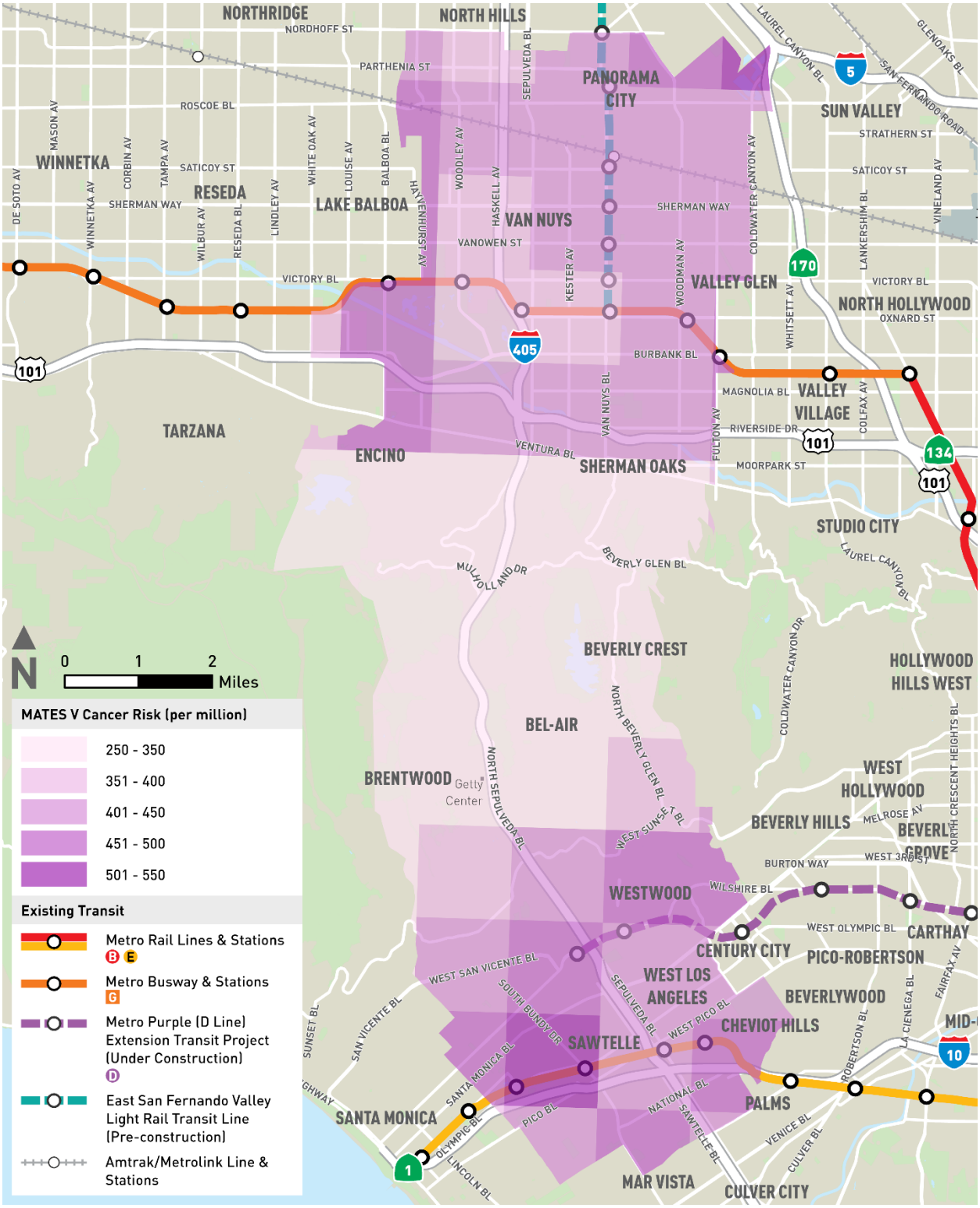
### 3.2.4.5 Ambient Carcinogenic Risk

MATES is a monitoring and evaluation study conducted by the SCAQMD throughout the South Coast Air Basin to determine South Coast Air Basin-wide risks associated with major airborne carcinogens (pollutants that are scientifically documented to cause cancer). The most recent study is the MATES V published in 2021.

As part of MATES V, SCAQMD developed a cancer risk map that plotted the modeled cancer risk on a grid spanning the Basin. Each grid cell is characterized by the modeled cancer risk produced by MATES V. Cancer risk is expressed as the number of extra cancer cases occurring over a 70-year lifetime per one million people exposed to toxic air contaminants. MATES V found that air toxic levels continue to decline compared to previous MATES versions. MATES V estimated cancer risk in the South Coast Air Basin ranging from 585 to 842 per million. Similar to previous MATES studies, the SCAQMD determined that DPM is the largest contributor to air toxics cancer risk. However, at the 10 monitoring stations, DPM levels were 53 percent lower compared to MATES IV and 86 percent lower than MATES II (SCAQMD, 2021b).

Figure 3.2-2 shows the Project Study Area overlain on the MATES V Estimated Risk grid developed by SCAQMD. Ambient estimated risks in the Project Study Area range from approximately 250 per million to 550 per million according to MATES V modeling results.

**Figure 3.2-2. MATES V Estimated Cancer Risk in the Project Study Area**




Source: SCAQMD, 2021b

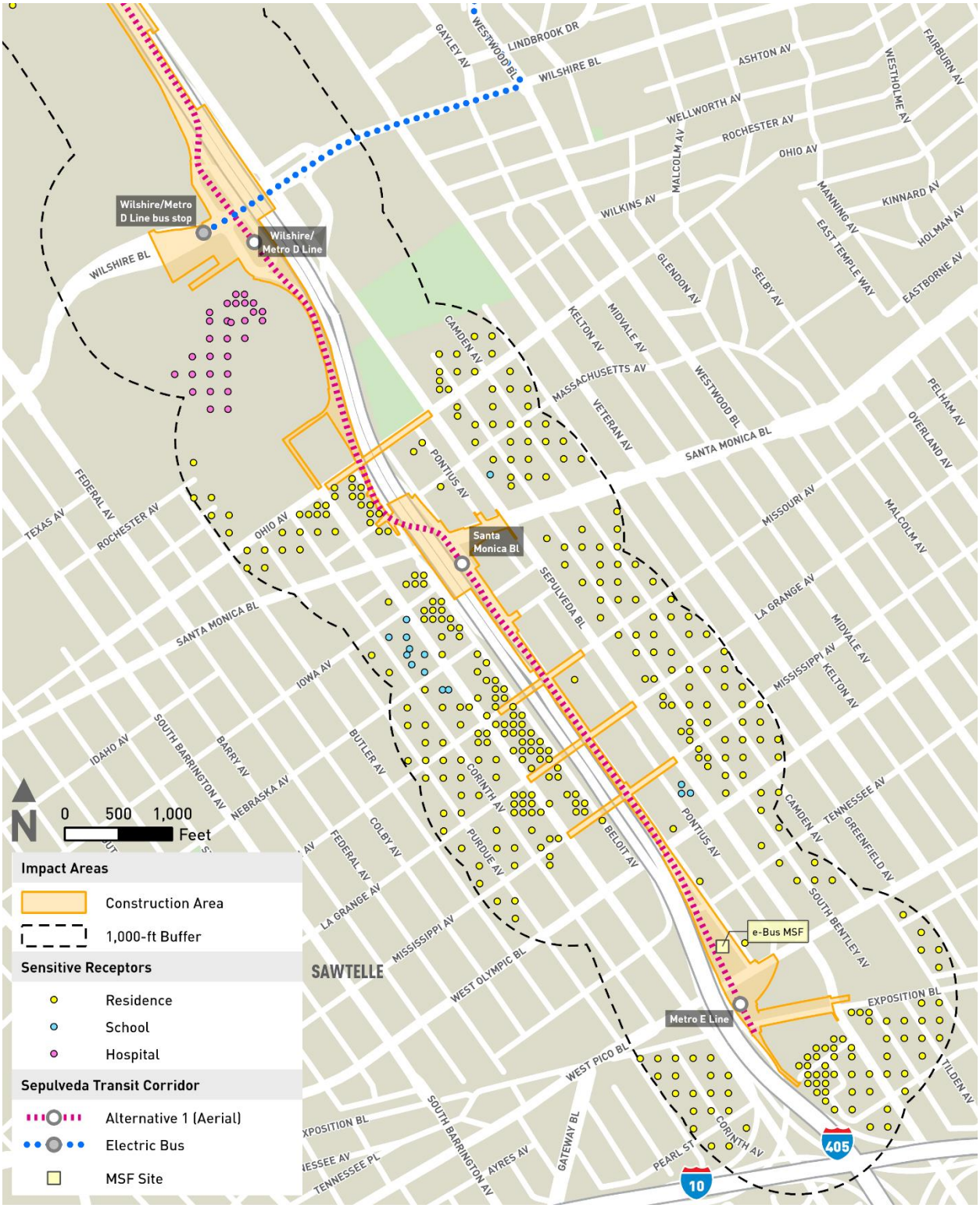
### 3.2.4.6 Sensitive Receptors

Sensitive individuals refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend extended periods of time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (SCAQMD, 1993). These types of land uses are considered sensitive receptors in air quality planning and are located throughout the Project Study Area.

#### Alternative 1 Sensitive Receptors

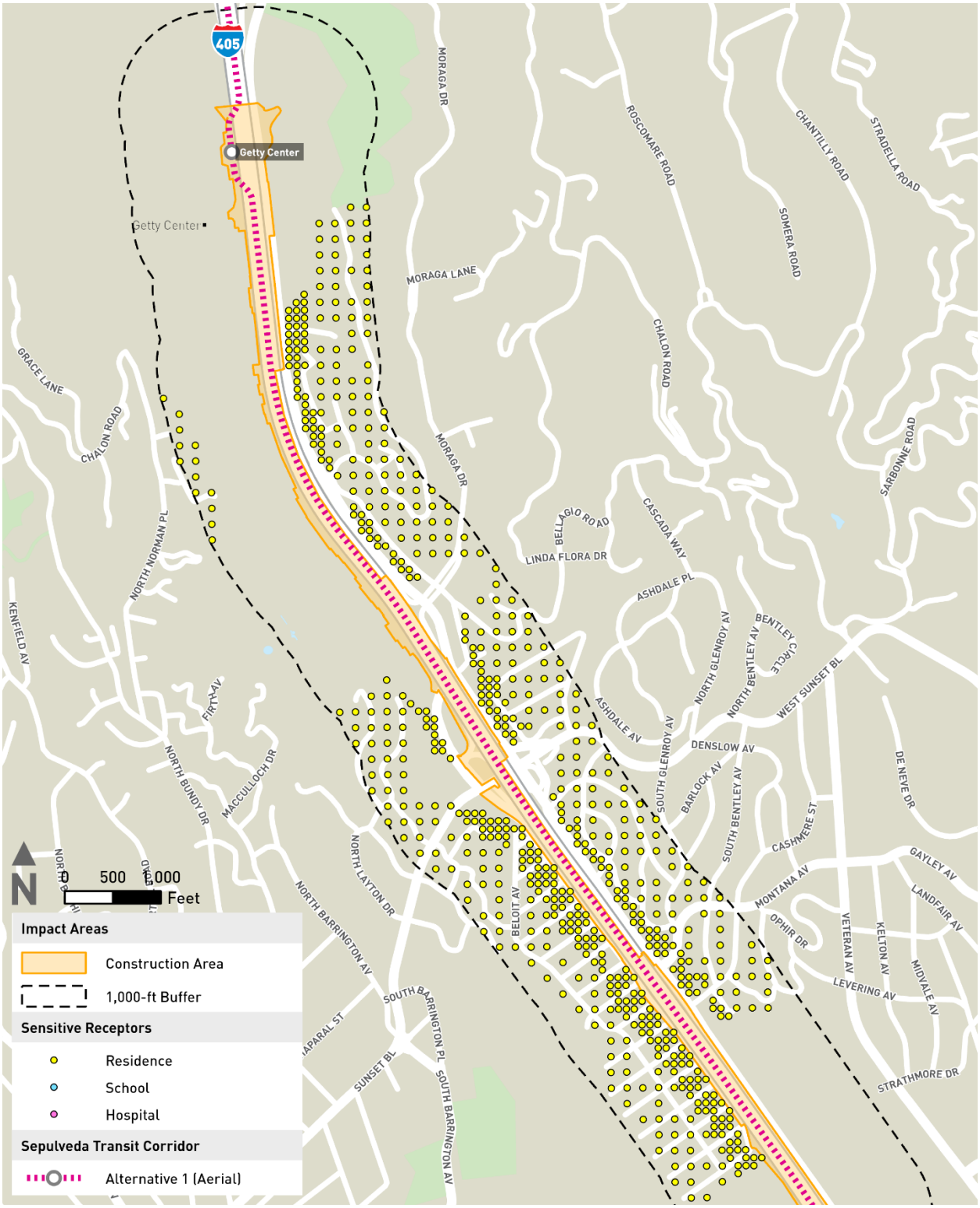
Alternative 1 is located in a dense urban environment where sensitive receptors are located in close proximity to various components of Alternative 1. Sensitive receptor locations were identified within 1,000 feet of the Alternative 1 construction area and would encompass the sensitive receptor locations during construction and operations. Sensitive receptor locations for Alternative 1 are shown on Figure 3.2-3 through Figure 3.2-8.

**Figure 3.2-3. Alternative 1: Sensitive Receptor Map Sheet 1 of 6**



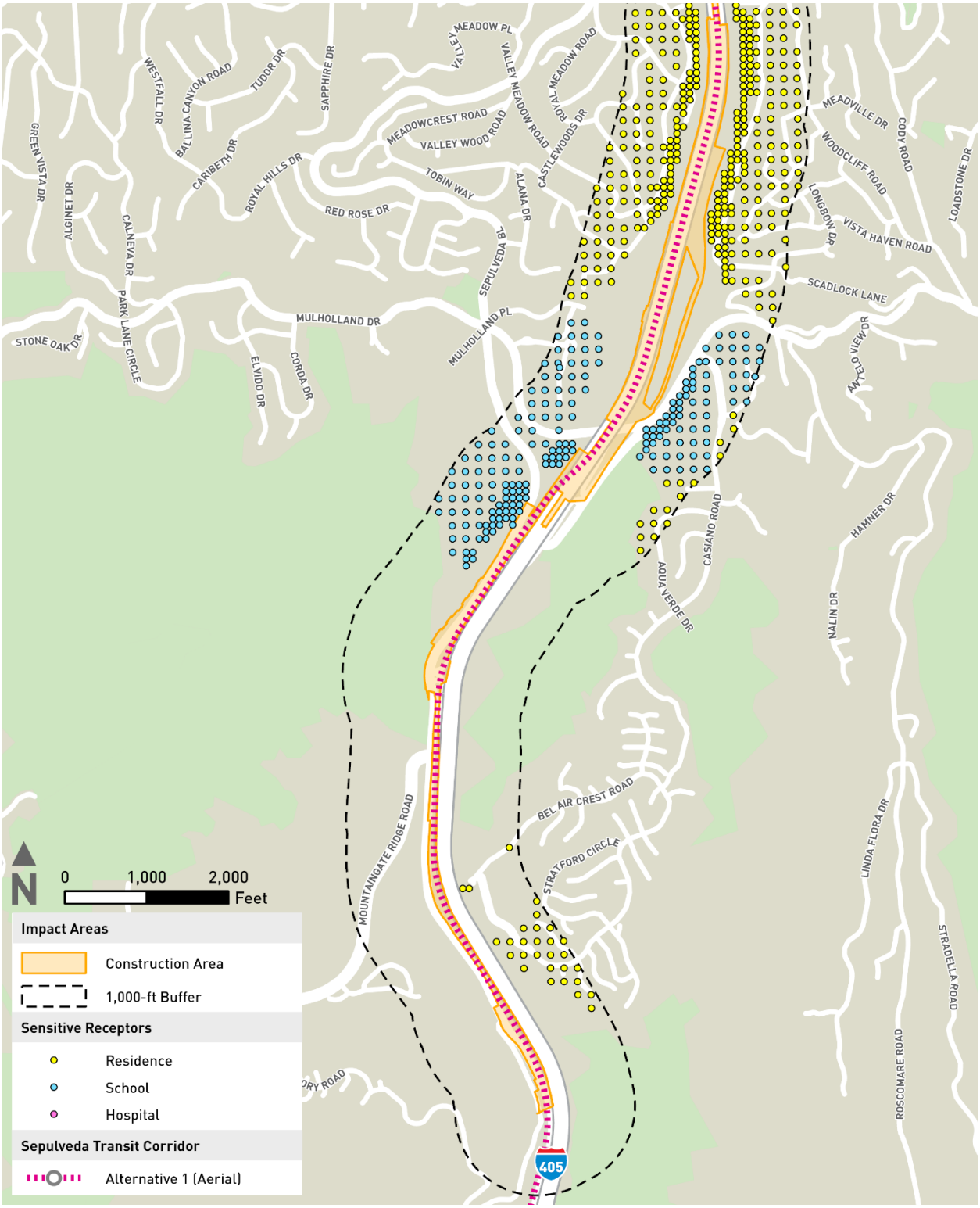

Source: HTA, 2024

**Figure 3.2-4. Alternative 1: Sensitive Receptor Map Sheet 2 of 6**



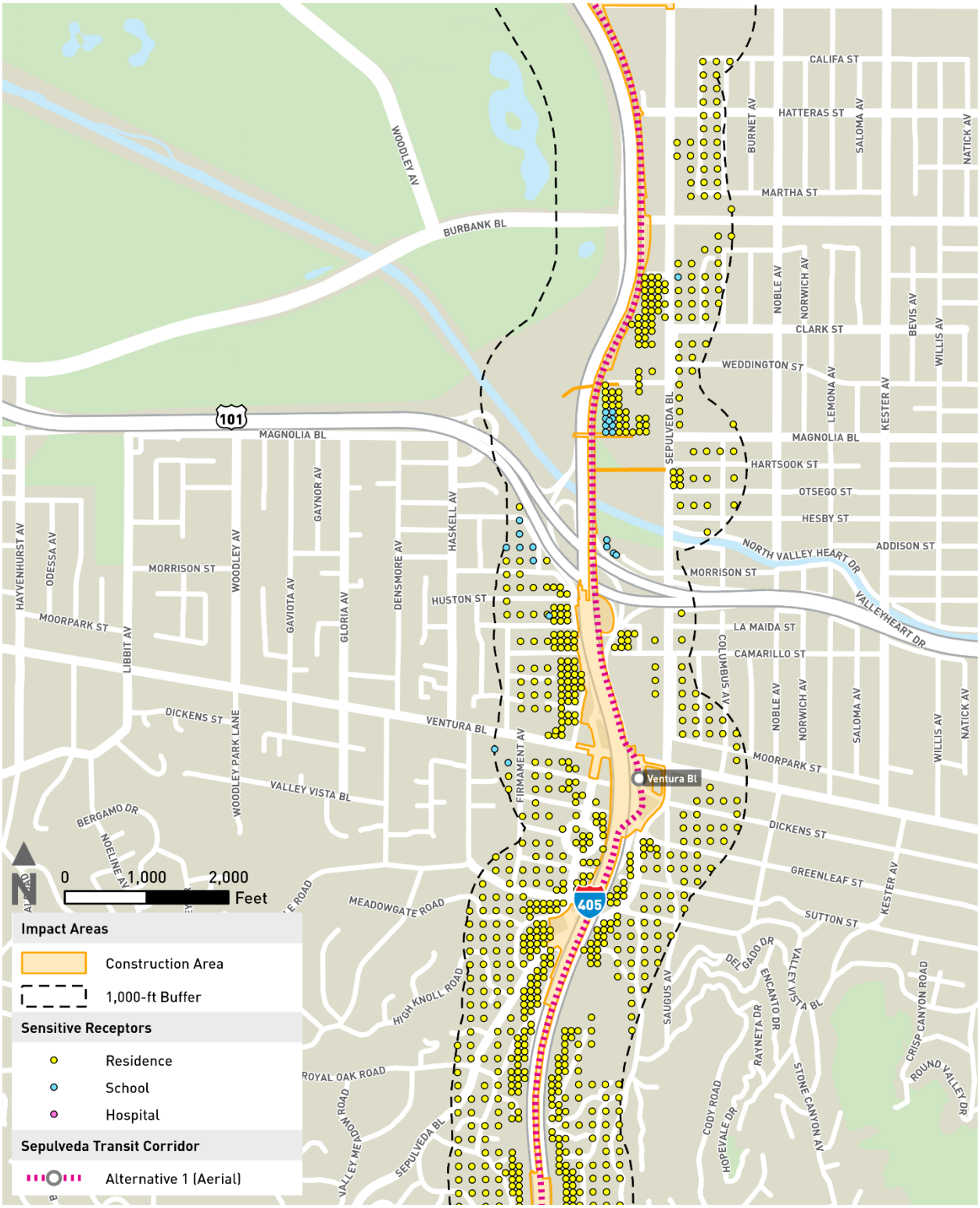

Source: HTA, 2024

**Figure 3.2-5. Alternative 1: Sensitive Receptor Map Sheet 3 of 6**



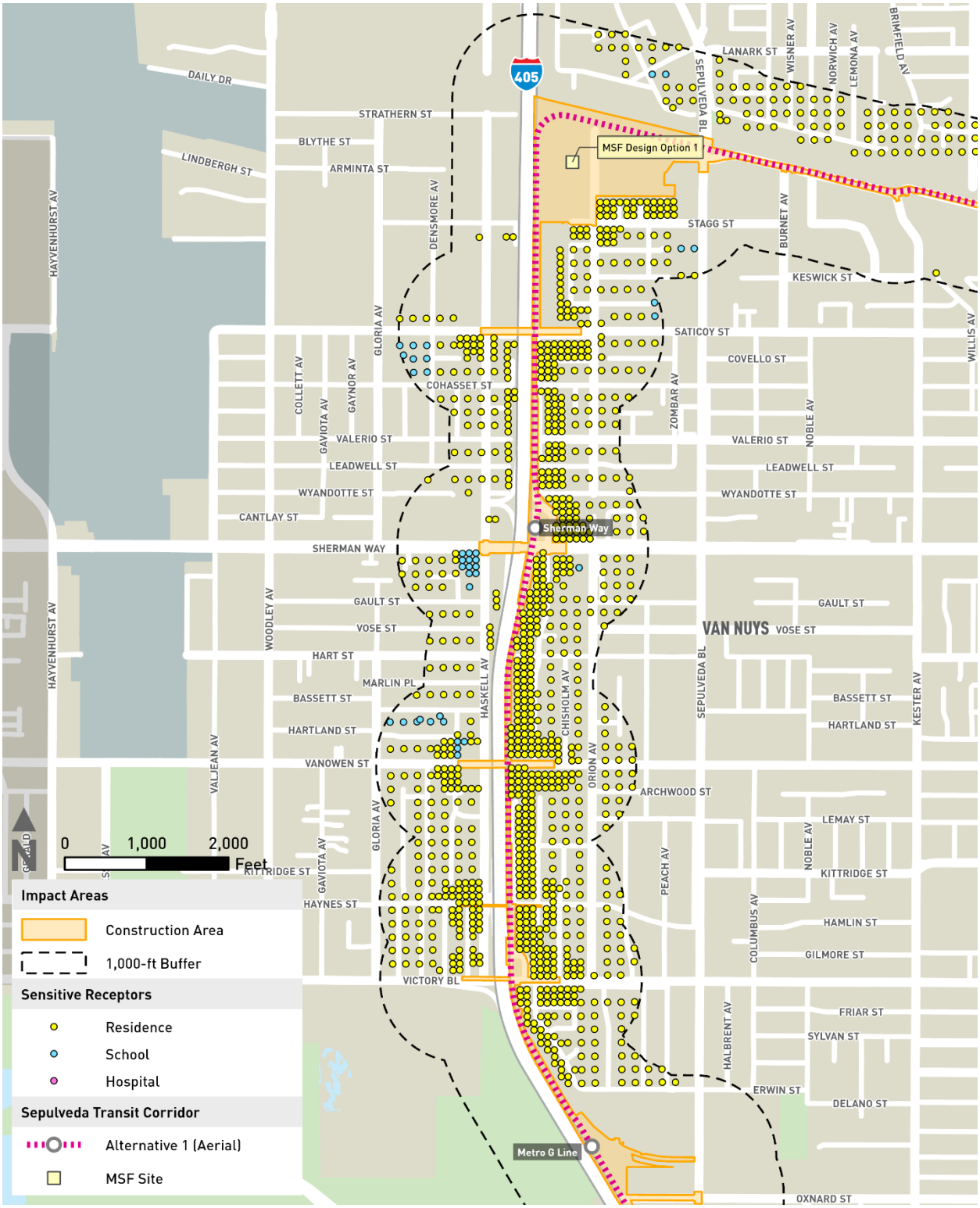

Source: HTA, 2024

**Figure 3.2-6. Alternative 1: Sensitive Receptor Map Sheet 4 of 6**



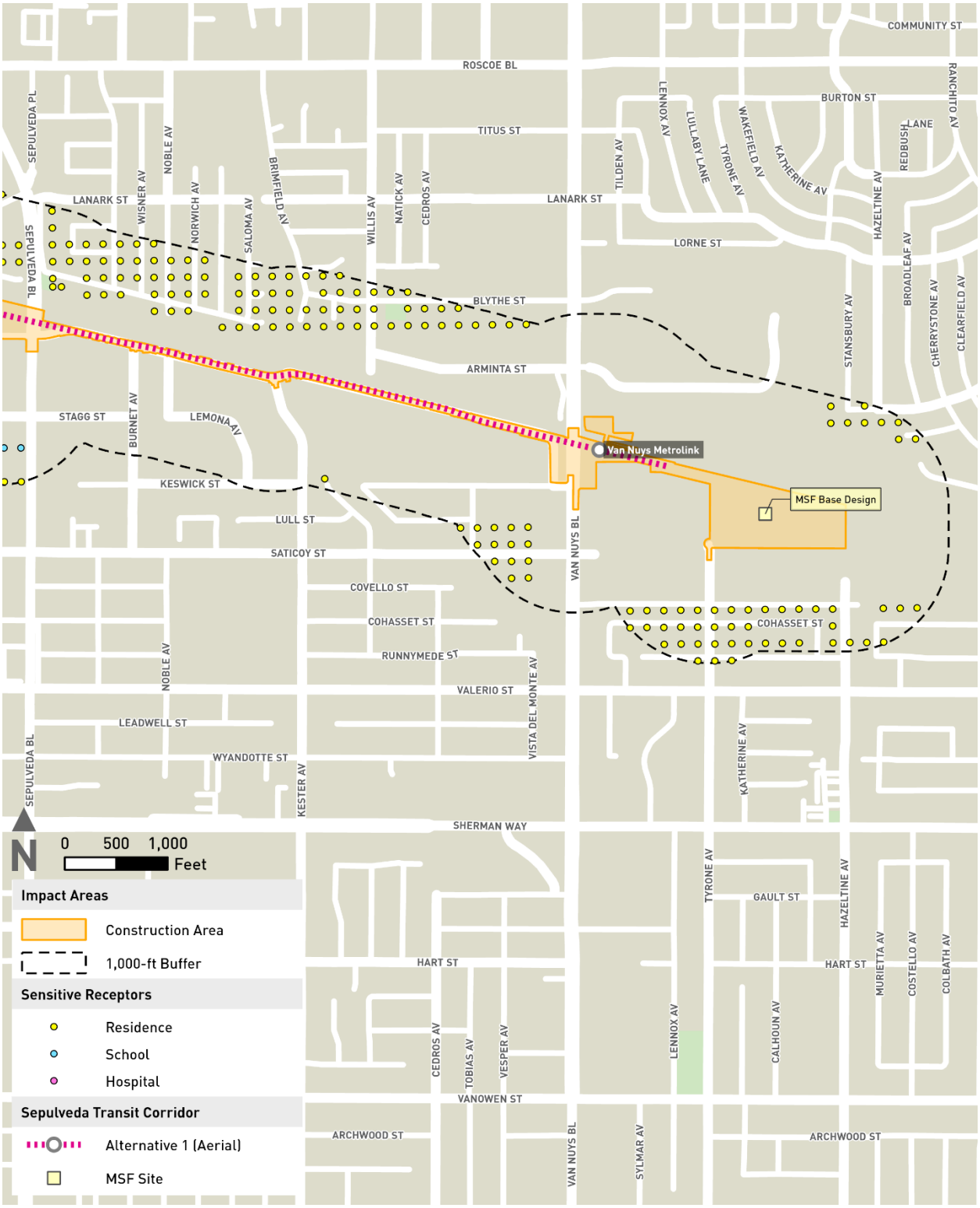

Source: HTA, 2024

**Figure 3.2-7. Alternative 1: Sensitive Receptor Map Sheet 5 of 6**




Source: HTA, 2024

**Figure 3.2-8 Alternative 1: Sensitive Receptor Map Sheet 6 of 6**

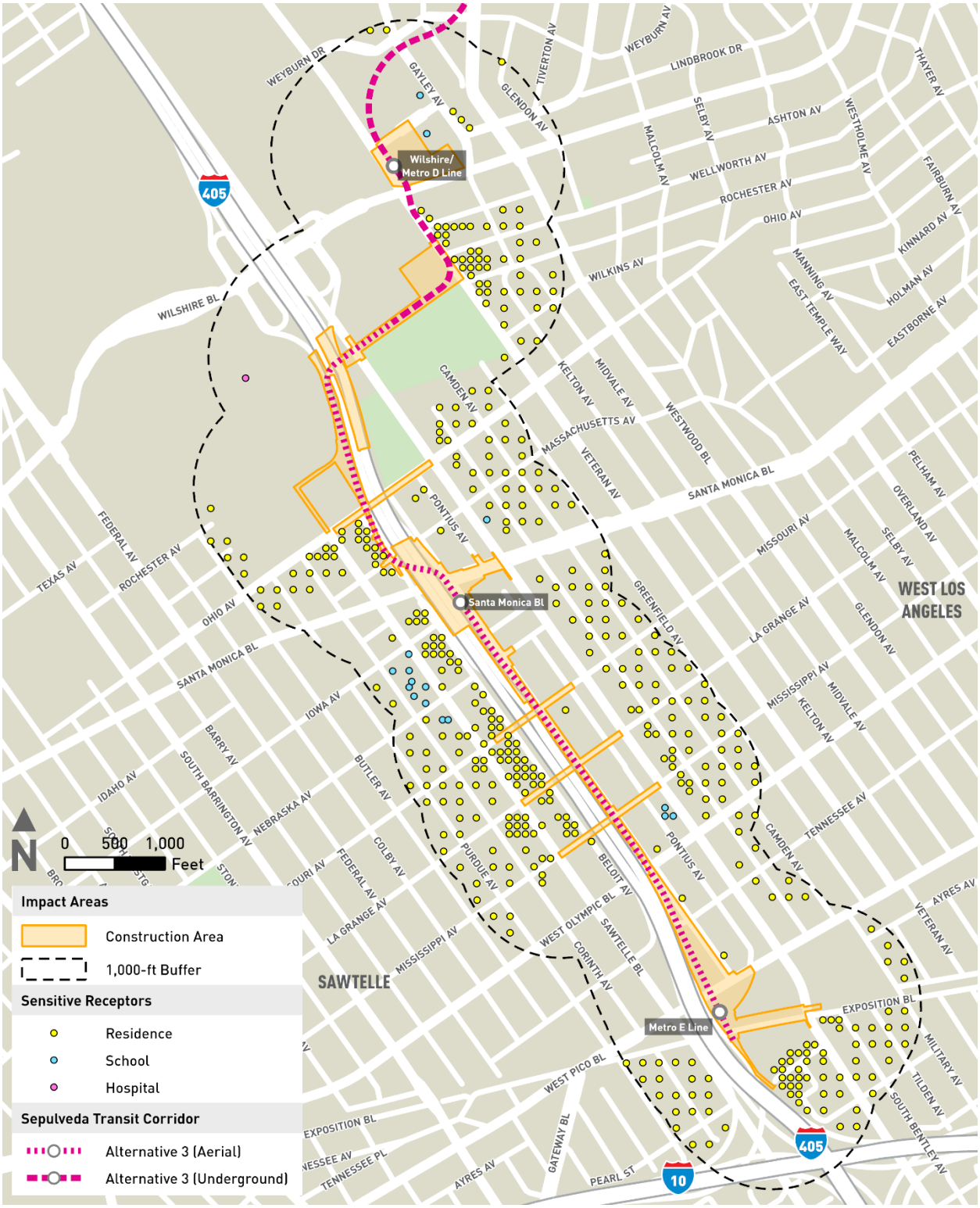



Source: HTA, 2024

### Alternative 3 Sensitive Receptors

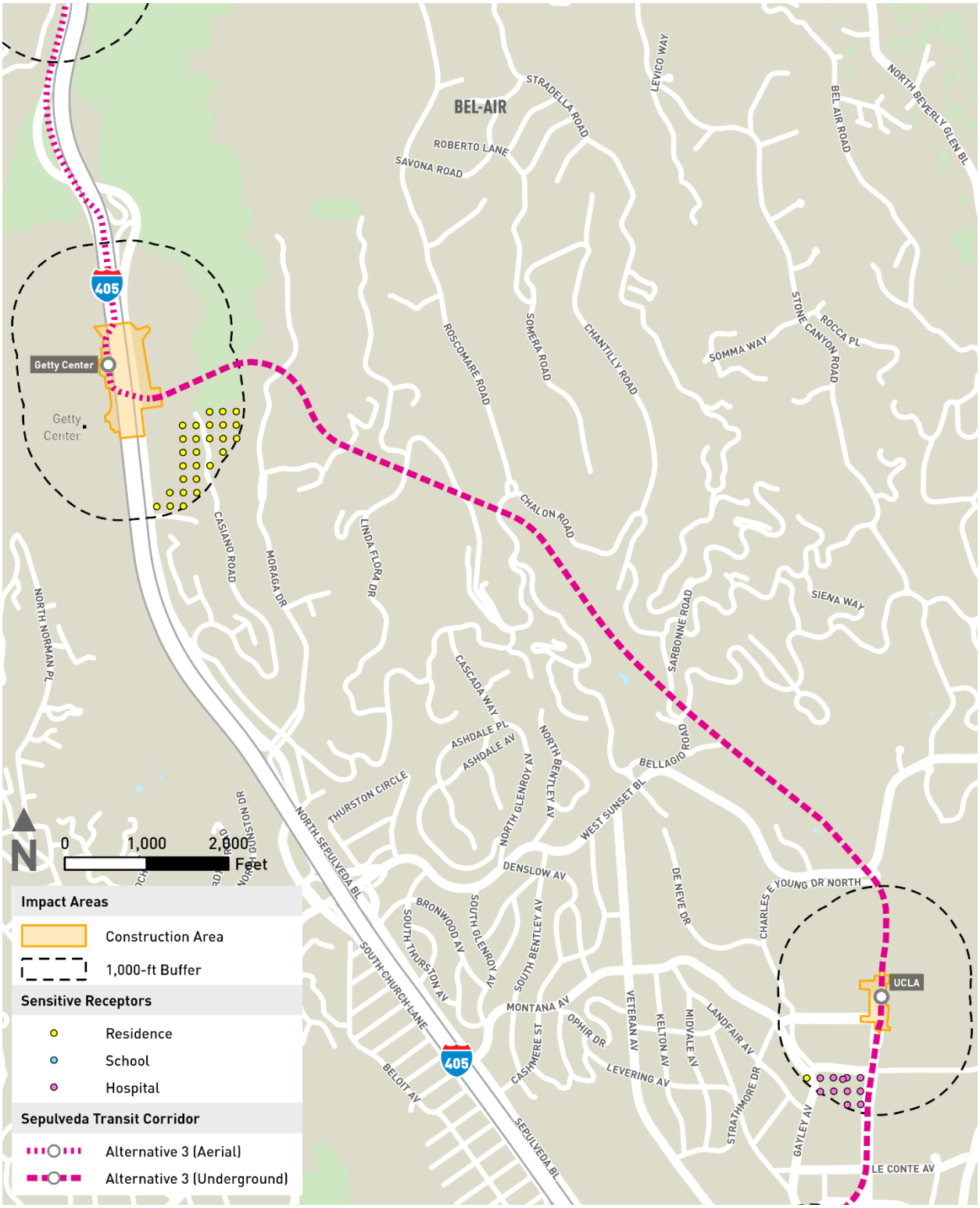
Alternative 3 is located in a dense urban environment where sensitive receptors are located in close proximity to various components of Alternative 3. Sensitive receptor locations were identified within 1,000 feet of the Alternative 3 construction area and would encompass the sensitive receptor locations during construction and operations. Sensitive receptor locations for Alternative 3 are shown on Figure 3.2-9 through Figure 3.2-14.

**Figure 3.2-9. Alternative 3: Sensitive Receptor Map Sheet 1 of 6**



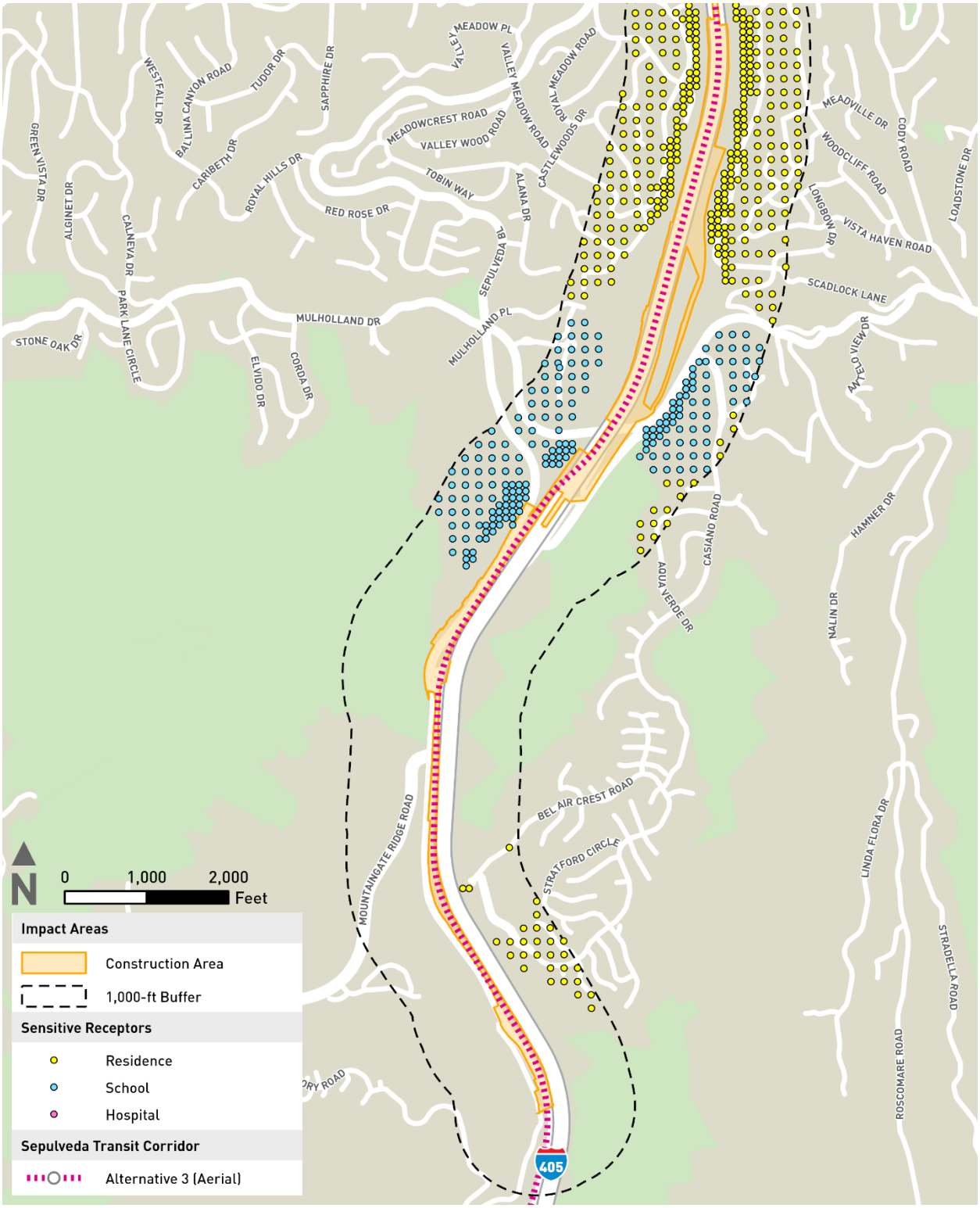

Source: HTA, 2024

**Figure 3.2-10. Alternative 3: Sensitive Receptor Map Sheet 2 of 6**



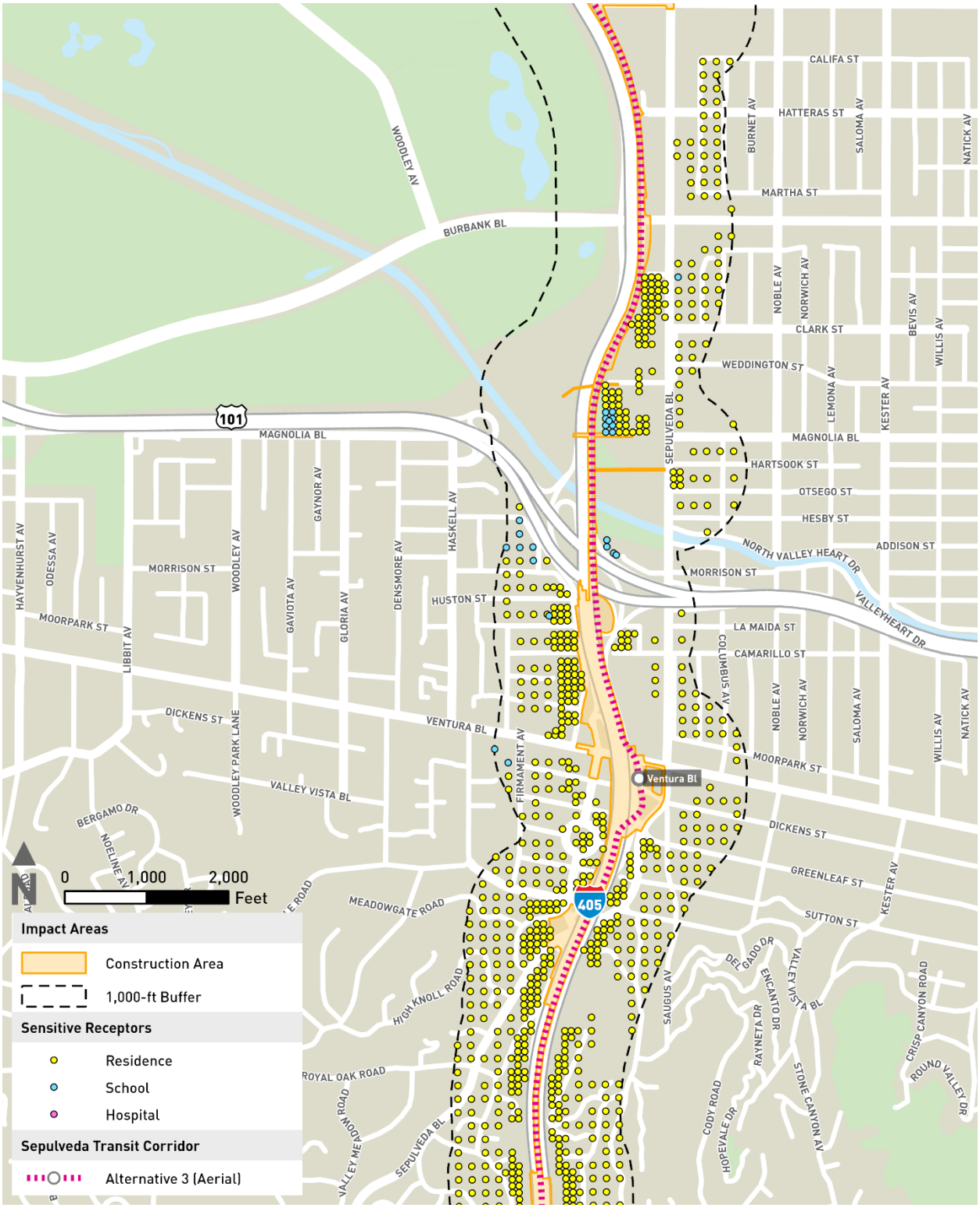

Source: HTA, 2024

**Figure 3.2-11. Alternative 3: Sensitive Receptor Map Sheet 3 of 6**



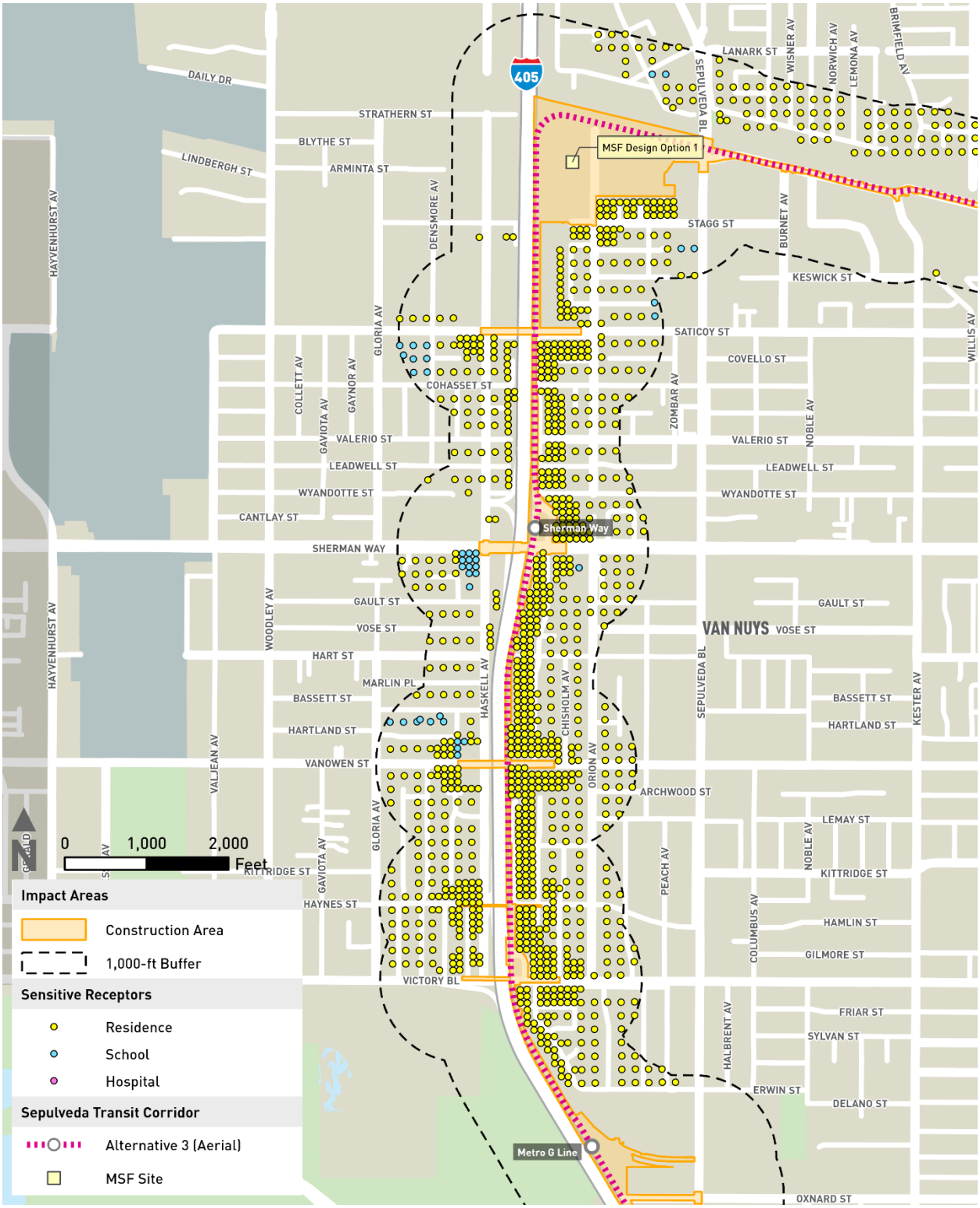

Source: HTA, 2024

**Figure 3.2-12. Alternative 3: Sensitive Receptor Map Sheet 4 of 6**



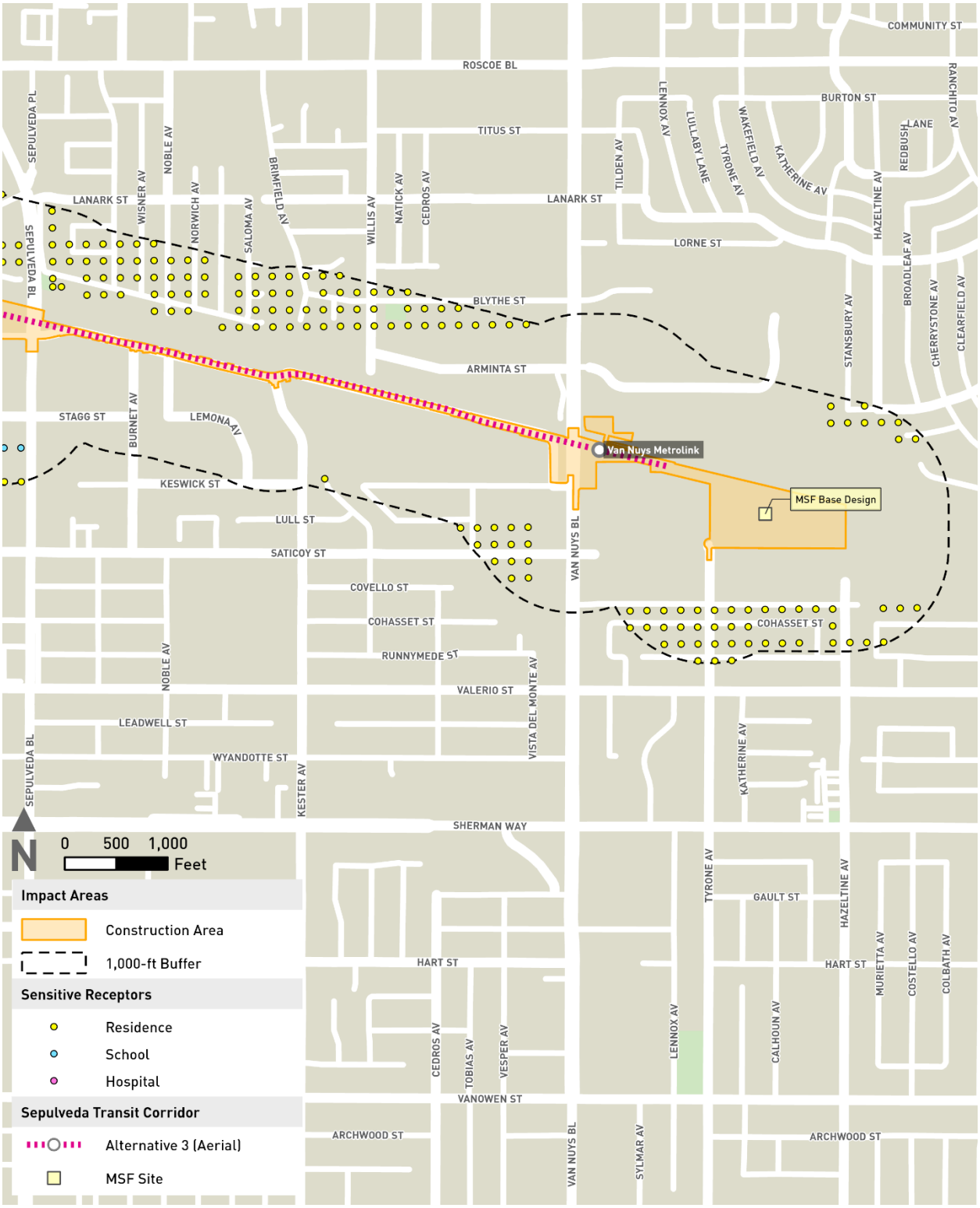

Source: HTA, 2024

**Figure 3.2-13. Alternative 3: Sensitive Receptor Map Sheet 5 of 6**




Source: HTA, 2024

**Figure 3.2-14. Alternative 3: Sensitive Receptor Map Sheet 6 of 6**

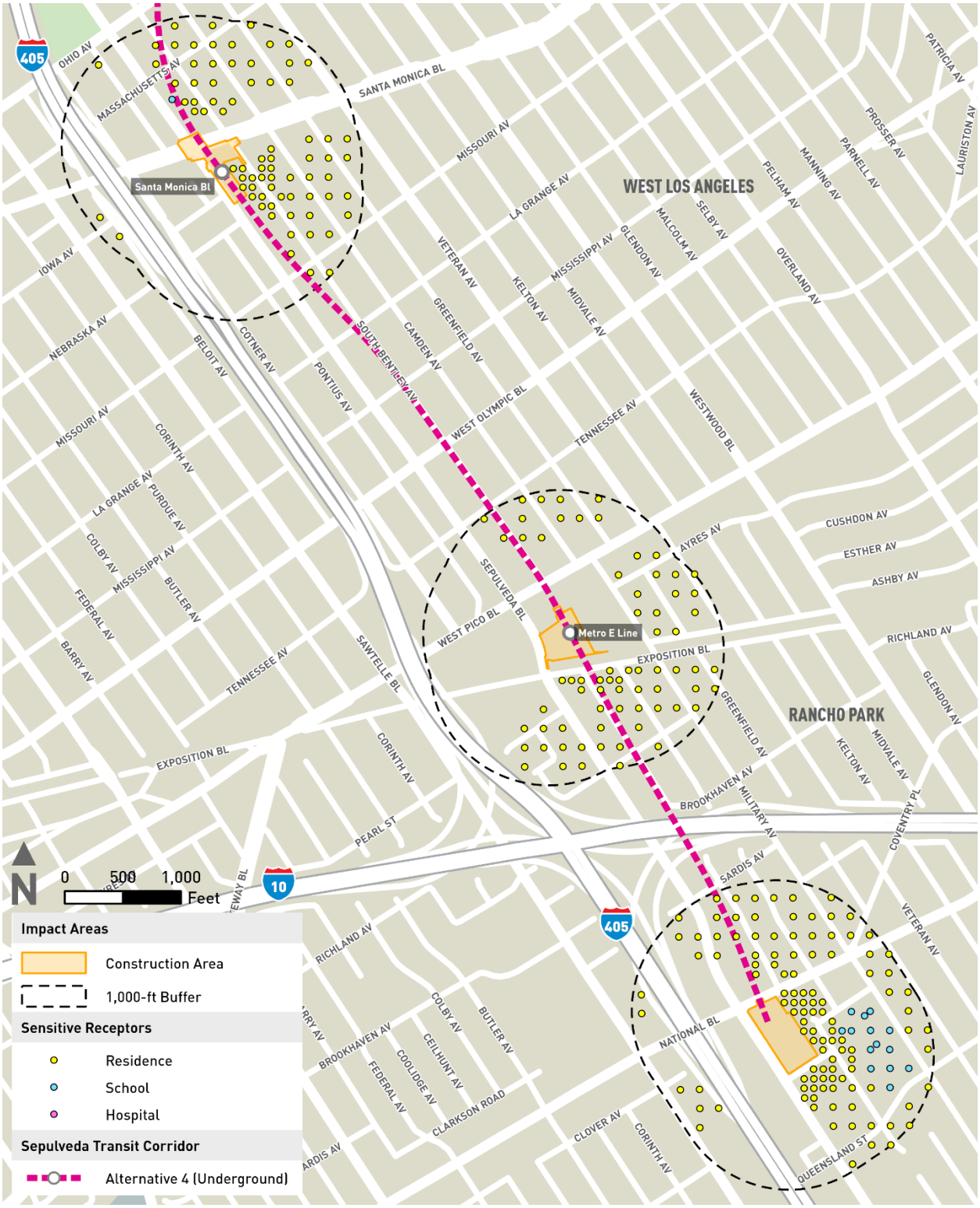



Source: HTA, 2024

### Alternative 4 Sensitive Receptors

Alternative 4 is located in a dense urban environment where sensitive receptors are located in close proximity to various components of Alternative 4. Sensitive receptor locations were identified within 1,000 feet of the Alternative 4 construction area and would encompass the sensitive receptor locations during construction and operations. Sensitive receptor locations for Alternative 4 are shown on Figure 3.2-15 through Figure 3.2-19.

**Figure 3.2-15. Alternative 4: Sensitive Receptor Map Sheet 1 of 5**

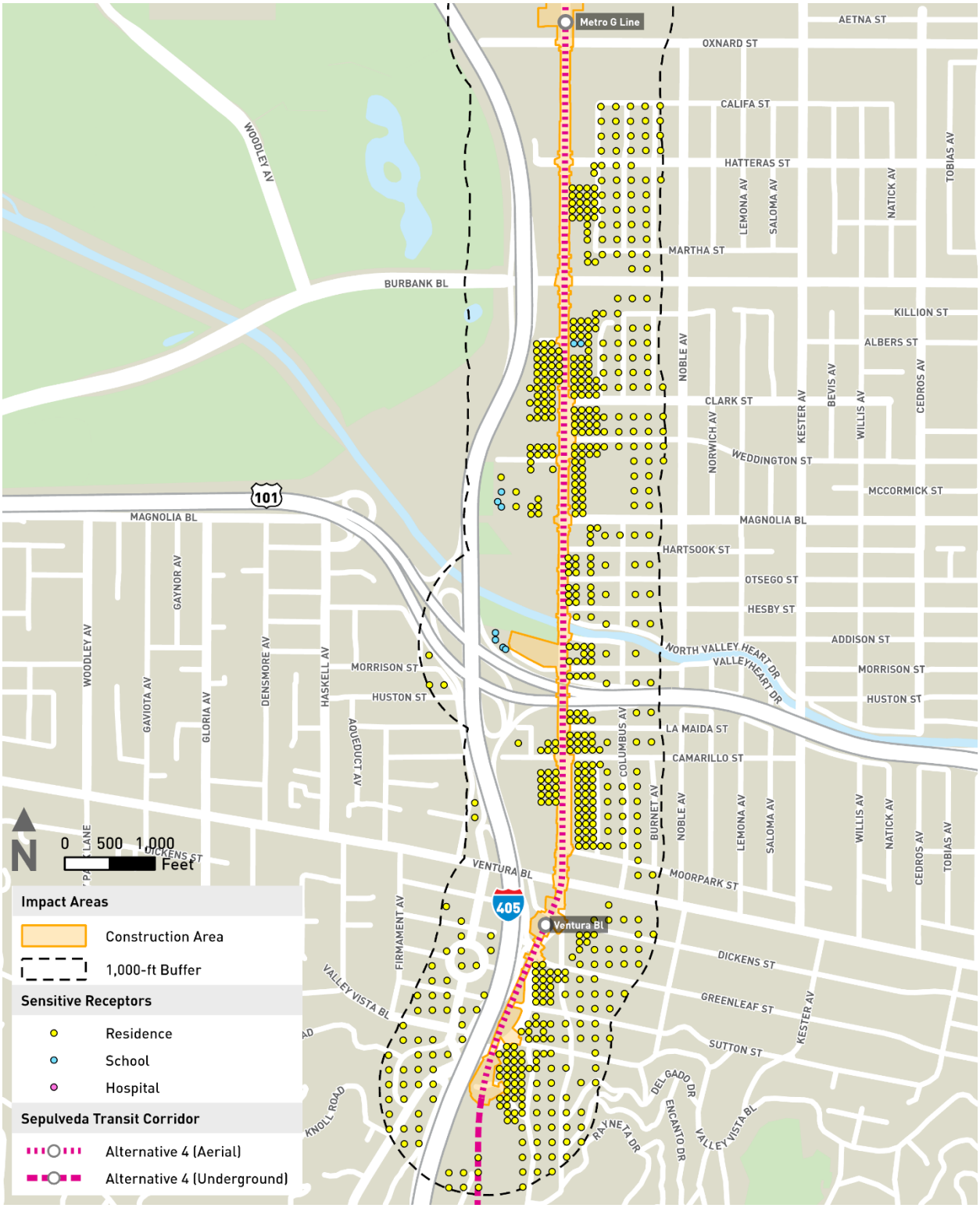



Source: HTA, 2024

**Figure 3.2-16. Alternative 4: Sensitive Receptor Map Sheet 2 of 5**

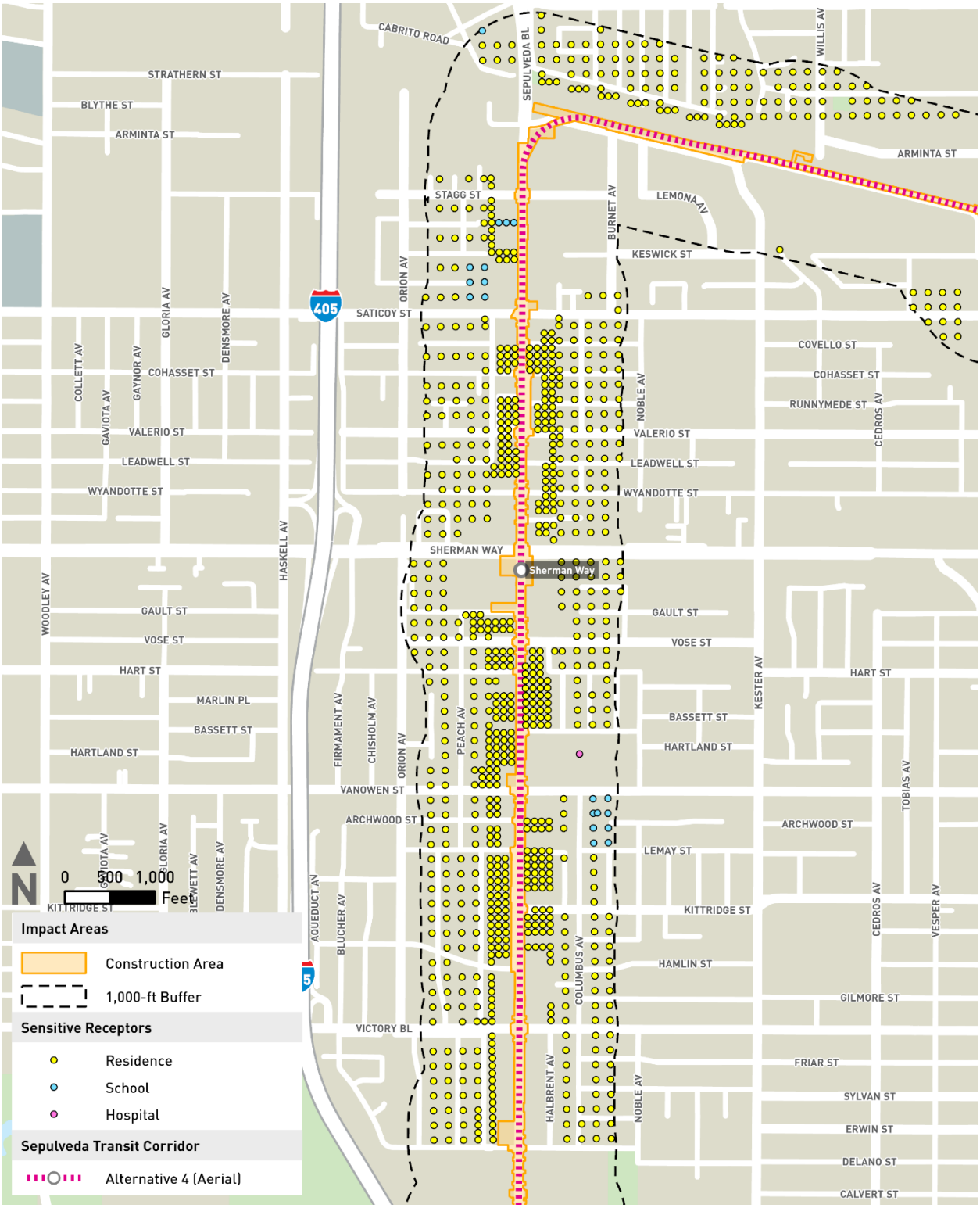

Source: HTA, 2024

**Figure 3.2-17. Alternative 4 Sensitive Receptor Map Sheet 3 of 5**



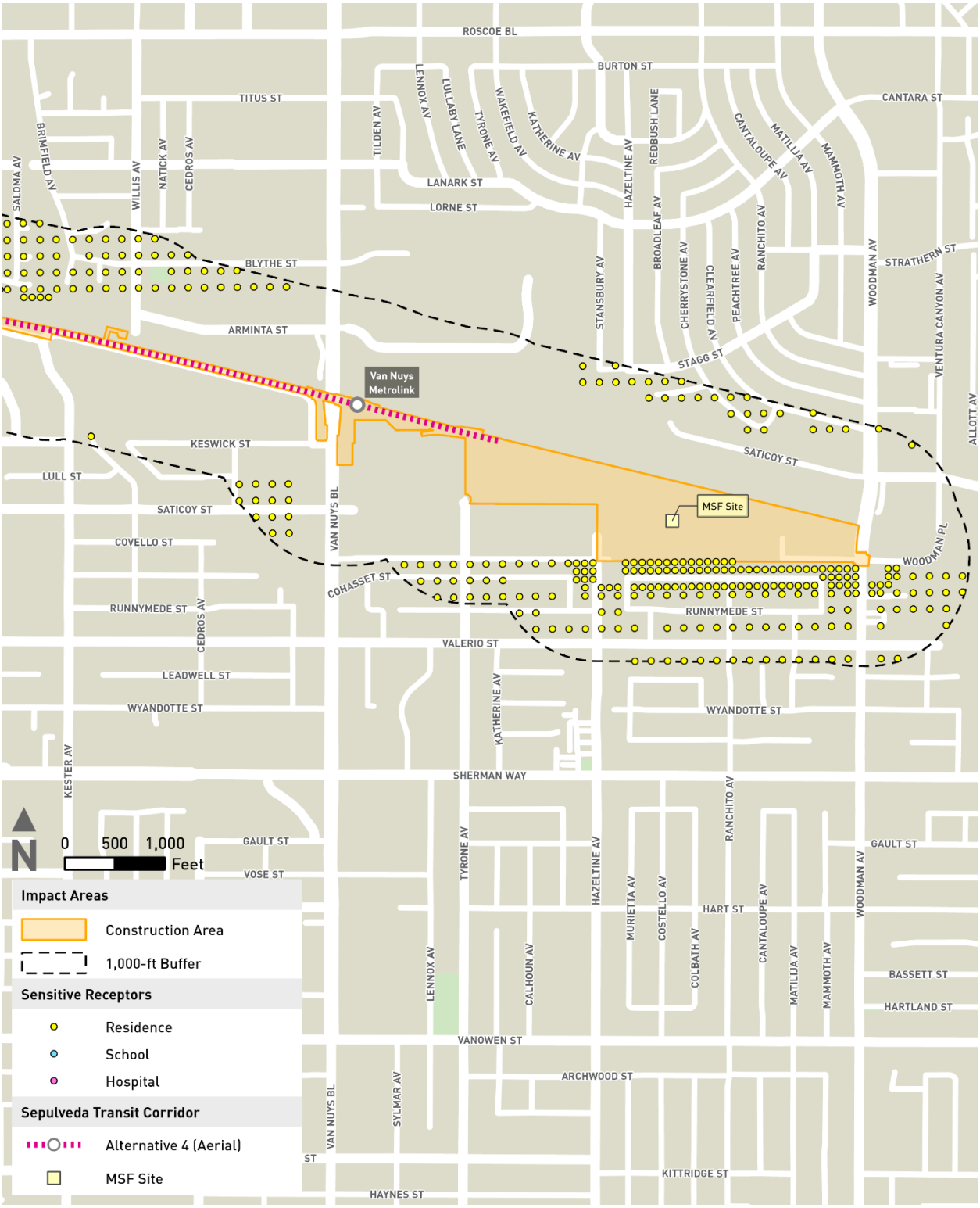

Source: HTA, 2024

**Figure 3.2-18. Alternative 4 Sensitive Receptor Map Sheet 4 of 5**




Source: HTA, 2024

**Figure 3.2-19. Alternative 4 Sensitive Receptor Map Sheet 5 of 5**

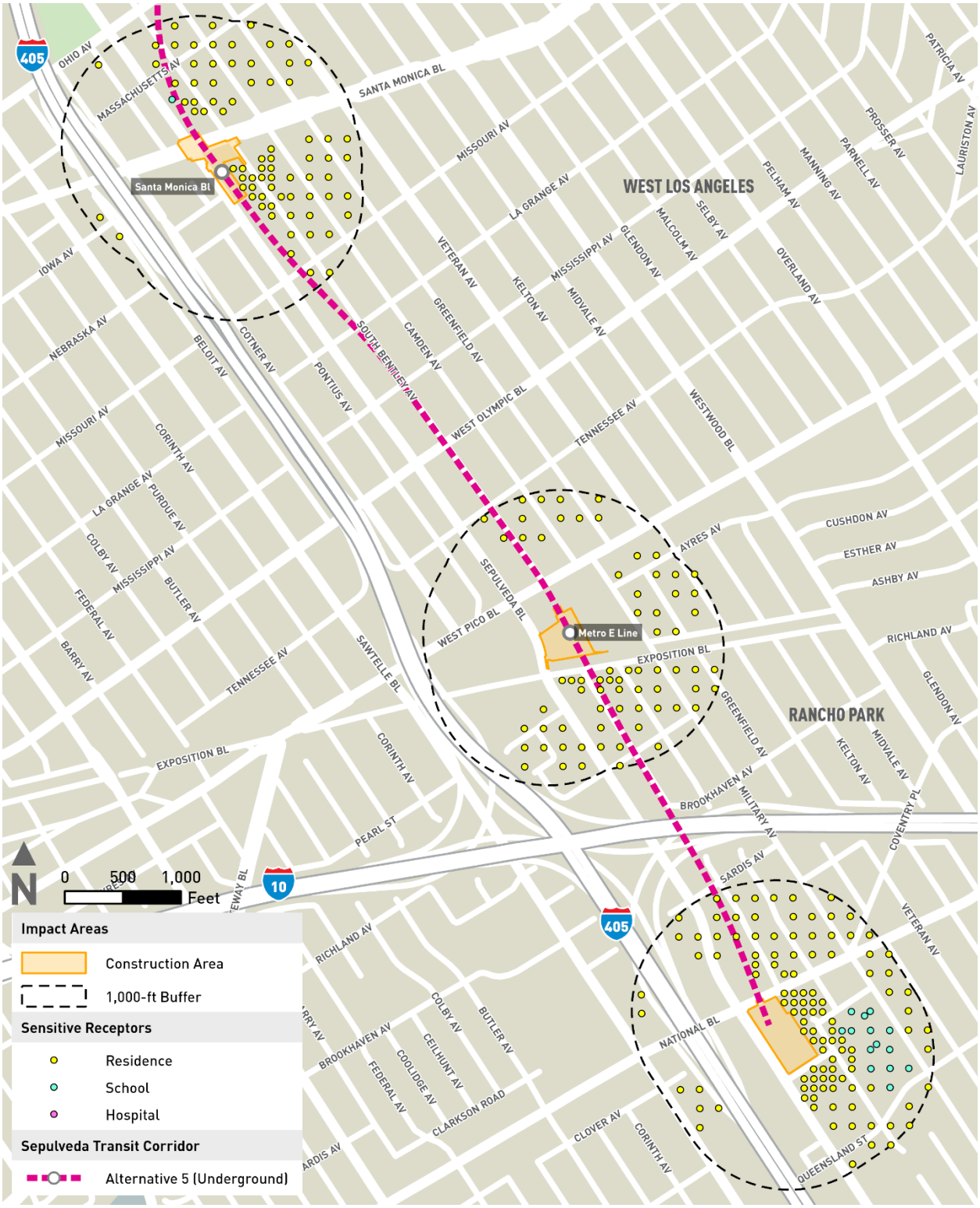



Source: HTA, 2024

### Alternative 5 Sensitive Receptors

Alternative 5 is located in a dense urban environment where sensitive receptors are located in close proximity to various components of Alternative 5. Sensitive receptor locations were identified within 1,000 feet of the Alternative 5 construction area and would encompass the sensitive receptor locations during construction and operations. Sensitive receptor locations for Alternative 5 are shown on Figure 3.2-20 through Figure 3.2-24.

**Figure 3.2-20. Alternative 5: Sensitive Receptor Map Sheet 1 of 5**

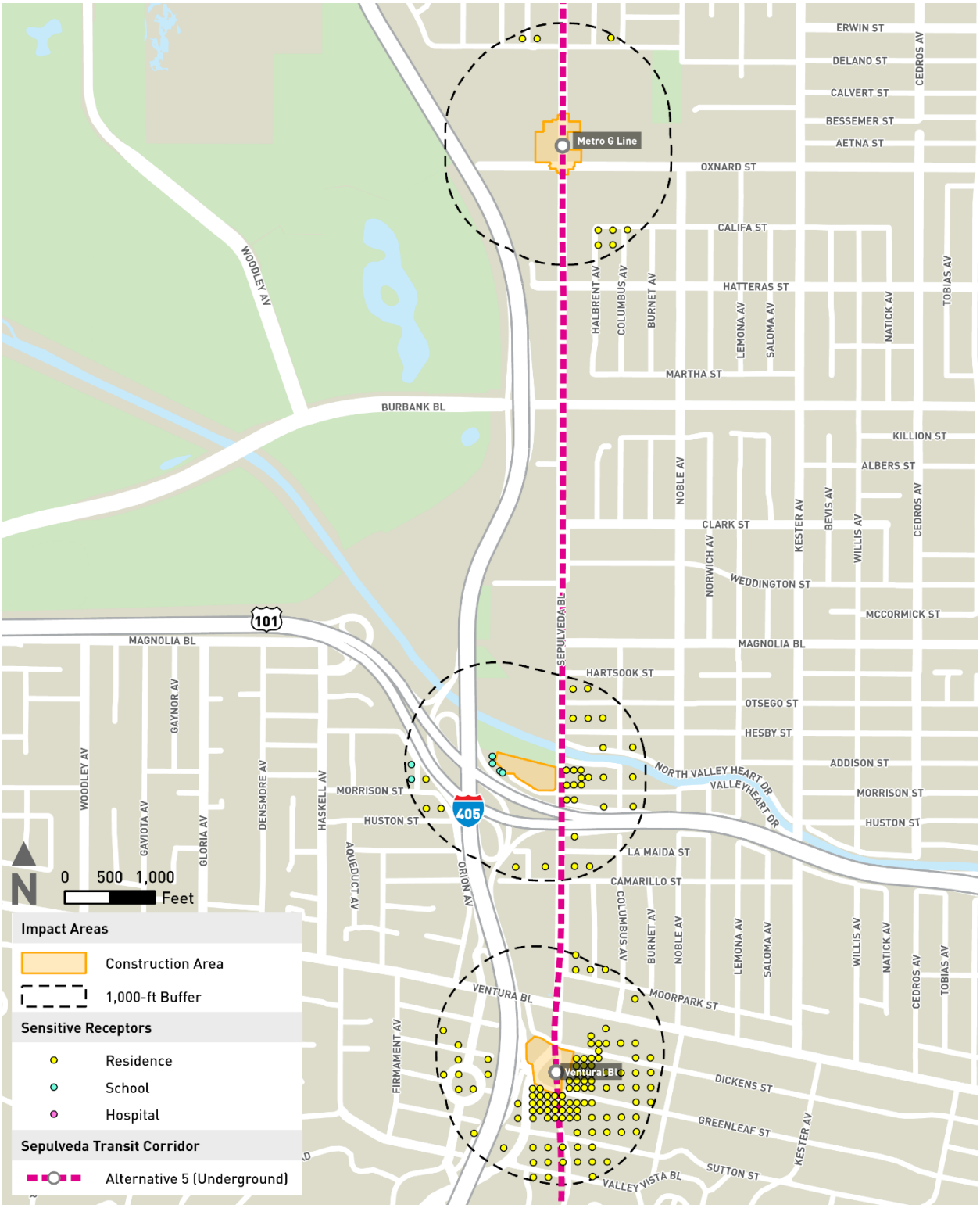



Source: HTA, 2024

**Figure 3.2-21. Alternative 5: Sensitive Receptor Map Sheet 2 of 5**

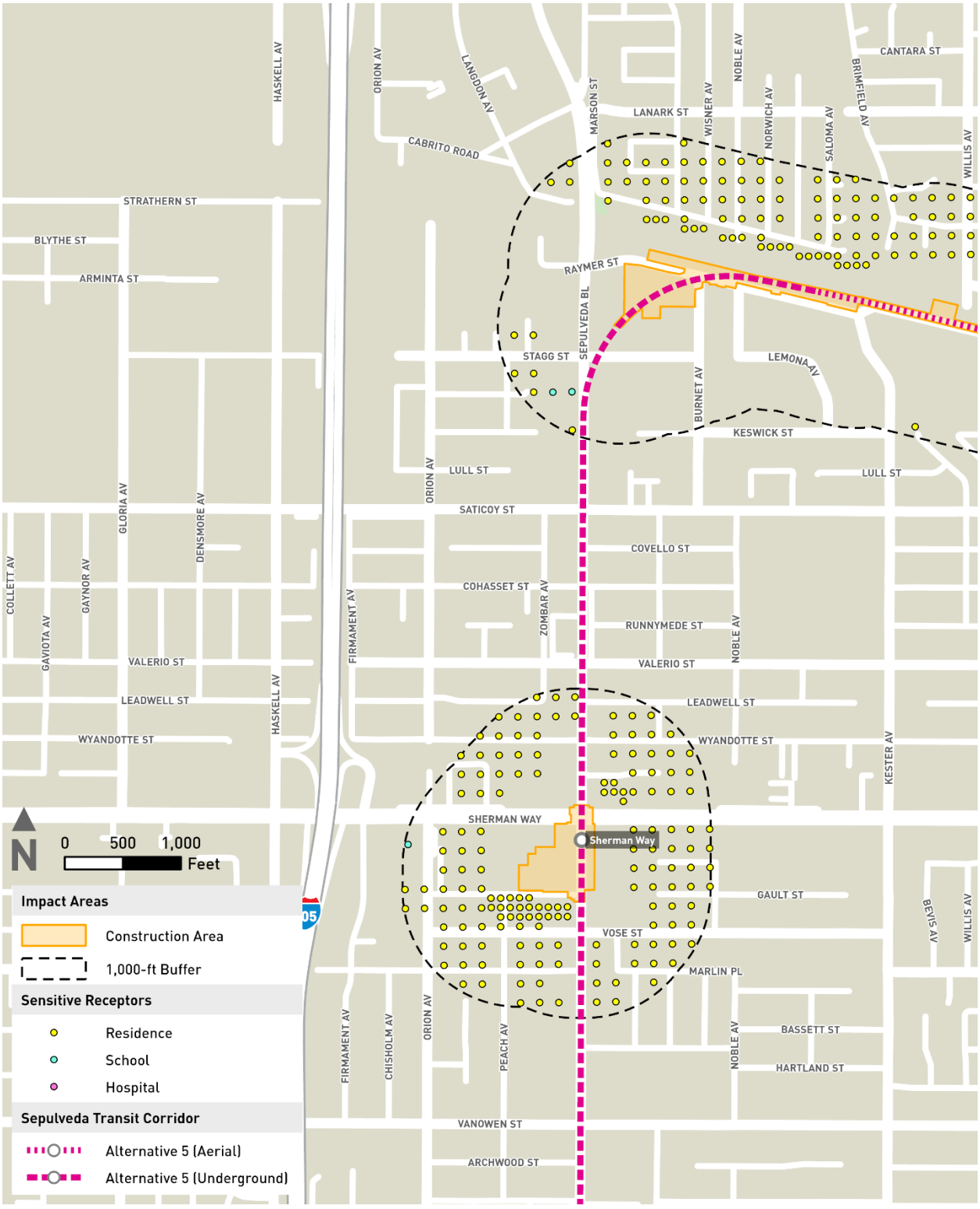

Source: HTA, 2024

**Figure 3.2-22. Alternative 5: Sensitive Receptor Map Sheet 3 of 5**



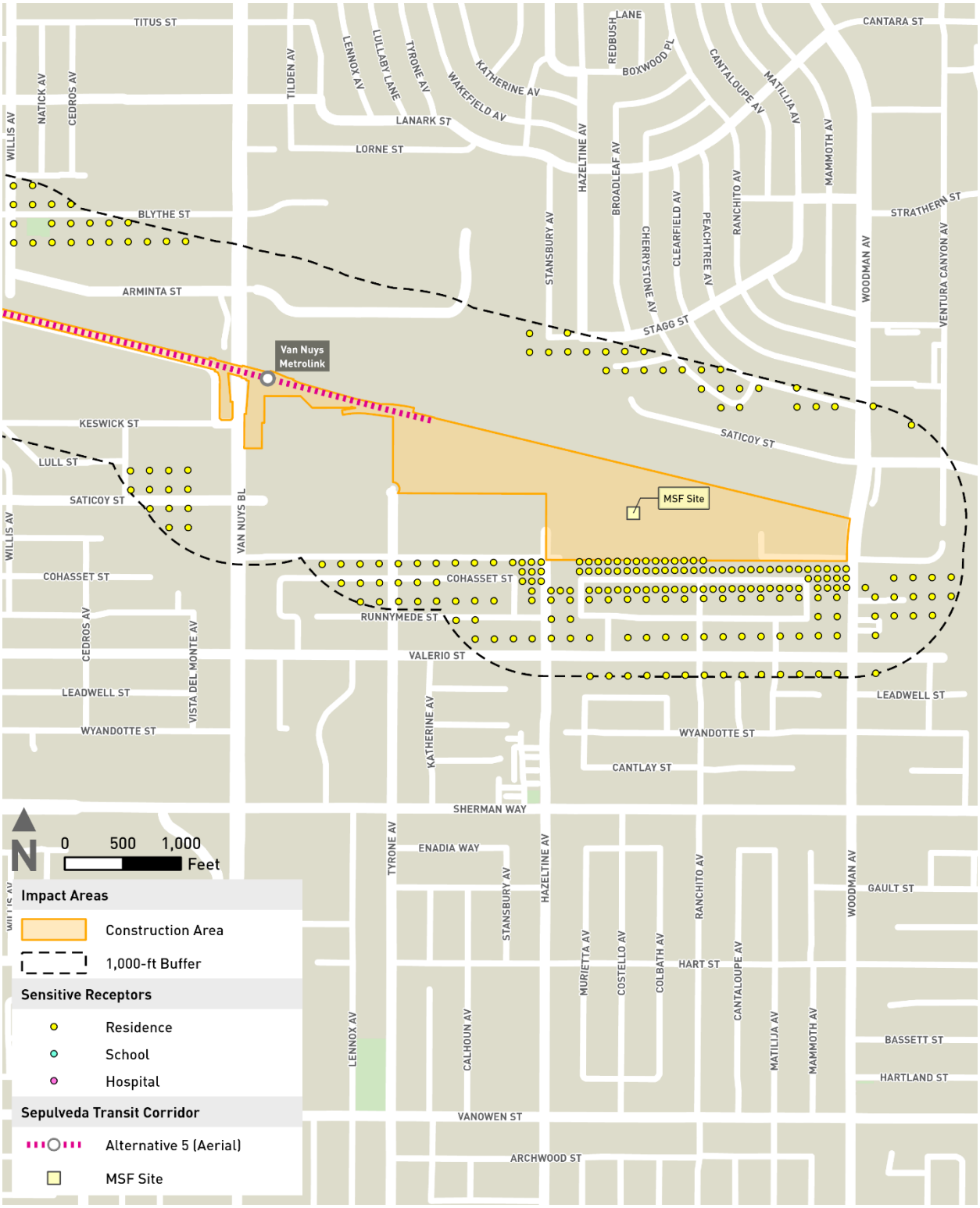

Source: HTA, 2024

**Figure 3.2-23. Alternative 5 Sensitive Receptor Map Sheet 4 of 5**




Source: HTA, 2024

**Figure 3.2-24. Alternative 5 Sensitive Receptor Map Sheet 5 of 5**

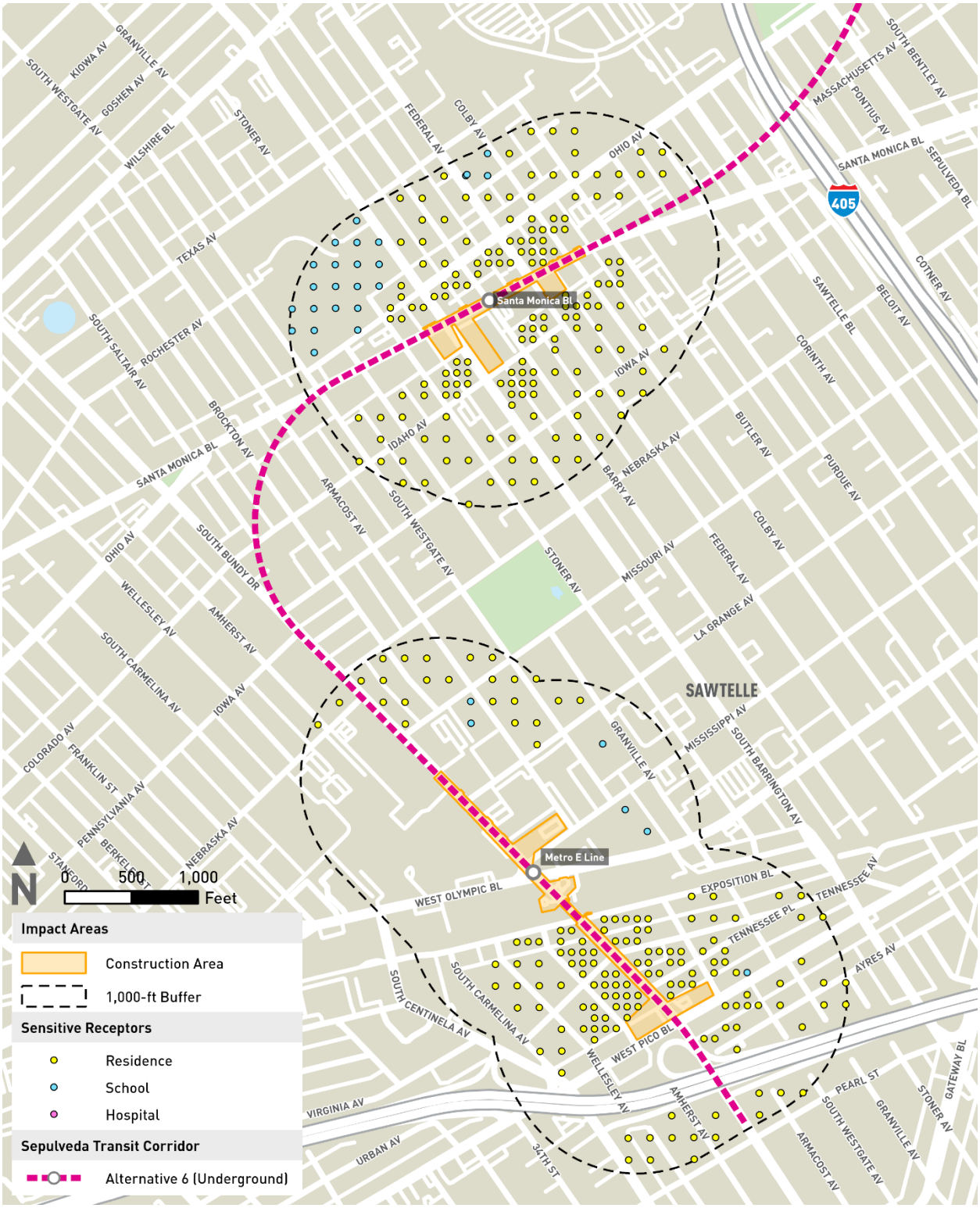



Source: HTA, 2024

### Alternative 6 Sensitive Receptors

Alternative 6 is located in a dense urban environment where sensitive receptors are located in close proximity to various components of Alternative 6. Sensitive receptor locations were identified within 1,000 feet of the Alternative 6 construction area and would encompass the sensitive receptor locations during construction and operations. Sensitive receptor locations for Alternative 6 are shown on Figure 3.2-25 through Figure 3.2-28.

**Figure 3.2-25. Alternative 6: Sensitive Receptor Map Sheet 1 of 4**

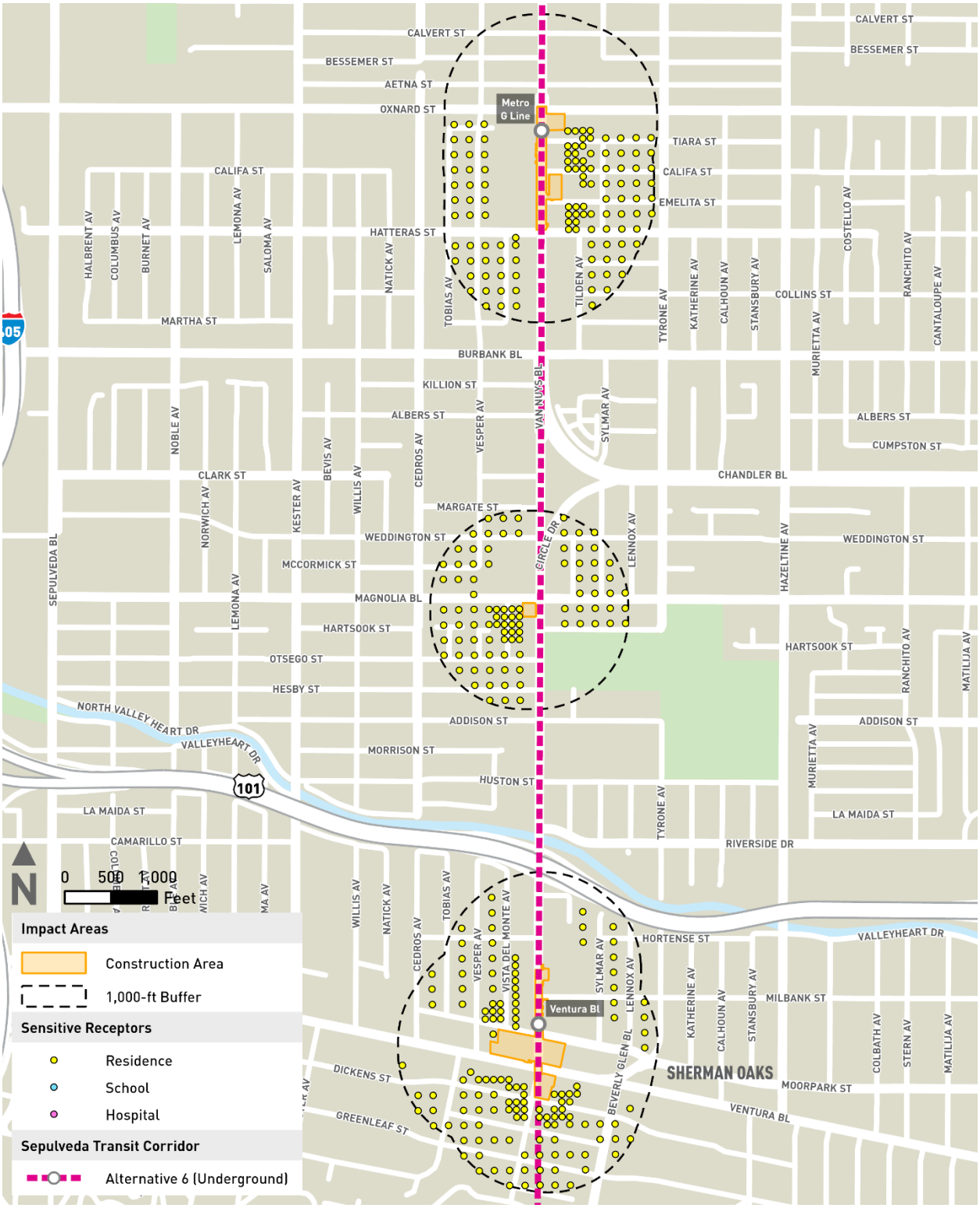



Source: HTA, 2024

**Figure 3.2-26. Alternative 6: Sensitive Receptor Map Sheet 2 of 4**

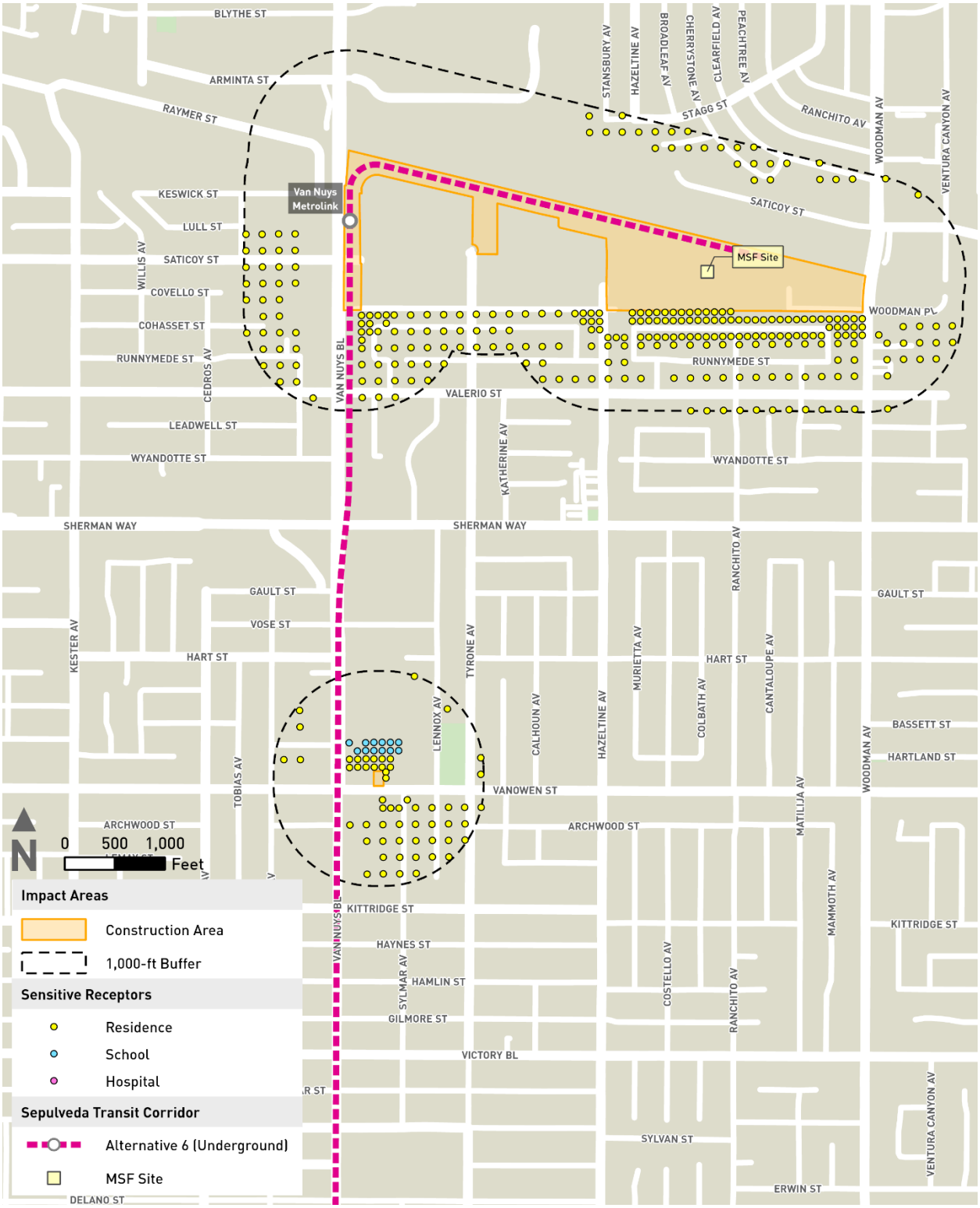

Source: HTA, 2024

**Figure 3.2-27. Alternative 6: Sensitive Receptor Map Sheet 3 of 4**




Source: HTA, 2024

**Figure 3.2-28. Alternative 6: Sensitive Receptor Map Sheet 4 of 4**




Source: HTA, 2024

### 3.2.4.7 Regional Highway Emissions

Existing conditions (Baseline 2021) emissions from regional mobile sources were estimated in the analysis for comparison with project alternatives for informational purposes only. As discussed in Section 0, air quality impacts for project alternatives have been evaluated by the net change in emissions between project alternatives and 2045 without Project conditions. Table 3.2-11 summarizes the criteria pollutant emissions for existing conditions and 2045 without Project conditions.

**Table 3.2-11. Existing Conditions (Baseline Year 2021) and 2045 without Project Conditions Regional Mobile Source Criteria Pollutant Emissions**

| Project Alternative | Daily VMT[a] | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|---|
| | | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| Existing Conditions (2021) | 456,869,300 | 27,490 | 222,016 | 1,219,501 | 3,920 | 329,216 | 86,051 |
| 2045 without Project Conditions | 568,557,200 | 8,987 | 88,927 | 623,264 | 3,487 | 408,902 | 105,487 |

Source: HTA, 2024

[a]Vehicle miles traveled data provided from *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) used 2019 as the base year for the vehicle miles traveled analysis because it is the most recent year for which Metro's CBM18B Transportation Analysis Model has been calibrated.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{2.5}$ = particulate matter of 2.5 microns or less
$PM_{10}$ = particulate matter of 10 microns or less
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

## 3.2.5 Environmental Impacts

### 3.2.5.1 Impact AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

#### Project Alternatives

***No Project Alternative***

**Impact Statement**

**Operational Impact: Significant and Unavoidable**

**Construction Impact: Less than Significant**

*Operational Impacts*

The Project, identified as project number 1160001 (Sepulveda Pass Transit Corridor Phase 2), is included in the 2024-2050 RTP/SCS (SCAG, 2024), which is Southern California's long-range Regional Transportation Plan and Sustainable Communities Strategy (that serves as the foundation for estimating the region's transportation sector air pollutant emissions through 2050. The SCAG General Council adopted the plan on April 4, 2024. The Federal Highway Administration and the FTA found the plan to conform to the State Implementation Plan (SIP) on May 10, 2024. Transportation projects identified in a conforming RTP are consistent with the emissions reduction strategies outlined in the applicable regional AQMP.

The region's 2022 AQMP was adopted by SCAQMD Governing Board on December 2, 2022. The 2022 AQMP outlines comprehensive control strategies to meet particulate matter ($PM_{2.5}$), ozone ($O_3$), and lead (Pb) standards, and to maintain carbon monoxide (CO), nitrogen dioxide ($NO_2$), and $PM_{10}$ standards. Transportation projects identified in a currently conforming RTP are consistent with the transportation sector emissions budgets used in the formulation of the regional AQMP. Under the No Project Alternative, the project alternatives would not be constructed. Because the Project was included in SCAG's RTP and SCAQMD's AQMP, the No Project Alternative would conflict with these planning documents. Therefore, the No Project Alternative would conflict with the 2022 AQMP and would result in a significant and unavoidable impact.

*Construction Impacts*

The No Project Alternative includes modifications to Metro Line 761. The modifications would include the construction of additional bus stops for Metro Line 761 to facilitate route changes under the No Project Alternative. Construction of Metro Line 761 elements would be temporary and would conform with applicable federal, state, regional, and local regulations and standards related to criteria pollutant emissions. Additionally, the project would undergo project-specific environmental clearance and would implement project-specific mitigation measures, as necessary to avoid or minimize potential criteria pollutant impacts. Construction of additional bus stops along Metro Line 761 would result in minimal criteria pollutant emissions as installation of bus stop components (benches, enclosures, signage, etc.) could be installed in a few days and would not require substantial amounts of off-road equipment or truck hauling. Construction of the bus stops would be conducted in accordance with measures in Metro's *Green Construction Policy* to reduce criteria pollutant emissions where possible. Overall, because project alternatives would not be constructed under the No Project Alternative and construction of additional bus stops along Metro Line 761 would result in minimal criteria pollutant emissions and comply with Metro's *Green Construction Policy*, criteria pollutants generated under the No Project Alternative would be nominal and would not conflict with emission reduction goals in the 2022 AQMP; therefore, construction impacts for the No Project Alternative would be less than significant.

***Alternative 1, Alternative 3, Alternative 4, Alternative 5, and Alternative 6***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Less than Significant**

*Operational Impacts*

The Project, identified as project number 1160001 (Sepulveda Pass Transit Corridor Phase 2), is included in the 2024-2050 RTP/SCS (SCAG, 2024). The SCAG General Council adopted the plan on April 4, 2024. The Federal Highway Administration and the Federal Transit Administration found the plan to conform to the SIP on May 10, 2024. Transportation projects identified in a conforming RTP are consistent with the emissions reduction strategies outlined in the applicable regional AQMP.

Transportation projects identified in a currently conforming RTP are consistent with the transportation-sector emissions budgets used in the formulation of the regional AQMP. Therefore, all project alternatives (i.e. Alternative 1, Alternative 3, Alternative 4, Alternative 5, and Alternative 6), would be considered consistent with the AQMP resulting in a less than significant impact.

*Construction Impacts*

Construction projects within the jurisdiction of the SCAQMD must comply with several rules and regulations aimed at controlling air pollution and minimizing environmental impact. Key SCAQMD rules that typically apply to construction projects include the following, among others:

- Rule 403 - Fugitive Dust reduces emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area. Contractors must implement best management practices such as watering down construction sites, covering trucks, and using windbreaks.
- Rule 401 - Visible Emissions prohibits the discharge of visible air contaminants into the atmosphere. Contractors must ensure that emissions from construction activities do not exceed the visible emissions limits, typically by controlling dust and particulate matter.
- Rule 1403 - Asbestos Emissions from Demolition/Renovation Activities regulates the emissions of asbestos during demolition and renovation activities. Contractors must conduct thorough inspections for asbestos, notify SCAQMD before starting work, and follow specific procedures for handling and disposing of asbestos-containing materials.
- Rule 1113 - Architectural Coatings limits the VOC content in architectural coatings. Contractors must use paints and coatings that comply with the VOC content limits specified by the rule.
- Rule 1108 - Cutback Asphalt limits the VOC emissions from the use of cutback asphalt and emulsified asphalt. Contractors must use compliant asphalt products with low VOC content.
- Rule 1157 - $PM_{10}$ Emission Reductions from Aggregate and Related Operations serves to reduce $PM_{10}$ emissions from aggregate operations, which can be a component of construction projects involving earth-moving activities. Contractors must implement dust control measures during material handling and processing operations.

All project alternatives would comply with all relevant SCAQMD rules, and as such, would implement all required AQMP emissions control measures during construction. Impacts would be less than significant.

### 3.2.5.2 Impact AQ-2: Would the 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?

#### Project Alternatives

***No Project Alternative***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Less than Significant**

*Operational Impacts*

The No Project Alternative (i.e., Future Cumulative Without Project Scenario) regional criteria pollutant emissions were estimated for two scenarios: No Project Alternative compared to 2045 without Project conditions and No Project Alternative compared to Existing Conditions 2021. As discussed in Section 0, CEQA Thresholds of Significance, regional emissions impacts would be evaluated based on the net change in emissions between project alternatives in Horizon Year 2045 and 2045 without Project

conditions. The comparison for the No Project Alternative and Existing Conditions 2021 is presented for informational purposes only.

The No Project Alternative includes modifications to Metro Line 761. The modifications would include the construction and operation of additional bus stops for Metro Line 761 to facilitate route changes under the No Project Alternative. Operational emissions associated with the No Project Alternative would include direct emissions from highway traffic without implementation of the Project. The additional bus stops related to Metro Line 761 would not be a source of emissions when operational. Regional highway traffic emissions would be the same under the No Project Alternative as they would be under the 2045 without Project conditions because project alternatives would not be implemented. Because the No Project Alternative highway traffic emissions would be the same as 2045 without Project conditions (projected future conditions baseline), there would be no increase in criteria pollutant emissions relative to the baseline on the project level under the No Project Alternative. Therefore, criteria pollutant emissions under the No Project Alternative would not result in a net increase of criteria pollutant emissions and impacts would be less than significant.

SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in nonattainment under an applicable federal or state ambient air quality standard. Because the No Project Alternative net operational emissions would not result in an increase in criteria pollutant emissions compared to 2045 without Project conditions, then the No Project Alternative would not exceed the applicable SCAQMD's regional operational significance thresholds and the No Project Alternative operational emissions would not be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, the No Project Alternative's contribution of pollutant emissions would not result in appreciable human health impacts on a regional scale. Overall, the No Project Alternative operational emissions would not be cumulatively considerable and impacts would be less than significant.

As discussed previously, the comparison for the No Project Alternative and Existing Conditions 2021 is presented for informational purposes only. Criteria pollutant emissions from the No Project Alternative represent a future condition from existing conditions where the changes are solely due to growth in regional traffic and planned service changes. No new track installation, stations, or MSF would be constructed nor operated under the No Project Alternative. The No Project Alternative would only include installation of the additional bus stops to facilitate the expanded service of Metro Line 761. The additional bus stops would not generate criteria pollutant emissions when operational.

Table 3.2-12 compares criteria pollutant emissions from the No Project Alternative to existing conditions. As shown in Table 3.2-12, the No Project Alternative would exceed SCAQMD's regional significance thresholds for $PM_{10}$ and $PM_{2.5}$ when compared to existing conditions. All other criteria pollutants would be below regional significance thresholds and would even result in a net decrease in peak daily emissions of VOCs, $NO_X$, CO, and $SO_2$. The significant increase in particulate matter would be attributable to background growth in regional VMT from 2021 to 2045 and particulate matter fugitive dust emission factors. Fugitive dust emissions factors include dust from tire wear, brake wear, and resuspended road dust. These processes comprise greater than 90 percent of the total per-mile emissions factors for $PM_{10}$ and $PM_{2.5}$. Fugitive dust emission factors for tire wear, brake wear, and paved roads would remain relatively constant over this time frame, whereas exhaust emission factors would

tend to decrease in future years due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles. Consequently, the No Project Alternative would result in a net increase in $PM_{10}$ and $PM_{2.5}$ emissions that exceed SCAQMD regional significance thresholds when compared to the Baseline Year 2021 condition. This increase is attributable to the overall growth in VMT across the region and is not a direct result of the No Project Alternative itself. When the 2045 No Project condition that includes Metro Line 761 improvements is compared to the 2045 No Project that would not include Metro Line 761, there would be no perceptible change in any criteria pollutant emission.

**Table 3.2-12. No Project Alternative: Peak Daily Regional Operational Criteria Pollutant Emissions Compared to the Existing Conditions (Baseline Year 2021)**

| Project Alternative | Daily VMT[a] | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|---|
| | | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| Existing Conditions (2021) | 456,869,300 | 27,490 | 222,016 | 1,219,501 | 3,920 | 329,216 | 86,051 |
| No Project (2045) W/O | 568,557,200 | 8,987 | 88,927 | 623,264 | 3,487 | 408,902 | 105,487 |
| No Project (2045) W/P | 568,557,200 | 8,987 | 88,927 | 623,264 | 3,487 | 408,902 | 105,487 |
| **Net Change (2045 W/P – 2021)** | **111,687,900** | **-18,503** | **-133,089** | **-596,237** | **-433** | **79,686** | **19,436** |
| SCAQMD Regional Significance Thresholds | | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | | No | No | No | No | **Yes** | **Yes** |
| **Net Change (2045 W/P – W/O)** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| SCAQMD Regional Significance Thresholds | | 55 | 55 | 550 | 150 | **150** | **55** |
| Threshold Exceeded? | | No | No | No | No | No | No |

Source: HTA, 2024

[a]VMT data provided from *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) used 2019 as the base year for the VMT analysis because it is the most recent year for which Metro's CBM18B Transportation Analysis Model has been calibrated.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
ROG = reactive organic gases
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
W/O = 2045 without Metro Line 761 improvements
W/P = 2045 with Metro Line 761 improvements

*Construction Impacts*

Under the No Project Alternative, construction of the project alternatives would not occur. As a result, construction-related emissions of criteria pollutants, such as $NO_X$, $PM_{10}$ and $PM_{2.5}$ associated with off-road equipment, truck hauling, and construction activities would be avoided. This avoidance would eliminate the project's contribution to a cumulatively considerable net increase of criteria pollutants for which the region is in non-attainment under applicable federal and state ambient air quality standards. Because the project alternatives would not be constructed, the No Project Alternative would result in no project-specific emissions from construction activities. Therefore, there would be no contribution to a cumulative net increase of non-attainment pollutants under the No Project Alternative, and impacts would be less than significant.

***Alternative 1***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Operations of Alternative 1 would generate long-term regional criteria pollutant emissions from mobile sources including regional VMT and employees traveling to and from the monorail MSF Base Design or MSF Design Option 1 and Electric Bus MSF (e-Bus MSF), area sources related to landscape equipment, consumer products, and reapplication of architectural coatings, and maintenance testing for emergency generators. Operation of the electric bus connection to UCLA would not directly generate any regional criteria pollutant emissions. As described in Chapter 2, Project Description, the monorail MSF Base Design and MSF Design Option 1 would have the same facilities; therefore, operational emissions for MSF Design Option 1 would be equivalent to the criteria pollutant emissions modeled for the MSF Base Design. Regardless of which MSF is selected in future final design decisions, the analysis adequately accounted for emissions from either of these MSFs. For Alternative 1, its precast concrete facility would be off-site in Antelope Valley or Riverside County. Criteria pollutant emissions related to hauling precast components from the precast facility to the construction worksites were included in the emissions analysis.

The Alternative 1 peak daily criteria pollutant emissions were estimated for two scenarios: Alternative 1 compared to 2045 without Project conditions in Horizon Year 2045, and Alternative 1 compared to existing conditions in 2021. As discussed in Section 0, air quality impacts were evaluated based on the net change in emissions between project alternatives in Horizon Year 2045 and 2045 without Project conditions in Horizon Year 2045. The comparison for Alternative 1 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are provided in the *Sepulveda Transit Corridor Project Air Quality Technical Report* (Metro, 2025a).

Table 3.2-13 summarizes the Alternative 1 peak daily criteria pollutant emissions for each source category compared to 2045 without Project conditions. As stated in the *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b), implementation of Alternative 1 would reduce regional daily VMT by 341,800 miles per day compared to 2045 without Project conditions. As shown in Table 3.2-13, daily emissions associated with operation of Alternative 1 would not exceed SCAQMD's regional operational significance thresholds for any pollutant; rather, Alternative 1 would result in an environmental benefit by resulting in a net decrease of daily criteria pollutant emissions for all pollutants except VOCs. As shown in the table, daily VOC emissions would marginally increase relative to 2045 without Project conditions, but the magnitude of that increase would remain substantially below the applicable SCAQMD regional screening threshold for mass daily emissions.

**Table 3.2-13. Alternative 1: Peak Daily Regional Operational Criteria Pollutant Emissions Compared to 2045 Without Project Conditions**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 1* | | | | | | |
| Area – MSF and e-Bus MSF[b] | 4 | <0.1 | 5 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 4 | <1 | 24 | <0.1 | <0.1 | <0.1 |
| Mobile – Regional VMT Analysis | 8,982 | 88,874 | 622,889 | 3,485 | 408,656 | 105,423 |
| Mobile – Employee Travel | 1 | 3 | 16 | <0.1 | 9 | 2 |
| Emergency Generators[d] | 4 | 17 | 10 | <0.1 | <1 | <1 |
| **Alternative 1 Peak Daily Emissions[e]** | **8,995** | **88,894** | **622,945** | **3,485** | **408,666** | **105,426** |
| *2045 without Project Conditions* | | | | | | |
| Mobile – 2045 VMT Analysis Emissions | 8,987 | 88,927 | 623,264 | 3,487 | 408,902 | 105,487 |
| **Net Change in Emissions** | **8** | **-33** | **-319** | **-2** | **-237** | **-61** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF and e-Bus maintenance and storage facility.
[c]Total on-site emissions from all stations.
[d]Emergency generator located at the MSF.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
ROG = reactive organic gases
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled

SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 1 net operational emissions would not exceed the applicable SCAQMD's regional operational significance thresholds, Alternative 1 operational emissions would not be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 1's contribution of pollutant emissions is not expected to result in appreciable human health impacts on a regional scale.

As discussed previously, the comparison for Alternative 1 and Existing Conditions 2021 is presented for informational purposes only. Table 3.2-14 summarizes the Alternative 1 peak daily criteria pollutant emissions for each source category compared to Existing Conditions 2021. As shown in Table 3.2-14, Alternative 1 would exceed SCAQMD's regional significance thresholds for $PM_{10}$ and $PM_{2.5}$. All other

criteria pollutants would be below regional significance thresholds and would even result in a net decrease in peak daily emissions of VOCs, $NO_X$, CO, and $SO_2$. The significant increase in particulate matter is attributable to background growth in regional VMT that would occur regardless of Alternative 1 from 2021 to 2045 and particulate matter fugitive dust emission factors. Fugitive dust emissions factors include dust from tire wear, brake wear, and resuspended road dust. These processes comprise greater than 90 percent of the total per-mile emissions factors for $PM_{10}$ and $PM_{2.5}$. Fugitive dust emission factors for tire wear, brake wear, and paved roads remain relatively constant over this time frame, whereas exhaust emission factors tend to decrease in future years due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles. Consequently, while Alternative 1 would result in a net increase in $PM_{10}$ and $PM_{2.5}$ emissions, this increase is attributable to the overall growth in VMT across the region and is not a direct result of Alternative 1 itself. The ability of Alternative 1 to reduce vehicle emissions would not extend to fugitive dust, which is the primary source of the increase in particulate matter emissions.

**Table 3.2-14. Alternative 1 (Horizon Year 2045): Peak Daily Regional Operational Criteria Pollutant Emissions Compared to Existing Conditions (Baseline Year 2021)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 1* | | | | | | |
| Area – MSF and e-Bus MSF[b] | 4 | <0.1 | 5 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 4 | <1 | 24 | <0.1 | <0.1 | <0.1 |
| Mobile – Regional VMT Analysis | 8,982 | 88,874 | 622,889 | 3,485 | 408,656 | 105,423 |
| Mobile – Employee Travel | 1 | 3 | 16 | <0.1 | 9 | 2 |
| Emergency Generators[d] | 4 | 17 | 10 | <0.1 | <1 | <1 |
| **Alternative 1 Peak Daily Emissions[e]** | **8,995** | **88,894** | **622,945** | **3,485** | **408,666** | **105,426** |
| *Existing Conditions* | | | | | | |
| Mobile – 2021 VMT Analysis Emissions | 27,490 | 222,016 | 1,219,501 | 3,920 | 329,216 | 86,051 |
| **Net Change in Emissions** | **-18,495** | **-133,122** | **-596,556** | **-435** | **79,450** | **19,375** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | **Yes** | **Yes** |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF and e-Bus MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generator located at MSF.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
ROG = reactive organic gases
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

*Construction Impacts*

Alternative 1 construction activities would generate criteria pollutant emissions from off-road equipment, mobile sources including workers, vendor trucks, and haul trucks traveling to and from construction sites, demolition, soil handling activities, paving, application of architectural coatings, and operation of temporary concrete batch plants. These emissions sources would be related to constructing the monorail aerial alignment, stations, TPSSs, monorail MSF Base Design or Design Option 1, and Electric Bus MSF. The Alternative 1 alignment would be completely aerial and would not require use of a TBM.

Construction emissions would vary substantially from day to day, depending on the level of activity and the specific type of construction activity. The peak daily construction emissions for Alternative 1 were estimated for each construction year. Based on the construction schedule for Alternative 1, construction phases for components could potentially overlap; therefore, the estimates of peak daily emissions included these potential overlaps by combining the relevant construction phase daily emissions. The peak daily emissions are predicted values for the worst-case day and do not represent the emissions that would occur for every day of construction. Table 3.2-15 summarizes the peak daily regional emissions for each construction year.

**Table 3.2-15. Alternative 1: Unmitigated Peak Daily Regional Construction Criteria Pollutant Emissions**

| Construction Year | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| 2029 | 12 | 86 | 319 | <1 | 16 | 5 |
| 2030 | 12 | 95 | 305 | <1 | 31 | 10 |
| 2031 | 14 | 112 | 419 | <1 | 40 | 14 |
| 2032 | 32 | 202 | 776 | 1 | 41 | 14 |
| 2033 | 25 | 157 | 679 | 1 | 48 | 17 |
| 2034 | 20 | 96 | 425 | <1 | 17 | 6 |
| 2035 | 13 | 71 | 308 | <1 | 11 | 4 |
| 2036 | <1 | 5 | 21 | <0.1 | <1 | <1 |
| **Peak Daily Emissions** | **32** | **202** | **776** | **1** | **48** | **17** |
| SCAQMD Regional Significance Thresholds | 75 | 100 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | **Yes** | **Yes** | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VOC = volatile organic compounds

As shown in Table 3.2-15, Alternative 1 construction emissions would exceed the SCAQMD regional significance thresholds for $NO_X$ and CO emissions. SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 1 construction emissions would exceed the applicable SCAQMD's regional construction significance thresholds for $NO_X$ and CO, Alternative 1 construction emissions would be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 1's contribution of pollutant emissions during short-term construction activities may result in appreciable human health impacts on a regional scale.

$NO_x$ emissions can have various regional health and environmental impacts. Exposure to $NO_x$ may cause eye and respiratory tract irritation and contribute to broader environmental issues such as acid rain and nitrate contamination in stormwater. Additionally, $NO_x$ is a precursor to $O_3$ formation, which poses significant health and ecological risks. High concentrations of $O_3$ can irritate the lungs, and prolonged exposure may lead to damaged lung tissue, increased cancer risk, and harm to plant materials. Long-term $O_3$ exposure can damage vegetation, reduce crop productivity, and disrupt ecosystems.

CO emissions primarily affect human health by reducing the blood's ability to carry oxygen, leading to symptoms such as headaches, dizziness, confusion and, in severe cases, loss of consciousness or death. These health effects are more pronounced in individuals with pre-existing cardiovascular conditions, because CO exposure can exacerbate symptoms like chest pain or arrhythmias.

As discussed in Section 3.2.2.1, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 1 conservatively assumed all equipment would be diesel powered. The Metro *Green Construction Policy* contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

Mitigation measures (MM) AQ-1, MM AQ-2, and MM AQ-3 prescribed in Section 3.2.6 would reduce criteria pollutant emissions during construction, but mitigation measures would not reduce Alternative 1 $NO_X$ and CO emissions below SCAQMD significance thresholds; therefore, Alternative 1 construction emissions would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard, and impacts would be significant and unavoidable.

***Alternative 3***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Operations of Alternative 3 would generate long-term regional criteria pollutant emissions from mobile sources including regional VMT and employees traveling to and from the MSF, area sources related to landscape equipment, consumer products, and reapplication of architectural coatings, and maintenance testing for emergency generators. As described in Chapter 2, Alternatives Description, the MSF Base Design and MSF Design Option 1 would have the same facilities; therefore, operational emissions for MSF Design Option 1 would be equivalent to the criteria pollutant emissions modeled for the MSF Base Design. Regardless of which MSF is selected in future final design decisions, the analysis adequately accounted for emissions from either of these MSFs. For Alternative 3, its precast concrete facility would be off-site in Antelope Valley or Riverside County. Criteria pollutant emissions related to hauling precast components from the precast facility to the construction worksites were included in the emissions analysis.

The Alternative 3 peak daily criteria pollutant emissions were estimated for two scenarios: Alternative 3 compared to 2045 without Project conditions and Alternative 3 compared to Existing Conditions 2021. As discussed in Section 3.2.2, air quality impacts would be evaluated based on the net change in emissions between project alternatives in Horizon Year 2045 and 2045 without Project conditions in Horizon Year 2045. The comparison for Alternative 3 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are provided in the *Sepulveda Transit Corridor Project Air Quality Technical Report* (Metro, 2025a).

Table 3.2-16 summarizes the Alternative 3 peak daily criteria pollutant emissions for each source category compared to 2045 without Project conditions. As stated in the *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b), implementation of Alternative 3 would reduce regional daily VMT by 451,100 miles per day compared to 2045 without Project conditions. As shown in Table 3.2-16, Alternative 3 would not exceed SCAQMD's regional operational significance thresholds for any pollutant, rather it would result in an environmental benefit by resulting in a net decrease of daily criteria pollutant emissions for all pollutants except VOCs. As shown in Table 3.2-16, daily VOC emissions would marginally increase relative to 2045 without Project conditions, but the magnitude of that increase would remain substantially below the applicable SCAQMD regional screening threshold for mass daily emissions.

**Table 3.2-16. Alternative 3: Peak Daily Regional Operational Criteria Pollutant Emissions Compared to 2045 Without Project Conditions (Horizon Year 2045)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 3* | | | | | | |
| Area – MSF[b] | 3 | <0.1 | 4 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 7 | <1 | 39 | <0.1 | <0.1 | <0.1 |
| Mobile – Regional VMT Analysis | 8,980 | 88,857 | 622,769 | 3,484 | 408,578 | 105,403 |
| Mobile – Employee Travel | <1 | 2 | 14 | <0.1 | 7 | 2 |
| Emergency Generators[d] | 12 | 52 | 29 | <0.1 | 2 | 2 |
| **Alternative 3 Peak Daily Emissions[e]** | **9,002** | **88,911** | **622,855** | **3,484** | **408,587** | **105,407** |
| *2045 without Project Conditions* | | | | | | |
| Mobile – 2045 VMT Analysis Emissions | 8,987 | 88,927 | 623,264 | 3,487 | 408,902 | 105,487 |
| **Net Change in Emissions** | **15** | **-16** | **-409** | **-3** | **-315** | **-80** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generators located at the MSF and underground stations.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 3 net operational emissions would not exceed the applicable SCAQMD's regional operational significance thresholds, Alternative 3 operational emissions would not be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 3's contribution of pollutant emissions is not expected to result in appreciable human health impacts on a regional scale.

As discussed previously, the comparison for Alternative 3 and Existing Conditions 2021 is presented for informational purposes only. Table 3.2-17 summarizes the Alternative 3 peak daily criteria pollutant emissions for each source category compared to Existing Conditions 2021. As shown in Table 3.2-17, Alternative 3 would exceed SCAQMD's regional significance thresholds for $PM_{10}$ and $PM_{2.5}$. All other

criteria pollutants would be below regional significance thresholds and would even result in a net decrease in peak daily emissions of VOCs, $NO_X$, CO, and $SO_2$. The significant increase in particulate matter would be attributable to background growth in regional VMT from 2021 to 2045 and particulate matter fugitive dust emission factors. Fugitive dust emissions factors include dust from tire wear, brake wear, and resuspended road dust. These processes comprise greater than 90 percent of the total per-mile emissions factors for $PM_{10}$ and $PM_{2.5}$. Fugitive dust emission factors for tire wear, brake wear, and paved roads would remain relatively constant over this time frame, whereas exhaust emission factors would tend to decrease in future years due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles. Consequently, while Alternative 3 would result in a net increase in $PM_{10}$ and $PM_{2.5}$ emissions, this increase is attributable to the overall growth in VMT across the region and is not a direct result of Alternative 3 itself. The ability of Alternative 3 to reduce vehicle emissions would not extend to fugitive dust, which is the primary source of the increase in particulate matter emissions.

**Table 3.2-17. Alternative 3 (Horizon Year 2045): Peak Daily Regional Operational Criteria Pollutant Emissions Compared to Existing Conditions (Baseline Year 2021)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 3* | | | | | | |
| Area – MSF[b] | 3 | <0.1 | 4 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 7 | <1 | 39 | <0.1 | <0.1 | <0.1 |
| Mobile – Regional VMT Analysis | 8,980 | 88,857 | 622,769 | 3,484 | 408,578 | 105,403 |
| Mobile – Employee Travel | <1 | 2 | 14 | <0.1 | 7 | 2 |
| Emergency Generators[d] | 12 | 52 | 29 | <0.1 | 2 | 2 |
| **Alternative 3 Peak Daily Emissions[e]** | **9,002** | **88,911** | **622,855** | **3,484** | **408,587** | **105,407** |
| *Existing Conditions* | | | | | | |
| Mobile – 2021 VMT Analysis Emissions | 27,490 | 222,016 | 1,219,501 | 3,920 | 329,216 | 86,051 |
| **Net Change in Emissions** | **-18,489** | **-133,105** | **-596,646** | **-436** | **79,371** | **19,356** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | **Yes** | **Yes** |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generators located at the MSF and underground stations.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

*Construction Impacts*

Alternative 3 construction activities would generate criteria pollutant emissions from off-road equipment, mobile sources including workers, vendor trucks, and haul trucks traveling to and from construction sites, demolition, soil handling activities, paving, application of architectural coatings, and operation of temporary concrete batch plants. These emissions sources would be related to constructing the monorail aerial alignment, underground tunneling, stations, TPSSs, and MSF.

Construction emissions would vary substantially from day to day, depending on the level of activity and the specific type of construction activity. The peak daily construction emissions for Alternative 3 were estimated for each construction year. Based on the construction schedule for Alternative 3, construction phases for components could potentially overlap; therefore, the estimates of peak daily emissions included these potential overlaps by combining the relevant construction phase daily emissions. The peak daily emissions are predicted values for the worst-case day and do not represent the emissions that would occur for every day of construction. Table 3.2-18 summarizes the peak daily regional emissions for each construction year.

**Table 3.2-18. Alternative 3: Unmitigated Peak Daily Regional Construction Criteria Pollutant Emissions**

| Construction Year | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| 2029 | 13 | 95 | 346 | <1 | 17 | 5 |
| 2030 | 14 | 117 | 375 | <1 | 34 | 11 |
| 2031 | 16 | 129 | 474 | <1 | 42 | 15 |
| 2032 | 33 | 243 | 795 | 2 | 60 | 16 |
| 2033 | 23 | 203 | 624 | 2 | 64 | 19 |
| 2034 | 21 | 155 | 428 | 1 | 41 | 11 |
| 2035 | 10 | 103 | 295 | <1 | 26 | 7 |
| 2036 | 5 | 33 | 138 | <1 | 5 | 2 |
| 2037 | 3 | 17 | 73 | <1 | 2 | <1 |
| **Peak Daily Emissions** | **33** | **243** | **795** | **2** | **64** | **19** |
| SCAQMD Regional Significance Thresholds | 75 | 100 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | **Yes** | **Yes** | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VOC = volatile organic compounds

As shown in Table 3.2-18, Alternative 3 construction emissions would exceed the SCAQMD regional significance thresholds for $NO_X$ and CO emissions. SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 3

construction emissions would exceed the applicable SCAQMD's regional construction significance thresholds for $NO_X$ and CO, Alternative 3 construction emissions would be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 3's contribution of pollutant emissions during short-term construction activities may result in appreciable human health impacts on a regional scale.

$NO_x$ emissions can have various regional health and environmental impacts. Exposure to $NO_x$ may cause eye and respiratory tract irritation and contribute to broader environmental issues such as acid rain and nitrate contamination in stormwater. Additionally, $NO_x$ is a precursor to $O_3$ formation, which poses significant health and ecological risks. High concentrations of $O_3$ can irritate the lungs, and prolonged exposure may lead to damaged lung tissue, increased cancer risk, and harm to plant materials. Long-term $O_3$ exposure can damage vegetation, reduce crop productivity, and disrupt ecosystems.

CO emissions primarily affect human health by reducing the blood's ability to carry oxygen, leading to symptoms such as headaches, dizziness, confusion and, in severe cases, loss of consciousness or death. These health effects are more pronounced in individuals with pre-existing cardiovascular conditions, because CO exposure can exacerbate symptoms like chest pain or arrhythmias.

As discussed in Section 3.2.2.1, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 3 conservatively assumed all equipment would be diesel powered. The Metro *Green Construction Policy* contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

MM AQ-1, MM AQ-2, and MM AQ-3 prescribed in Section 3.2.6 would reduce criteria pollutant emissions during construction, but mitigation measures would not reduce Alternative 3 $NO_X$ and CO emissions below SCAQMD significance thresholds; therefore, Alternative 3 construction emissions would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard and impacts would be significant and unavoidable.

***Alternative 4***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Operations of Alternative 4 would generate long-term regional criteria pollutant emissions from mobile sources, including regional VMT and employees traveling to and from the MSF, area sources related to landscape equipment, consumer products, and reapplication of architectural coatings, and maintenance testing for emergency generators.

The Alternative 4 peak daily criteria pollutant emissions were estimated for two scenarios: Alternative 4 compared to 2045 without Project conditions and Alternative 4 compared to Existing Conditions 2021. As discussed in Section 0, air quality impacts would be evaluated based on the net change in emissions

between Alternative 4 in Horizon Year 2045 and 2045 without Project conditions in Horizon Year 2045. The comparison for Alternative 4 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are provided in the *Sepulveda Transit Corridor Project Air Quality Technical Report* (Metro, 2025a).

Table 3.2-19 summarizes the Alternative 4 peak daily criteria pollutant emissions for each source category compared to 2045 without Project conditions. As stated in the *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b), implementation of Alternative 4 would reduce regional daily VMT by 767,800 miles per day compared to 2045 without Project conditions. As shown in Table 3.2-19, Alternative 4 would not exceed SCAQMD's regional operational significance thresholds for any pollutant, rather it would result in an environmental benefit by resulting in a net decrease of daily criteria pollutant emissions for all pollutants except VOCs. As shown in Table 3.2-19, daily VOC emissions would marginally increase relative to 2045 without Project conditions, but the magnitude of that increase would remain substantially below the applicable SCAQMD regional screening threshold for mass daily emissions.

**Table 3.2-19. Alternative 4: Peak Daily Regional Operational Criteria Pollutant Emissions Compared to 2045 without Project Conditions (Horizon Year 2045)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 4* | | | | | | |
| Area – MSF[b] | 8 | <0.1 | 12 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 7 | <1 | 41 | <0.1 | <0.1 | <0.1 |
| Mobile – Regional VMT Analysis | 8,975 | 88,807 | 622,422 | 3,482 | 408,350 | 105,344 |
| Mobile – Employee Travel | <1 | 1 | 7 | <0.1 | 4 | 1 |
| Emergency Generators[d] | 4 | 17 | 10 | <0.1 | <1 | <1 |
| **Alternative 4 Peak Daily Emissions[e]** | **8,994** | **88,826** | **622,492** | **3,482** | **408,355** | **105,346** |
| *2045 without Project Conditions* | | | | | | |
| Mobile – 2045 VMT Analysis Emissions | 8,987 | 88,927 | 623,264 | 3,487 | 408,902 | 105,487 |
| **Net Change in Emissions** | **7** | **-101** | **-772** | **-5** | **-548** | **-141** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generator located at MSF.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 4 net operational emissions would not exceed the applicable SCAQMD's regional operational significance thresholds, Alternative 4 operational emissions would not be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 4's contribution of pollutant emissions is not expected to result in appreciable human health impacts on a regional scale.

As discussed previously, the comparison for Alternative 4 and Existing Conditions 2021 is presented for informational purposes only. Table 3.2-20 summarizes the Alternative 4 peak daily criteria pollutant emissions for each source category compared to Existing Conditions 2021. As shown in Table 3.2-20, Alternative 4 would exceed SCAQMD's regional significance thresholds for $PM_{10}$ and $PM_{2.5}$. All other criteria pollutants would be below regional significance thresholds and would even result in a net decrease in peak daily emissions of VOCs, $NO_X$, CO, and $SO_2$. The significant increase in particulate matter would be attributable to background growth in regional VMT from 2021 to 2045 and particulate matter fugitive dust emission factors. Fugitive dust emissions factors include dust from tire wear, brake wear, and resuspended road dust. These processes comprise greater than 90 percent of the total per-mile emissions factors for $PM_{10}$ and $PM_{2.5}$. Fugitive dust emission factors for tire wear, brake wear, and paved roads would remain relatively constant over this time frame, whereas exhaust emission factors would tend to decrease in future years due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles. Consequently, while Alternative 4 would result in a net increase in $PM_{10}$ and $PM_{2.5}$ emissions, this increase is attributable to the overall growth in VMT across the region and is not a direct result of Alternative 4. The ability of Alternative 4 to reduce vehicle emissions would not extend to fugitive dust, which is the primary source of the increase in particulate matter emissions.

**Table 3.2-20. Alternative 4 (Horizon Year 2045): Peak Daily Regional Operational Criteria Pollutant Emissions Compared to Existing Conditions (Baseline Year 2021)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 4* | | | | | | |
| Area – MSF[b] | 8 | <0.1 | 12 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 7 | <1 | 41 | <0.1 | <0.1 | <0.1 |
| Mobile – Regional VMT Analysis | 8,975 | 88,807 | 622,422 | 3,482 | 408,350 | 105,344 |
| Mobile – Employee Travel | <1 | 1 | 7 | <0.1 | 4 | 1 |
| Emergency Generators[d] | 4 | 17 | 10 | <0.1 | <1 | <1 |
| **Alternative 4 Peak Daily Emissions[e]** | **8,994** | **88,826** | **622,492** | **3,482** | **408,355** | **105,346** |
| *Existing Conditions* | | | | | | |
| Mobile – 2021 VMT Analysis Emissions | 27,490 | 222,016 | 1,219,501 | 3,920 | 329,216 | 86,051 |
| **Net Change in Emissions** | **-18,496** | **-133,190** | **-597,009** | **-438** | **79,139** | **19,295** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | **Yes** | **Yes** |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generator located at the MSF.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

*Construction Impacts*

Alternative 4 construction activities would generate criteria pollutant emissions from off-road equipment, mobile sources including workers, vendor trucks, and haul trucks traveling to and from construction sites, demolition, soil handling activities, paving, application of architectural coatings, and operation of temporary concrete batch plants. These emissions sources would be related to constructing the heavy rail transit (HRT) system alignment, TPSSs, stations, and the MSF.

Construction emissions would vary substantially from day to day, depending on the level of activity and the specific type of construction activity. The peak daily construction emissions for Alternative 4 were estimated for each construction year. Based on the construction schedule for Alternative 4, construction phases for components could potentially overlap; therefore, the estimates of peak daily emissions included these potential overlaps by combining the relevant construction phase daily emissions. The peak daily emissions are predicted values for the worst-case day and do not represent the emissions that would occur for every day of construction. Table 3.2-21 summarizes the peak daily regional emissions for each construction year.

**Table 3.2-21. Alternative 4: Unmitigated Peak Daily Regional Construction Criteria Pollutant Emissions**

| Construction Year | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| 2027 | 2 | 21 | 57 | <0.1 | 2 | <1 |
| 2028 | 12 | 113 | 331 | <1 | 29 | 7 |
| 2029 | 20 | 246 | 601 | 2 | 72 | 18 |
| 2030 | 26 | 339 | 747 | 3 | 101 | 25 |
| 2031 | 29 | 340 | 788 | 2 | 89 | 22 |
| 2032 | 38 | 359 | 900 | 2 | 100 | 28 |
| 2033 | 33 | 247 | 716 | 1 | 33 | 10 |
| 2034 | 24 | 195 | 442 | <1 | 22 | 7 |
| 2035 | 19 | 119 | 294 | <1 | 15 | 5 |
| 2036 | 1 | 14 | 41 | <0.1 | 2 | <1 |
| 2037 | 1 | 14 | 41 | <0.1 | 2 | <1 |
| **Peak Daily Emissions** | **38** | **359** | **900** | **3** | **101** | **28** |
| SCAQMD Regional Significance Thresholds | 75 | 100 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | **Yes** | **Yes** | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VOC = volatile organic compounds

As shown in Table 3.2-21, Alternative 4 construction emissions would exceed the SCAQMD regional significance thresholds for $NO_X$ and CO emissions. SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 4 construction emissions would exceed the applicable SCAQMD's regional construction significance thresholds for $NO_X$ and CO, Alternative 4 construction emissions would be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 4's contribution of pollutant emissions during short-term construction activities may result in appreciable human health impacts on a regional scale.

$NO_x$ emissions can have various regional health and environmental impacts. Exposure to $NO_x$ may cause eye and respiratory tract irritation and contribute to broader environmental issues such as acid rain and nitrate contamination in stormwater. Additionally, $NO_x$ is a precursor to $O_3$ formation, which poses significant health and ecological risks. High concentrations of $O_3$ can irritate the lungs, and prolonged exposure may lead to damaged lung tissue, increased cancer risk, and harm to plant materials. Long-term $O_3$ exposure can damage vegetation, reduce crop productivity, and disrupt ecosystems.

CO emissions primarily affect human health by reducing the blood's ability to carry oxygen, leading to symptoms such as headaches, dizziness, confusion and, in severe cases, loss of consciousness or death. These health effects are more pronounced in individuals with pre-existing cardiovascular conditions, because CO exposure can exacerbate symptoms like chest pain or arrhythmias.

As discussed in Section 3.2.2.1, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 4 conservatively assumed all equipment would be diesel powered. The Metro *Green Construction Policy* contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

MM AQ-1, MM AQ-2, and MM AQ-3 prescribed in Section 3.2.6 would reduce criteria pollutant emissions during construction, but mitigation measures would not reduce Alternative 4 $NO_X$ and CO emissions below SCAQMD significance thresholds; therefore, Alternative 4 construction emissions would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard, and impacts would be significant and unavoidable.

***Alternative 5***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Operations of Alternative 5 would generate long-term regional criteria pollutant emissions from mobile sources, including regional VMT and employees traveling to and from the MSF, area sources related to landscape equipment, consumer products, and reapplication of architectural coatings, and maintenance testing for emergency generators.

The Alternative 5 peak daily criteria pollutant emissions were estimated for two scenarios: Alternative 5 compared to 2045 without Project conditions and Alternative 5 compared to Existing Conditions 2021. As discussed in Section 0, air quality impacts were evaluated based on the net change in emissions between project alternatives in Horizon Year 2045 and 2045 without Project conditions in Horizon Year 2045. The comparison for Alternative 5 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are provided in the *Sepulveda Transit Corridor Project Air Quality Technical Report* (Metro, 2025a).

Table 3.2-22 summarizes the Alternative 5 peak daily criteria pollutant emissions for each source category compared to 2045 without Project conditions. As stated in the *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b), implementation of Alternative 5 would reduce regional daily VMT by 775,100 miles per day compared to 2045 without Project conditions. As shown in Table 3.2-22, Alternative 5 would not exceed SCAQMD's regional operational significance thresholds for any pollutant, rather it would result in an environmental benefit by resulting in a net decrease of daily criteria pollutant emissions for all pollutants except VOCs. As shown in Table 3.2-22, daily VOC emissions would marginally increase relative to 2045 without Project conditions, but the magnitude of that

increase would remain substantially below the applicable SCAQMD regional screening threshold for mass daily emissions.

**Table 3.2-22. Alternative 5: Peak Daily Regional Operational Criteria Pollutant Emissions Compared to 2045 Without Project Conditions (Horizon Year 2045)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 5* | | | | | | |
| Area – MSF[b] | 8 | <0.1 | 12 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 9 | <1 | 51 | <0.1 | <0.1 | <0.1 |
| Mobile – Regional VMT Analysis | 8,975 | 88,806 | 622,414 | 3,482 | 408,345 | 105,343 |
| Mobile – Employee Travel | <1 | 1 | 7 | <0.1 | 4 | 1 |
| Emergency Generators[d] | 4 | 17 | 10 | <0.1 | <1 | <1 |
| **Alternative 5 Peak Daily Emissions[e]** | **8,996** | **88,825** | **622,495** | **3,482** | **408,349** | **105,345** |
| *2045 without Project Conditions* | | | | | | |
| Mobile – 2045 VMT Analysis Emissions | 8,987 | 88,927 | 623,264 | 3,487 | 408,902 | 105,487 |
| **Net Change in Emissions** | **9** | **-102** | **-769** | **-5** | **-553** | **-142** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generator located at the MSF.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 5 net operational emissions would not exceed the applicable SCAQMD's regional operational significance thresholds, Alternative 5 operational emissions would not be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 5's contribution of pollutant emissions is not expected to result in appreciable human health impacts on a regional scale.

As discussed previously, the comparison for Alternative 5 and Existing Conditions 2021 is presented for informational purposes only. Table 3.2-23 summarizes the Alternative 5 peak daily criteria pollutant

emissions for each source category compared to Existing Conditions 2021. As shown in Table 3.2-23, Alternative 5 would exceed SCAQMD's regional significance thresholds for $PM_{10}$ and $PM_{2.5}$. All other criteria pollutants would be below regional significance thresholds and would even result in a net decrease in peak daily emissions of ROG, $NO_X$, CO, and $SO_2$. The significant increase in particulate matter would be attributable to background growth in regional VMT from 2021 to 2045 and particulate matter fugitive dust emission factors. Fugitive dust emissions factors include dust from tire wear, brake wear, and resuspended road dust. These processes comprise greater than 90 percent of the total per-mile emissions factors for $PM_{10}$ and $PM_{2.5}$. Fugitive dust emission factors for tire wear, brake wear, and paved roads would remain relatively constant over this time frame, whereas exhaust emission factors would tend to decrease in future years due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles. Consequently, while Alternative 5 would result in a net increase in $PM_{10}$ and $PM_{2.5}$ emissions, this increase is attributable to the overall growth in VMT across the region and is not a direct result of Alternative 5 itself. The ability of Alternative 5 to reduce vehicle emissions would not extend to fugitive dust, which is the primary source of the increase in particulate matter emissions.

**Table 3.2-23. Alternative 5 (Horizon Year 2045): Peak Daily Regional Operational Criteria Pollutant Emissions Compared to Existing Conditions (Baseline Year 2021)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 5* | | | | | | |
| Area – MSF[b] | 8 | <0.1 | 12 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 9 | <1 | 51 | <0.1 | <0.1 | <0.1 |
| Mobile – Regional VMT Analysis | 8,975 | 88,806 | 622,414 | 3,482 | 408,345 | 105,343 |
| Mobile – Employee Travel | <1 | 1 | 7 | <0.1 | 4 | 1 |
| Emergency Generators[d] | 4 | 17 | 10 | <0.1 | <1 | <1 |
| **Alternative 5 Peak Daily Emissions[e]** | **8,996** | **88,825** | **622,495** | **3,482** | **408,349** | **105,345** |
| *Existing Conditions* | | | | | | |
| Mobile – 2021 VMT Analysis Emissions | 27,490 | 222,016 | 1,219,501 | 3,920 | 329,216 | 86,051 |
| **Net Change in Emissions** | **-18,495** | **-133,191** | **-597,006** | **-438** | **79,133** | **19,293** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | **Yes** | **Yes** |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generator located at the MSF.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

*Construction Impacts*

Alternative 5 construction activities would generate criteria pollutant emissions from off-road equipment, mobile sources including workers, vendor trucks, and haul trucks traveling to and from construction sites, demolition, soil handling activities, paving, application of architectural coatings, and operation of temporary concrete batch plants. These emissions sources would be related to constructing the HRT system alignment, TPSSs, stations, and the MSF.

Construction emissions would vary substantially from day to day, depending on the level of activity and the specific type of construction activity. The peak daily construction emissions for Alternative 5 were estimated for each construction year. Based on the construction schedule for Alternative 5, construction phases for components could potentially overlap; therefore, the estimates of peak daily emissions included these potential overlaps by combining the relevant construction phase daily emissions. The peak daily emissions are predicted values for the worst-case day and do not represent the emissions that would occur for every day of construction. Table 3.2-24 summarizes the peak daily regional emissions for each construction year.

**Table 3.2-24. Alternative 5: Unmitigated Peak Daily Regional Construction Criteria Pollutant Emissions**

| Construction Year | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| 2026 | 3 | 21 | 81 | <1 | 2 | <1 |
| 2027 | 7 | 68 | 215 | <1 | 11 | 3 |
| 2028 | 17 | 153 | 465 | 1 | 42 | 11 |
| 2029 | 25 | 339 | 707 | 3 | 102 | 25 |
| 2030 | 31 | 442 | 890 | 3 | 135 | 33 |
| 2031 | 32 | 424 | 872 | 3 | 120 | 29 |
| 2032 | 34 | 436 | 841 | 3 | 124 | 33 |
| 2033 | 30 | 289 | 545 | 2 | 69 | 17 |
| 2034 | 21 | 172 | 305 | <1 | 21 | 7 |
| 2035 | 16 | 101 | 191 | <1 | 13 | 4 |
| 2036 | 4 | 37 | 77 | <1 | 4 | 1 |
| 2037 | 1 | 14 | 41 | <0.1 | 2 | <1 |
| **Peak Daily Emissions** | **34** | **442** | **890** | **3** | **135** | **33** |
| SCAQMD Regional Significance Thresholds | 75 | 100 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | **Yes** | **Yes** | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VOC = volatile organic compounds

As shown in Table 3.2-24, Alternative 5 construction emissions would exceed the SCAQMD regional significance thresholds for $NO_X$ and CO emissions. SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the

SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 5 construction emissions would exceed the applicable SCAQMD's regional construction significance thresholds for $NO_X$ and CO, Alternative 5 construction emissions would be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 5's contribution of pollutant emissions during short-term construction activities may result in appreciable human health impacts on a regional scale.

$NO_x$ emissions can have various regional health and environmental impacts. Exposure to $NO_x$ may cause eye and respiratory tract irritation and contribute to broader environmental issues such as acid rain and nitrate contamination in stormwater. Additionally, $NO_x$ is a precursor to $O_3$ formation, which poses significant health and ecological risks. High concentrations of $O_3$ can irritate the lungs, and prolonged exposure may lead to damaged lung tissue, increased cancer risk, and harm to plant materials. Long-term $O_3$ exposure can damage vegetation, reduce crop productivity, and disrupt ecosystems.

CO emissions primarily affect human health by reducing the blood's ability to carry oxygen, leading to symptoms such as headaches, dizziness, confusion and, in severe cases, loss of consciousness or death. These health effects are more pronounced in individuals with pre-existing cardiovascular conditions, because CO exposure can exacerbate symptoms like chest pain or arrhythmias.

As discussed in Section 3.2.2.1, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 5 conservatively assumed all equipment would be diesel powered. The Metro *Green Construction Policy* contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

MM AQ-1, MM AQ-2, and MM AQ-3 prescribed in Section 3.2.6 would reduce criteria pollutant emissions during construction, but mitigation measures would not reduce Alternative 5 $NO_X$ and CO emissions below SCAQMD significance thresholds; therefore, Alternative 5 construction emissions would result in a cumulatively considerable net increase of criteria pollutants for which Alternative 5 region is non-attainment under an applicable federal or state ambient air quality standard and impacts would be significant and unavoidable.

***Alternative 6***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Operations of Alternative 6 would generate long-term regional criteria pollutant emissions from mobile sources — including regional VMT and employees traveling to and from the MSF — and area sources related to landscape equipment, consumer products, and reapplication of architectural coatings.

The Alternative 6 peak daily criteria pollutant emissions were estimated for two scenarios: Alternative 6 compared to 2045 without Project conditions and Alternative 6 compared to Existing Conditions 2021. As discussed in Section 0, air quality impacts were evaluated based on the net change in emissions between Alternative 6 in Horizon Year 2045 and 2045 without Project conditions in Horizon Year 2045. The comparison for Alternative 6 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are provided in the *Sepulveda Transit Corridor Project Air Quality Technical Report* (Metro, 2025a).

Table 3.2-25 summarizes the Alternative 6 peak daily criteria pollutant emissions for each source category compared to 2045 without Project conditions. As stated in the *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b), implementation of Alternative 6 would reduce regional daily VMT by 695,400 miles per day compared to 2045 without Project conditions. As shown in Table 3.2-25, Alternative 6 would not exceed SCAQMD's regional operational significance thresholds for any pollutant, rather it would result in an environmental benefit by resulting in a net decrease of daily criteria pollutant emissions for all pollutants except VOCs. As shown in Table 3.2-25, daily VOC emissions would marginally increase relative to 2045 without Project conditions, but the magnitude of that increase would remain substantially below the applicable SCAQMD regional screening threshold for mass daily emissions.

**Table 3.2-25. Alternative 6: Peak Daily Regional Operational Criteria Pollutant Emissions Compared to 2045 Without Project Conditions (Horizon Year 2045)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 6* | | | | | | |
| Area – MSF[b] | 4 | <0.1 | 5 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 18 | <1 | 109 | <0.1 | <1 | <1 |
| Mobile – Regional VMT Analysis | 8,976 | 88,818 | 622,502 | 3,483 | 408,402 | 105,358 |
| Mobile – Employee Travel | 1 | 3 | 20 | <0.1 | 11 | 3 |
| Emergency Generators[d] | NA | NA | NA | NA | NA | NA |
| **Alternative 6 Peak Daily Emissions[e]** | **8,999** | **88,823** | **622,636** | **3,483** | **408,413** | **105,361** |
| *2045 without Project Conditions* | | | | | | |
| Mobile – 2045 VMT Analysis Emissions | 8,987 | 88,927 | 623,264 | 3,487 | 408,902 | 105,487 |
| **Net Change in Emissions** | **12** | **-105** | **-628** | **-4** | **-489** | **-126** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generators would not be required.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
NA = not applicable
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District

$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 6 net operational emissions would not exceed the applicable SCAQMD's regional operational significance thresholds, Alternative 6 operational emissions would not be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 6's contribution of pollutant emissions is not expected to result in appreciable human health impacts on a regional scale.

As discussed previously, the comparison for Alternative 6 and Existing Conditions 2021 is presented for informational purposes only. Table 3.2-26 summarizes the Alternative 6 peak daily criteria pollutant emissions for each source category compared to Existing Conditions 2021. As shown in Table 3.2-26, Alternative 6 would exceed SCAQMD's regional significance thresholds for $PM_{10}$ and $PM_{2.5}$. All other criteria pollutants would be below regional significance thresholds and would even result in a net decrease in peak daily emissions of VOCs, $NO_X$, CO, and $SO_2$. The significant increase in particulate matter would be attributable to background growth in regional VMT from 2021 to 2045 and particulate matter fugitive dust emission factors. Fugitive dust emissions factors include dust from tire wear, brake wear, and resuspended road dust. These processes comprise greater than 90 percent of the total per-mile emissions factors for $PM_{10}$ and $PM_{2.5}$. Fugitive dust emission factors for tire wear, brake wear, and paved roads would remain relatively constant over this time frame, whereas exhaust emission factors would tend to decrease in future years due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles. Consequently, while Alternative 6 would result in a net increase in $PM_{10}$ and $PM_{2.5}$ emissions, this increase is attributable to the overall growth in VMT across the region and is not a direct result of Alternative 6. The ability of Alternative 6 to reduce vehicle emissions would not extend to fugitive dust, which is the primary source of the increase in particulate matter emissions.

**Table 3.2-26. Alternative 6 (Horizon Year 2045): Peak Daily Regional Operational Criteria Pollutant Emissions Compared to Existing Conditions (Baseline Year 2021)**

| Source Category | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| *Alternative 6* | | | | | | |
| Area – MSF[b] | 4 | <0.1 | 5 | <0.1 | <0.1 | <0.1 |
| Area – Stations[c] | 18 | <1 | 109 | <0.1 | <1 | <1 |
| Mobile – Regional VMT Analysis | 8,976 | 88,818 | 622,502 | 3,483 | 408,402 | 105,358 |
| Mobile – Employee Travel | 1 | 3 | 20 | <0.1 | 11 | 3 |
| Emergency Generators[d] | NA | NA | NA | NA | NA | NA |
| **Alternative 6 Peak Daily Emissions[e]** | **8,999** | **88,823** | **622,636** | **3,483** | **408,413** | **105,361** |
| *Existing Conditions* | | | | | | |
| Mobile – 2021 VMT Analysis Emissions | 27,490 | 222,016 | 1,219,501 | 3,920 | 329,216 | 86,051 |
| **Net Change in Emissions** | **-18,491** | **-133,193** | **-596,865** | **-438** | **79,197** | **19,310** |
| SCAQMD Regional Significance Thresholds | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | No | No | No | **Yes** | **Yes** |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.
[b]Total on-site emissions from the MSF.
[c]Total on-site emissions from all stations.
[d]Emergency generators would not be required.
[e]Totals may vary due to rounding.

CO = carbon monoxide
lbs/day = pounds per day
NA = not applicable
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VMT = vehicle miles traveled
VOC = volatile organic compounds

*Construction Impacts*

Alternative 6 construction activities would generate criteria pollutant emissions from off-road equipment, mobile sources—including workers, vendor trucks, and haul trucks traveling to and from construction sites—demolition, soil handling activities, paving, application of architectural coatings, and operation of temporary concrete batch plants. These emissions sources would be related to constructing the HRT system alignment, TPSSs, stations, and the MSF.

Construction emissions would vary substantially from day to day, depending on the level of activity and the specific type of construction activity. The peak daily construction emissions for Alternative 6 were estimated for each construction year. Based on the construction schedule for Alternative 6, construction phases for components could potentially overlap; therefore, the estimates of peak daily emissions included these potential overlaps by combining the relevant construction phase daily emissions. The peak daily emissions are predicted values for the worst-case day and do not represent the emissions that would occur for every day of construction. Table 3.2-27 summarizes the peak daily regional emissions for each construction year.

**Table 3.2-27. Alternative 6: Unmitigated Peak Daily Regional Construction Criteria Pollutant Emissions**

| Construction Year | Daily Emissions (lbs/day) | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_2$ | $PM_{10}$[a] | $PM_{2.5}$[a] |
| 2029 | 26 | 192 | 505 | <1 | 55 | 14 |
| 2030 | 15 | 204 | 359 | 1 | 75 | 17 |
| 2031 | 10 | 128 | 292 | 1 | 64 | 14 |
| 2032 | 6 | 84 | 184 | <1 | 47 | 10 |
| 2033 | 19 | 150 | 337 | <1 | 44 | 11 |
| 2034 | 23 | 142 | 319 | <1 | 32 | 9 |
| 2035 | 29 | 226 | 434 | 1 | 39 | 11 |
| 2036 | 21 | 197 | 385 | <1 | 33 | 10 |
| 2037 | 5 | 54 | 105 | <1 | 10 | 3 |
| **Peak Daily Emissions** | **29** | **226** | **505** | **1** | **75** | **17** |
| SCAQMD Regional Significance Thresholds | 75 | 100 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | No | **Yes** | No | No | No | No |

Source: HTA, 2024

[a]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs = pounds
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
$SO_2$ = sulfur dioxide
VOC = volatile organic compounds

As shown in Table 3.2-27, Alternative 6 construction emissions would exceed the SCAQMD regional significance thresholds for $NO_X$ emissions. SCAQMD's cumulative air quality impact methodology indicates that if an individual project results in air emissions of criteria pollutants that exceed the SCAQMD's recommended daily thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these criteria pollutants for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. Because Alternative 6 construction emissions would exceed the applicable SCAQMD's regional construction significance thresholds for $NO_X$, Alternative 6 construction emissions would be cumulatively considerable. Additionally, recognizing that SCAQMD's regional significance thresholds were established to achieve attainment of the NAAQS and CAAQS, which in turn define the maximum amount of an air pollutant that can be present in ambient air without harming public health, Alternative 6's contribution of pollutant emissions during short-term construction activities may result in appreciable human health impacts on a regional scale.

$NO_x$ emissions can have various regional health and environmental impacts. Exposure to $NO_x$ may cause eye and respiratory tract irritation and contribute to broader environmental issues such as acid rain and nitrate contamination in stormwater. Additionally, $NO_x$ is a precursor to $O_3$ formation, which poses significant health and ecological risks. High concentrations of $O_3$ can irritate the lungs, and prolonged exposure may lead to damaged lung tissue, increased cancer risk, and harm to plant materials. Long-term $O_3$ exposure can damage vegetation, reduce crop productivity, and disrupt ecosystems.

As discussed in Section 3.2.2.1, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and

included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 6 conservatively assumed all equipment would be diesel powered. The Metro *Green Construction Policy* contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

MM AQ-1, MM AQ-2, and MM AQ-3 prescribed in Section 3.2.6 would reduce criteria pollutant emissions during construction, but mitigation measures would not reduce Alternative 6 $NO_X$ emissions below SCAQMD significance thresholds; therefore, Alternative 6 construction emissions would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard, and impacts would be significant and unavoidable.

#### 3.2.5.3 Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations?

The term sensitive receptor refers to receptors located at land uses associated with people who are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and other air quality-related health problems on average than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality.

**Project Alternatives**

***No Project Alternative***

**Impact Statement**

**Operational Impact: No Impact**

**Construction Impact: Less than Significant**

*Operational Impacts*

Localized Emissions Analysis

The No Project Alternative includes modifications to Metro Line 761. Additional bus stops for Metro Line 761 may be constructed and operated to facilitate route changes under the No Project Alternative. No new track installation, stations, or MSF would be constructed nor operated under the No Project Alternative. Based on SCAQMD's Localized Significance Threshold Methodology, localized emissions are considered emissions that are generated on-site and exclude mobile source emissions generated off-site. Because the No Project Alternative emissions are solely related to mobile sources, the No Project Alternative would not generate localized criteria pollutant emissions during operations. The additional bus stops related to Metro Line 761 would not be a perceptible source of emissions when operational. Overall, no impact would occur under the No Project Alternative.

Carbon Monoxide Hot Spots

No new track installation, stations, or MSF would neither be constructed nor operated under the No Project Alternative. The No Project Alternative would not perceptibly change the existing traffic volumes at local intersections; therefore, no impact would occur under the No Project Alternative.

*Construction Impacts*

The No Project Alternative includes modifications to Metro Line 761. The modifications would include the construction of additional bus stops for Metro Line 761 to facilitate route changes under the No Project Alternative. Construction of Metro Line 761 elements would be temporary and conform with applicable federal, state, regional, and local regulations and standards related to criteria pollutant emissions. Additionally, the project would undergo project-specific environmental clearance and would implement project-specific mitigation measures, as necessary, to avoid or minimize potential criteria pollutant impacts. Construction of additional bus stops along Metro Line 761 would result in minimal criteria pollutant emissions because installation of bus stop components (benches, enclosures, signage, etc.) could be installed in a few days and would not require substantial amounts of off-road equipment or truck hauling. Overall, because project alternatives would not be constructed under the No Project Alternative, and construction of additional bus stops along Metro Line 761 would result in minimal criteria pollutant and TAC emissions, sensitive receptors would not be exposed to substantial pollutant concentrations and impacts would be less than significant under the No Project Alternative.

***Alternative 1***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Localized Emissions Analysis

To assess the potential localized air quality impacts resulting from Alternative 1 on nearby sensitive receptors during operations, the daily on-site operations emissions generated at Alternative 1 components — primarily the monorail MSF Base Design and MSF Design Option 1, the e-Bus MSF, and all stations — were compared to SCAQMD's applicable operations LSTs. As described in Chapter 2, Project Description, the monorail MSF Base Design and MSF Design Option 1 would have the same facilities; therefore, operational emissions for MSF Design Option 1 would be equivalent to the criteria pollutant emissions modeled for the MSF Base Design. Overall, the emissions analysis accounted for emissions from either MSF. Alternative 1 localized emissions would be generated from area sources (such as landscaping equipment, use of consumer products, and reapplication of architectural coatings) and emergency generator maintenance testing. As discussed in Section 0, localized emissions from the MSF and all stations were summed together and compared to the operational LSTs. As shown in Table 3.2-28, Alternative 1 localized operational emissions would not exceed SCAQMD significance thresholds; therefore, impacts of local criteria pollutants would be less than significant.

**Table 3.2-28. Alternative 1: Unmitigated Localized Operations Criteria Pollutant Emissions**

| Source Category | Daily Emissions (lbs/day) | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[e] | $PM_{2.5}$[e] |
| Area – MSF and e-Bus MSF[a] | <0.1 | 5 | <0.1 | <0.1 |
| Area – Stations[b] | <1 | 24 | <0.1 | <0.1 |
| Emergency Generators[c] | 17 | 10 | <1 | <1 |
| **Alternative 1 Total Localized Emissions** | **17** | **40** | **1** | **1** |
| SCAQMD Localized Significance Thresholds[d] | 172 | 1,434 | 3 | 2 |
| Exceeds Threshold? | No | No | No | No |

Source: HTA, 2024

[a]Total on-site emissions from the MSF and e-Bus MSF.

[b]Total on-site emissions from all stations.

[c]Emergency generator located at the MSF.

[d]Localized significance thresholds based on most stringent values for a 5-acre site with a 25-meter receptor distance in SRA 2 and SRA 7.

[e]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs = pounds
$NO_X$ = nitrogen oxides
$PM_{2.5}$ = fine particulate matter of diameter less than 2.5 microns
$PM_{10}$ = respirable particulate matter of 10 microns or less
SCAQMD = South Coast Air Quality Management District
SRA = Source Receptor Area

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 1 operational emissions would not exceed the LSTs, Alternative 1 would not cause or contribute to a violation of any health-protective CAAQS and NAAQS.

Carbon Monoxide Hot Spots

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. CO hot spots at roadway intersections are typically found in areas with significant traffic congestion. CO is a public health concern because at high enough concentrations, it can cause health problems such as fatigue, headache, confusion, dizziness, and even death. However, it should be noted that ambient concentrations of CO have declined dramatically in California because of existing controls and programs.

Currently, all areas of the state, including the Project Study Area, meet the state and federal CO standards and are designated attainment or maintenance. As part of SCAQMD's 2003 AQMP, which is the most recent AQMP that addresses CO concentrations, a revision to the Federal Attainment Plan for Carbon Monoxide (CO Plan) that was originally approved in 1992 was provided that included a CO hot spots analysis at four specified heavily traveled intersections in Los Angeles at the peak morning and afternoon time periods. These four intersection locations selected for CO modeling are considered to be

worst-case intersections that would likely experience the highest CO concentrations. The CO hot spots analysis in the 2003 AQMP did not predict a violation of CO standards at the four intersections. Of these four intersections, the busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which was described as the most heavily congested intersection in Los Angeles County with an average daily traffic volume of approximately 100,000 vehicles per day. Based on the CO modeling, the 2003 AQMP estimated that the 1-hour and 8-hour concentrations at this intersection was 4.6 ppm and 3.4 ppm, respectively, which would not exceed the most stringent 1-hour CO standard of 20.0 ppm and 8-hour CO standards of 9 ppm (SCAQMD, 2003).

The *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) analyzed traffic volume data at intersections in the Project Study Area that would be affected by Alternative 1 in Horizon Year 2045. The highest daily traffic volumes generated at an intersection within the vicinity of Alternative 1 would be an estimated cumulative total of 75,460 vehicles per day at the intersection of Wilshire Boulevard and Sepulveda Boulevard. Because the daily number of vehicles at this study intersection would not exceed 100,000 vehicles per day, it can be concluded that Alternative 1 would not exceed the most stringent 1-hour and 8-hour CO standards, and no detailed CO hot spots analysis for Alternative 1 would be required. Therefore, Alternative 1 would not result in impacts related to CO hot spots and would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded.

*Construction Impacts*

Localized Emissions Analysis

Using the conservative methodology described in Section 3.2.2.3 to assess the potential localized air quality impacts resulting from Alternative 1 on nearby receptors during construction, the daily on-site construction emissions from the Alternative 1 components (alignment, stations, TPSSs, MSFs) were compared to SCAQMD's applicable construction LSTs. As described in Chapter 2, Description of Alternatives, the monorail MSF Base Design and MSF Design Option 1 would have the same facilities; therefore, construction emissions for MSF Design Option 1 would be equivalent to the criteria pollutant emissions modeled for the MSF Base Design. Regardless of which MSF is selected in future final design decisions, the analysis adequately accounted for emissions from either of these MSFs. Alternative 1 localized emissions included exhaust emissions from off-road equipment and trucks, and fugitive dust from demolition, earth movement activities, and truck travel. As shown in Table 3.2-29, Alternative 1 localized construction emissions would exceed the $PM_{10}$ LST for construction activity in the Valley; therefore, Alternative 1 localized construction emissions would have adverse health risk implications (as discussed in Section 3.2.2.3 and Section 3.2.4.2) and would be considered to be significant.

**Table 3.2-29. Alternative 1: Unmitigated Localized Construction Criteria Pollutant Emissions**

| Construction Area | Daily Emissions (lbs/day)[a] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[b] | $PM_{2.5}$[b] |
| ***Valley Construction Components***[c] | | | | |
| MRT Segment 1-Van Nuys Metrolink to Getty Center | 43.1 | 190.6 | 2.9 | 1.3 |
| Van Nuys MRT Station | 5.0 | 23.4 | 0.2 | 0.1 |
| Sherman Way MRT Station | 5.0 | 23.4 | 0.2 | 0.1 |
| Metro G Line MRT Station | 5.0 | 23.4 | 0.5 | 0.2 |
| Sherman Oaks-Ventura Boulevard MRT Station | 5.0 | 23.4 | 0.5 | 0.2 |
| TPSS 6 - Skirball | 4.1 | 13.3 | 2.4 | 1.0 |
| TPSS 11 - Raymer-Van Nuys | 4.1 | 13.3 | 2.7 | 1.1 |

| Construction Area | Daily Emissions (lbs/day)[a] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[b] | $PM_{2.5}$[b] |
| MSF | 4.1 | 13.3 | 3.7 | 1.3 |
| ***Components In Proximity to Each Other*** | | | | |
| MRT Segment 1 + Van Nuys Station + TPSS 11 + MSF | 56.2 | 240.6 | 9.6 | 3.8 |
| **Peak Daily Localized Emissions** | **56.2** | **240.6** | **9.6** | **3.8** |
| SCAQMD Localized Significance Threshold[d] | 114 | 786 | 7 | 4 |
| Exceeds Threshold? | No | No | **Yes** | No |
| ***Westside Construction Component[c]*** | | | | |
| MRT Segment 2 – Getty Center to North of I-405-Wilshire Interchange | 23.1 | 96.9 | 1.1 | 0.5 |
| MRT Segment 3 – I-405-Wilshire Interchange Stretch | 13.3 | 50.2 | 0.9 | 0.4 |
| MRT Segment 4 – South of I-405-Wilshire Interchange to Metro E Line | 18.4 | 73.6 | 1.4 | 0.4 |
| Getty Center MRT Station | 5.0 | 23.4 | 0.3 | 0.2 |
| Wilshire Blvd-Metro D Line-VA Hospital MRT Station | 4.7 | 20.5 | 0.2 | 0.1 |
| Santa Monica Boulevard MRT Station | 5.0 | 23.4 | 0.3 | 0.2 |
| Exposition Boulevard MRT Station | 5.0 | 23.4 | 0.3 | 0.2 |
| TPSS 2 – Wilshire Boulevard | 4.1 | 13.3 | 2.4 | 1.0 |
| TPSS 3 – Sunset On-ramp | 4.1 | 13.3 | 2.3 | 1.0 |
| TPSS 4 – I-405-Near Getty Center on East side of I-405 | 4.1 | 13.3 | 2.4 | 1.0 |
| e-Bus MSF | 4.1 | 13.3 | 3.3 | 1.2 |
| ***Components In Proximity to Each Other*** | | | | |
| MRT Segment 2 + MRT Segment 3 + Wilshire Blvd MRT Station + TPSS 2 | 45.2 | 180.8 | 4.6 | 2.1 |
| **Peak Daily Localized Emissions** | **45.2** | **180.8** | **4.6** | **2.1** |
| SCAQMD Localized Significance Threshold[e] | 147 | 827 | 6 | 4 |
| Exceeds Threshold? | No | No | No | No |

Source: HTA, 2024

[a]Daily emissions for each construction component represent the contribution to the maximum daily localized emissions in the Valley or Westside.

[b]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

[c]Traction power substations (TPSS) listed would be located at standalone locations and not within the construction area of a proposed station, MSF, track alignment, or tunnel. Each of these standalone TPSSs had their own construction phasing in the construction emissions analysis. For TPSSs located within the construction area of a station, MSF, track alignment, or tunnel, their construction activity was accounted for in the overall construction activity for the component.

[d]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 7 East San Fernando Valley.

[e]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 2 Northwest Coastal LA County.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
$PM_{10}$ = respirable particulate matter of 10 microns or less
SCAQMD = South Coast Air Quality Management District
VMT = vehicle miles traveled
VA = U.S. Department of Veterans Affairs

Short-term exposure to elevated $PM_{10}$ levels during construction can lead to significant health effects, particularly for sensitive populations such as children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions. These health impacts include respiratory irritation, which can manifest as coughing, wheezing, shortness of breath, and worsened asthma symptoms. Additionally, $PM_{10}$ exposure can exacerbate cardiovascular conditions, increasing heart rate variability, inflammation, and the risk of cardiac events. Acute respiratory infections, such as bronchitis, may also occur, particularly affecting vulnerable groups like children and older adults.

DPM, a component of $PM_{10}$ from diesel engines, poses additional risks. It is associated with respiratory irritation, acute inflammation, and oxidative stress. Prolonged or high-level exposure can elevate the risk of lung cancer and cardiovascular issues. These impacts are particularly pronounced near construction sites, where emissions are concentrated and receptors in close proximity are exposed.

As discussed in Section 3.2.2.3, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 1 conservatively assumed all equipment would be diesel powered. The Metro *Green Construction Policy* contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

Although MM AQ-1, MM AQ-2, and MM AQ-3 prescribed as follows would reduce criteria pollutant emissions during construction, including localized $PM_{10}$ emissions, mitigation measures would not reduce Alternative 1 $PM_{10}$ emissions below SCAQMD localized significance thresholds; therefore, Alternative 1 construction emissions would potentially expose sensitive receptors to substantial concentrations and impacts would be significant and unavoidable.

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 1 construction emissions would exceed the $PM_{10}$ LST, Alternative 1 would cause or contribute to a violation of one or more health-protective CAAQS and NAAQS. Given that DPM emissions would constitute a portion of localized $PM_{10}$ emissions, impacts related to localized DPM emissions during construction are also considered to be significant and unavoidable due to the following: (1) the elevated background carcinogenic risk, (2) the duration of construction activity, and (3) the proximity of sensitive receptors to DPM emissions sources.

***Alternative 3***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Localized Emissions Analysis

To assess the potential localized air quality impacts resulting from Alternative 3 on nearby sensitive receptors during operations, the daily on-site operations emissions generated at Alternative 3

components, primarily the MSF and all stations, were compared to SCAQMD's applicable operations LSTs. As described in Chapter 2, Project Description, the monorail MSF Base Design and MSF Design Option 1 would have the same facilities; therefore, operational emissions for MSF Design Option 1 would be equivalent to the criteria pollutant emissions modeled for the MSF Base Design. Overall, the emissions analysis accounted for emissions from either MSF. Alternative 3 localized emissions would be generated from area sources, such as landscaping equipment, use of consumer products, and reapplication of architectural coatings; and emergency generator maintenance testing. As discussed in Section 0, localized emissions from the MSF and all stations were summed together and compared to the operational LSTs. As shown in Table 3.2-30, Alternative 3 localized operational emissions would not exceed SCAQMD significance thresholds; therefore, impacts of local criteria pollutants would be less than significant.

**Table 3.2-30. Alternative 3: Unmitigated Localized Operations Criteria Pollutant Emissions**

| Source Category | Daily Emissions (lbs/day) | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[e] | $PM_{2.5}$[e] |
| Area – MSF and Electric MSF[a] | <0.1 | 4 | <0.1 | <0.1 |
| Area – Stations[b] | <1 | 39 | <0.1 | <0.1 |
| Emergency Generators[c] | 52 | 29 | 2 | 2 |
| **Alternative 3 Total Localized Emissions** | **52** | **72** | **2** | **2** |
| SCAQMD Localized Significance Thresholds[d] | 172 | 1,434 | 3 | 2 |
| Exceeds Threshold? | No | No | No | No |

Source: HTA, 2024

[a]Total on-site emissions from the MSF.

[b]Total on-site emissions from all stations.

[c]Emergency generators are located at the MSF and underground stations.

[d]Localized significance thresholds based on most stringent values for a 5-acre site with a 25-meter receptor distance in SRA 2 and SRA 7.

[e]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
SRA = Source Receptor Area

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 3 operational emissions would not exceed the LSTs, Alternative 3 would not cause or contribute to a violation of any health-protective CAAQS and NAAQS.

Carbon Monoxide Hot Spots

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. CO hot spots at roadway intersections are typically found in areas with significant traffic congestion. CO is a public health concern because at high enough concentrations, it can cause health problems such as fatigue, headache, confusion, dizziness, and even death. However, it should be noted that ambient concentrations of CO have declined dramatically in California because of existing controls and programs.

Currently, all areas of the state, including the Project Study Area, meet the state and federal CO standards and are designated attainment or maintenance. As part of SCAQMD's 2003 AQMP, which is the most recent AQMP that addresses CO concentrations, a revision to the CO Plan that was originally approved in 1992 was provided that included a CO hot spots analysis at four specified heavily traveled intersections in Los Angeles at the peak morning and afternoon time periods. These four intersection locations selected for CO modeling are considered to be worst-case intersections that would likely experience the highest CO concentrations. The CO hot spots analysis in the 2003 AQMP did not predict a violation of CO standards at the four intersections. Of these four intersections, the busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which was described as the most heavily congested intersection in Los Angeles County with an average daily traffic volume of approximately 100,000 vehicles per day. Based on the CO modeling, the 2003 AQMP estimated that the 1-hour and 8-hour concentrations at this intersection was 4.6 ppm and 3.4 ppm, respectively, which would not exceed the most stringent 1-hour CO standard of 20.0 ppm and 8-hour CO standards of 9 ppm (SCAQMD, 2003).

The *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) analyzed traffic volume data at intersections in the Project Study Area affected by Alternative 3 in Horizon Year 2045. The highest daily traffic volumes generated at an intersection within the vicinity of Alternative 3 would be an estimated cumulative total of 75,210 vehicles per day at the intersection of Wilshire Boulevard and Sepulveda Boulevard. Because the daily number of vehicles at this study intersection would not exceed 100,000 vehicles per day, it can be concluded that Alternative 3 would not exceed the most stringent 1-hour and 8-hour CO standards and no detailed CO hot spots analysis for Alternative 3 would be required. Therefore, Alternative 3 would not result in impacts related to CO hot spots and would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded.

*Construction Impacts*

Localized Emissions Analysis

Using the conservative methodology described in Section 3.2.2.3 to assess the potential localized air quality impacts resulting from Alternative 3 on nearby receptors during construction, the daily on-site construction emissions from the Alternative 3 components (alignment, stations, TPSSs, MSFs) were compared to SCAQMD's applicable construction LSTs. As described in Chapter 2, Project Description, the monorail MSF Base Design and MSF Design Option 1 would have the same facilities; therefore, construction emissions for MSF Design Option 1 would be equivalent to the criteria pollutant emissions modeled for the MSF Base Design. Regardless of which MSF is selected in future final design decisions, the analysis adequately accounted for emissions from either of these MSFs. Alternative 3 localized emissions included exhaust emissions from off-road equipment and trucks, and fugitive dust from demolition, earth movement activities, and truck travel. As shown in Table 3.2-31, Alternative 3 localized construction emissions would exceed the $PM_{10}$ LST for construction activity in the Valley and Westside;

therefore, Alternative 3 localized construction emissions would have adverse health risk implications (as discussed in Section 3.2.2.3 and Section 3.2.4.2) and would be considered to be significant.

**Table 3.2-31. Alternative 3: Unmitigated Localized Construction Criteria Pollutant Emissions**

| Construction Area | Daily Emissions (lbs/day)[a] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[b] | $PM_{2.5}$[b] |
| ***Valley Construction Components***[c] | | | | |
| MRT Segment 1 - Van Nuys Metrolink to Getty Center | 43.1 | 190.6 | 2.9 | 1.3 |
| Van Nuys MRT Station | 5.0 | 23.4 | 0.2 | 0.1 |
| Sherman Way MRT Station | 5.0 | 23.4 | 0.2 | 0.1 |
| Metro G Line MRT Station | 5.0 | 23.4 | 0.5 | 0.2 |
| Sherman Oaks/Ventura Boulevard MRT Station | 5.0 | 23.4 | 0.5 | 0.2 |
| TPSS 6 - Skirball | 4.1 | 13.3 | 2.4 | 1.0 |
| TPSS 11 - Raymer-Van Nuys | 4.1 | 13.3 | 2.7 | 1.1 |
| MSF | 4.1 | 13.3 | 3.7 | 1.3 |
| ***Components In Proximity to Each Other*** | | | | |
| MRT Segment 1 + Van Nuys Station + TPSS 11 + MSF | 56.2 | 240.6 | 9.6 | 3.8 |
| **Peak Daily Localized Emissions** | **56.2** | **240.6** | **9.6** | **3.8** |
| SCAQMD Localized Significance Threshold[d] | 114 | 786 | 7 | 4 |
| Exceeds Threshold[e]? | No | No | **Yes** | No |
| ***Westside Construction Components***[c] | | | | |
| MRT Segment 6 - Getty Center to Federal Building | 30.4 | 116.3 | 6.6 | 0.9 |
| MRT Segment 7 - Federal Building to South of 405-Wilshire Interchange | 14.5 | 57.6 | 0.5 | 0.2 |
| MRT Segment 4 - South of I-405-Wilshire Interchange to Metro E Line | 18.4 | 73.6 | 1.7 | 0.6 |
| Getty Center MRT Station | 5.0 | 23.4 | 0.3 | 0.2 |
| UCLA Gateway MRT Station | 5.7 | 24.0 | 2.3 | 0.4 |
| Wilshire Boulevard/Metro D Station | 6.2 | 24.4 | 3.7 | 0.5 |
| Santa Monica Boulevard MRT Station | 5.0 | 23.4 | 0.3 | 0.2 |
| Exposition Boulevard MRT Station | 5.0 | 23.4 | 0.3 | 0.2 |
| TPSS 4 - I-405-Near Getty Center on East side of I-405 | 4.1 | 13.3 | 2.4 | 1.0 |
| ***Components In Proximity to Each Other*** | | | | |
| MRT Segment 7 + Wilshire Boulevard/Metro D MRT Station | 20.7 | 82.0 | 4.2 | 0.8 |
| **Peak Daily Localized Emissions** | **30.4** | **116.3** | **6.6** | **1.0** |
| SCAQMD Localized Significance Threshold[e] | 147 | 827 | 6 | 4 |
| Exceeds Threshold? | No | No | **Yes** | No |

Source: HTA, 2024

[a]Daily emissions for each construction component represent the contribution to the maximum daily localized emissions in the Valley or Westside.

[b]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

[c]Traction power substations (TPSS) listed would be located at standalone locations and not within the construction area of a proposed station, MSF, track alignment, or tunnel. Each of these standalone TPSSs had their own construction phasing in the construction emissions analysis. For TPSSs located within the construction area of a station, MSF, track alignment, or tunnel, their construction activity was accounted for in the overall construction activity for the component.

[d]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 7 East San Fernando Valley.

[e]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 2 Northwest Coastal LA County.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
SRA = Source Receptor Area
VMT = vehicle miles traveled

Short-term exposure to elevated $PM_{10}$ levels during construction can lead to significant health effects, particularly for sensitive populations such as children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions. These health impacts include respiratory irritation, which can manifest as coughing, wheezing, shortness of breath, and worsened asthma symptoms. Additionally, $PM_{10}$ exposure can exacerbate cardiovascular conditions, increasing heart rate variability, inflammation, and the risk of cardiac events. Acute respiratory infections, such as bronchitis, may also occur, particularly affecting vulnerable groups like children and older adults.

DPM, a component of $PM_{10}$ from diesel engines, poses additional risks. It is associated with respiratory irritation, acute inflammation, and oxidative stress. Prolonged or high-level exposure can elevate the risk of lung cancer and cardiovascular issues. These impacts are particularly pronounced near construction sites, where emissions are concentrated, and receptors in close proximity are exposed.

As discussed in Section 3.2.2.3, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 3 conservatively assumed all equipment would be diesel powered. The Metro Green Construction Policy contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

Although MM AQ-1, MM AQ-2, and MM AQ-3 prescribed below would reduce criteria pollutant emissions during construction, including localized $PM_{10}$ emissions, mitigation measures would not reduce Alternative 3 $PM_{10}$ emissions below SCAQMD localized significance thresholds; therefore, Alternative 3 construction emissions would potentially expose sensitive receptors to substantial concentrations, and impacts would be significant and unavoidable.

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 3 construction emissions would exceed the $PM_{10}$ LST, Alternative 3 would cause or contribute to a violation of one or more health-protective CAAQS and NAAQS. Given that DPM emissions constitute a portion of localized $PM_{10}$ emissions, impacts related to localized DPM emissions during construction are also considered to be significant and unavoidable due to the following: (1) the elevated background carcinogenic risk, (2) the duration of construction activity, and (3) the proximity of sensitive receptors to DPM emissions sources.

***Alternative 4***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Localized Emissions Analysis

To assess the potential localized air quality impacts resulting from Alternative 4 on nearby sensitive receptors during operations, the daily on-site operations emissions generated at Alternative 4 components, primarily the MSF and all stations, were compared to SCAQMD's applicable operations LSTs. Alternative 4 localized emissions would be generated from area sources (such as landscaping equipment, use of consumer products, and reapplication of architectural coatings) and emergency generator maintenance testing. As discussed in Chapter 2, Project Description, localized emissions from the MSF and all stations were summed together and compared to the operational LSTs. As shown in Table 3.2-32, Alternative 4 localized operational emissions would not exceed SCAQMD significance thresholds; therefore, impacts of local criteria pollutants would be less than significant.

**Table 3.2-32. Alternative 4: Unmitigated Localized Operations Criteria Pollutant Emissions**

| Source Category | Daily Emissions (lbs/day) | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[e] | $PM_{2.5}$[e] |
| Area – MSF[a] | <0.1 | 12 | <0.1 | <0.1 |
| Area – Stations[b] | <1 | 41 | <0.1 | <0.1 |
| Emergency Generators[c] | 17 | 10 | <1 | <1 |
| **Alternative 4 Total Localized Emissions** | **18** | **63** | **<1** | **<1** |
| SCAQMD Localized Significance Thresholds[d] | 172 | 1,434 | 3 | 2 |
| Exceeds Threshold? | No | No | No | No |

Source: HTA, 2024

[a]Total on-site emissions from the MSF.

[b]Total on-site emissions from all stations.

[c]Emergency generator located at the MSF.

[d]Localized significance thresholds based on most stringent values for a 5-acre site with a 25-meter receptor distance in SRA 2 and SRA 7.

[e]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable

LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 4 operational emissions would not exceed the LSTs, Alternative 4 would not cause or contribute to a violation of any health-protective CAAQS and NAAQS.

Carbon Monoxide Hot Spots

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. CO hot spots at roadway intersections are typically found in areas with significant traffic congestion. CO is a public health concern because at high enough concentrations, it can cause health problems such as fatigue, headache, confusion, dizziness, and even death. However, it should be noted that ambient concentrations of CO have declined dramatically in California because of existing controls and programs.

Currently, all areas of the state, including the Project Study Area, meet the state and federal CO standards and are designated attainment or maintenance. As part of SCAQMD's 2003 AQMP, which is the most recent AQMP that addresses CO concentrations, a revision to the CO Plan that was originally approved in 1992 was provided that included a CO hot spots analysis at four specified heavily traveled intersections in Los Angeles at the peak morning and afternoon time periods. These four intersection locations selected for CO modeling are considered to be worst-case intersections that would likely experience the highest CO concentrations. The CO hot spots analysis in the 2003 AQMP did not predict a violation of CO standards at the four intersections. Of these four intersections, the busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which was described as the most heavily congested intersection in Los Angeles County with an average daily traffic volume of approximately 100,000 vehicles per day. Based on the CO modeling, the 2003 AQMP estimated that the 1-hour and 8-hour concentrations at this intersection was 4.6 ppm and 3.4 ppm, respectively, which would not exceed the most stringent 1-hour CO standard of 20.0 ppm and 8-hour CO standards of 9 ppm (SCAQMD, 2003).

The *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) analyzed traffic volume data at intersections in the Project Study Area affected by Alternative 4 in Horizon Year 2045. The highest daily traffic volumes generated at an intersection within the vicinity of Alternative 4 would be an estimated cumulative total of 74,840 vehicles per day at the intersection of Sepulveda Boulevard and Sherman Way. Because the daily number of vehicles at this study intersection would not exceed 100,000 vehicles per day, it can be concluded that Alternative 4 would not exceed the most stringent 1-hour and 8-hour CO standards and no detailed CO hot spots analysis for Alternative 4 would be required. Therefore, Alternative 4 would not result in impacts related to CO hot spots and would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded.

*Construction Impacts*

Localized Emissions Analysis

Using the conservative methodology described in Section 3.2.2.3 to assess the potential localized air quality impacts resulting from Alternative 4 on nearby receptors during construction, the daily on-site construction emissions from the Alternative 4 components (alignment, stations, TPSSs, MSF) were compared to SCAQMD's applicable construction LSTs. Alternative 4 localized emissions would include exhaust emissions from off-road equipment and trucks, and fugitive dust from demolition, earth movement activities, and truck travel. As shown in Table 3.2-33, Alternative 4 localized construction emissions would exceed the $PM_{10}$ and $PM_{2.5}$ LSTs for construction activity in the Valley and exceed the $PM_{10}$ LST in the Westside; therefore, Alternative 4 localized construction emissions would have adverse

health risk implications (as discussed in Section 3.2.2.3 and Section 3.2.4.2) and would be considered to be significant.

**Table 3.2-33. Alternative 4: Unmitigated Localized Construction Criteria Pollutant Emissions**

| Construction Area | Daily Emissions (lbs/day)[a] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[b] | $PM_{2.5}$[b] |
| ***Valley Construction Components***[c] | | | | |
| Segment 2 - Reach 2 Tunnel (North Portal to UCLA Gateway Plaza Station) | 23.6 | 64.3 | 9.0 | 1.1 |
| Segment 3 - Aerial Guideway (North Portal to MSF) | 44.4 | 200.5 | 1.2 | 0.7 |
| (Ventura Boulevard Station Staging Area | 3.2 | 12.0 | 0.3 | 0.1 |
| Ventura Boulevard Station | 8.2 | 57.1 | 0.7 | 0.3 |
| Metro G Line Station | 22.5 | 77.3 | 0.6 | 0.3 |
| Sherman Way Station | 22.5 | 77.3 | 0.6 | 0.4 |
| Van Nuys Metrolink Station | 28.1 | 91.5 | 0.7 | 0.4 |
| TPSS 11-STA 1260 | — | — | — | — |
| MSF | 3.0 | 15.4 | 14.9 | 5.9 |
| Precast Yard | 16.6 | 48.6 | 13.4 | 2.4 |
| ***Components In Proximity to Each Other*** | | | | |
| Segment 2 + Ventura Boulevard Station | 31.7 | 121.4 | 9.7 | 1.4 |
| Segment 3 + Metrolink Van Nuys Station + TPSS 11 + MSF + Precast | 92.2 | 356.0 | 30.2 | 9.4 |
| **Peak Daily Localized Emissions** | **92.2** | **356.0** | **30.2** | **9.4** |
| SCAQMD Localized Significance Threshold[d] | 114 | 786 | 7 | 4 |
| Exceeds Threshold? | No | No | **Yes** | **Yes** |
| ***Westside Construction Components***[c] | | | | |
| Segment 1 - Reach 1 Tunnel (Southern Terminus to UCLA Gateway Plaza Station) | 13.4 | 53.8 | 8.0 | 1.0 |
| Segment 2 - Reach 2 Tunnel (North Portal to UCLA Gateway Plaza Station) | — | — | — | — |
| Metro E Line Station | 27.3 | 33.2 | 0.9 | 0.3 |
| Santa Monica Station | 15.4 | 80.4 | 2.6 | 0.4 |
| D Line Wilshire-Westwood Station | 17.8 | 47.1 | 4.7 | 0.8 |
| UCLA Gateway Plaza Station | 15.3 | 80.5 | 3.3 | 0.7 |
| ***Components In Proximity to Each Other*** | | | | |
| Not Applicable | — | — | — | — |
| **Peak Daily Localized Emissions** | **27.3** | **80.5** | **8.0** | **1.0** |
| SCAQMD Localized Significance Threshold[e] | 147 | 827 | 6 | 4 |
| Exceeds Threshold? | No | No | **Yes** | No |

Source: HTA, 2024

[a]Daily emissions for each construction component represent the contribution to the maximum daily localized emissions in the Valley or Westside.

[b]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

[c]Traction power substations (TPSS) listed would be located at standalone locations and not within the construction area of a proposed station, MSF, track alignment, or tunnel. Each of these standalone TPSSs had their own construction phasing in the construction emissions analysis. For TPSSs located within the construction area of a station, MSF, track alignment, or tunnel, their construction activity was accounted for in the overall construction activity for the component.

[d]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 7 East San Fernando Valley.

[e]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 2 Northwest Coastal LA County.

— = no data
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
SRA = Source Receptor Area

Short-term exposure to elevated $PM_{10}$ levels during construction can lead to significant health effects, particularly for sensitive populations such as children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions. These health impacts include respiratory irritation, which can manifest as coughing, wheezing, shortness of breath, and worsened asthma symptoms. Additionally, $PM_{10}$ exposure can exacerbate cardiovascular conditions, increasing heart rate variability, inflammation, and the risk of cardiac events. Acute respiratory infections, such as bronchitis, may also occur, particularly affecting vulnerable groups like children and older adults.

Exposure to $PM_{2.5}$ presents more significant health risks than $PM_{10}$, primarily due to its smaller particle size, which enables it to penetrate deeper into the lungs and enter the bloodstream. While both $PM_{10}$ and $PM_{2.5}$ contribute to respiratory irritation and cardiovascular issues, the smaller $PM_{2.5}$ particles can reach the alveoli (the tiny air sacs in the lungs) where they cause inflammation and long-term damage to lung tissue. In addition to respiratory impacts, $PM_{2.5}$ can enter the bloodstream, leading to systemic inflammation and an increased risk of cardiovascular diseases such as heart attacks, strokes, and arrhythmias. Long-term exposure to $PM_{2.5}$ has also been linked to cognitive decline, including Alzheimer's disease and other neurodegenerative conditions, because these particles can cross the blood-brain barrier. Moreover, $PM_{2.5}$ is a significant risk factor for cancer, particularly lung cancer, due to the toxic substances it often carries, including heavy metals and polycyclic aromatic hydrocarbons (PAH). Furthermore, prolonged exposure to $PM_{2.5}$ is associated with premature mortality, making it one of the leading environmental risk factors for early death from respiratory and cardiovascular diseases. In contrast, while $PM_{10}$ is still harmful, particularly for people with pre-existing conditions such as asthma, its impact is generally less severe, because it remains in the upper respiratory tract and is not absorbed into the bloodstream. Thus, $PM_{2.5}$ poses a broader range of health risks, including more severe cardiovascular and neurological effects.

DPM, a component of $PM_{10}$ from diesel engines, poses additional risks. It is associated with respiratory irritation, acute inflammation, and oxidative stress. Prolonged or high-level exposure can elevate the risk of lung cancer and cardiovascular issues. These impacts are particularly pronounced near construction sites, where emissions are concentrated, and receptors in close proximity are exposed.

As discussed in Section 3.2.2.3, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 4 conservatively assumed all equipment would be diesel powered. The Metro *Green Construction Policy* contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

Although MM AQ-1, MM AQ-2, and MM AQ-3 prescribed as follows would reduce criteria pollutant emissions during construction, including localized $PM_{10}$ and $PM_{2.5}$ emissions, mitigation measures would not reduce Alternative 4 $PM_{10}$ and $PM_{2.5}$ emissions below SCAQMD localized significance thresholds; therefore, Alternative 4 construction emissions would potentially expose sensitive receptors to substantial concentrations and impacts would be significant and unavoidable.

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 4 construction emissions would exceed the $PM_{10}$ LST, Alternative 4 would cause or contribute to a violation of one or more health-protective CAAQS and NAAQS. Given that DPM emissions would constitute a portion of localized $PM_{10}$ emissions, impacts related to localized DPM emissions during construction are also considered to be significant and unavoidable due to the following: (1) the elevated background carcinogenic risk, (2) the duration of construction activity, and (3) the proximity of sensitive receptors to DPM emissions sources.

***Alternative 5***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Localized Emissions Analysis

To assess the potential localized air quality impacts resulting from Alternative 5 on nearby sensitive receptors during operations, the daily on-site operations emissions generated at Alternative 5 components, primarily the MSF and all stations, were compared to SCAQMD's applicable operations LSTs. Alternative 5 localized emissions would be generated from area sources, such as landscaping equipment, use of consumer products, and reapplication of architectural coatings; and emergency generator maintenance testing. As discussed in Section 0, localized emissions from the MSF and all stations were summed together and compared to the operational LSTs. As shown in Table 3.2-34, Alternative 5 localized operational emissions would not exceed SCAQMD significance thresholds; therefore, impacts of local criteria pollutants would be less than significant.

**Table 3.2-34. Alternative 5: Unmitigated Localized Operations Criteria Pollutant Emissions**

| Source Category | Daily Emissions (lbs/day) | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[e] | $PM_{2.5}$[e] |
| Area – MSF[a] | <0.1 | 12 | <0.1 | <0.1 |
| Area – Stations[b] | <1 | 51 | <0.1 | <0.1 |
| Emergency Generators[c] | 17 | 10 | <1 | <1 |
| **Alternative 5 Total Localized Emissions** | **18** | **73** | **<1** | **<1** |
| SCAQMD Localized Significance Thresholds[d] | 172 | 1,434 | 3 | 2 |
| Exceeds Threshold? | No | No | No | No |

Source: HTA, 2024

[a]Total on-site emissions from the MSF.

[b]Total on-site emissions from all stations.

[c]Emergency generator located at the MSF.

[d]Localized significance thresholds based on most stringent values for a 5-acre site with a 25-meter receptor distance in SRA 2 and SRA 7.

[e]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs/day = pounds per day
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
SRA = Source Receptor Area

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 5 operational emissions would not exceed the LSTs, Alternative 5 would not cause or contribute to a violation of any health-protective CAAQS and NAAQS.

Carbon Monoxide Hot Spots

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. CO hot spots at roadway intersections are typically found in areas with significant traffic congestion. CO is a public health concern because at high enough concentrations, it can cause health problems such as fatigue, headache, confusion, dizziness, and even death. However, it should be noted that ambient concentrations of CO have declined dramatically in California because of existing controls and programs.

Currently, all areas of the state, including the Project Study Area, meet the state and federal CO standards and are designated attainment or maintenance. As part of SCAQMD's 2003 AQMP, which is the most recent AQMP that addresses CO concentrations, a revision to the CO Plan that was originally approved in 1992 was provided that included a CO hot spots analysis at four specified heavily traveled intersections in Los Angeles at the peak morning and afternoon time periods. These four intersection locations selected for CO modeling are considered to be worst-case intersections that would likely experience the highest CO concentrations. The CO hot spots analysis in the 2003 AQMP did not predict a violation of CO standards at the four intersections. Of these four intersections, the busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which was described as the most heavily congested intersection in Los Angeles County with an average daily traffic volume of approximately 100,000 vehicles per day. Based on the CO modeling, the 2003 AQMP estimated that the 1-hour and 8-hour concentrations at this intersection was 4.6 ppm and 3.4 ppm, respectively, which would not exceed the most stringent 1-hour CO standard of 20.0 ppm and 8-hour CO standards of 9 ppm (SCAQMD, 2003).

The *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) analyzed traffic volume data at intersections in the Project Study Area affected by Alternative 5 in Horizon Year 2045. The highest daily traffic volumes generated at an intersection within the vicinity of Alternative 5 would be an estimated cumulative total of 74,680 vehicles per day at the intersection of Sepulveda Boulevard and Sherman Way. Because the daily number of vehicles at this study intersection would not exceed

100,000 vehicles per day, it can be concluded that Alternative 5 would not exceed the most stringent 1-hour and 8-hour CO standards and no detailed CO hot spots analysis for Alternative 5 would be required. Therefore, Alternative 5 would not result in impacts related to CO hot spots and would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded.

*Construction Impacts*

Localized Emissions Analysis

Using the conservative methodology described in Section 3.2.2.3 to assess the potential localized air quality impacts resulting from Alternative 5 on nearby receptors during construction, the daily on-site construction emissions from the Alternative 5 components (alignment, stations, TPSSs, MSF) were compared to SCAQMD's applicable construction LSTs. Alternative 5 localized emissions included exhaust emissions from off-road equipment and trucks, and fugitive dust from demolition, earth movement activities, and truck travel. As shown in Table 3.2-35, Alternative 5 localized construction emissions would exceed the $PM_{10}$ and $PM_{2.5}$ LSTs for construction activity in the Valley and exceed the $PM_{10}$ LST in the Westside; therefore, Alternative 5 localized construction emissions would have adverse health risk implications (as discussed in Section 3.2.2.3 and Section 3.2.4.2) and would be considered to be significant.

**Table 3.2-35. Alternative 5: Unmitigated Localized Construction Criteria Pollutant Emissions**

| Construction Area | Daily Emissions (lbs/day)[a] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[b] | $PM_{2.5}$[b] |
| ***Valley Construction Components***[c] | | | | |
| Segment 4-Reach 2 Tunnel (Sepulveda-Ventura Station to UCLA Gateway Plaza Station) | 13.9 | 46.7 | 9.0 | 1.1 |
| Segment 5-Reach 3 Tunnel (Portal to Sepulveda-Ventura Station) | 23.6 | 46.5 | 9.4 | 0.6 |
| Segment 6-Reach 3 Portal to MSF | 28.7 | 91.3 | 1.1 | 0.6 |
| TBM Access Shaft/Staging Site | — | 36.1 | — | — |
| Ventura Boulevard Station | 15.3 | — | 1.0 | 0.3 |
| Metro G Line Sepulveda Station | 27.5 | 40.8 | 1.8 | 0.6 |
| Sherman Way Station | 12.1 | 53.2 | 0.6 | 0.3 |
| Metrolink Van Nuys Station | 22.6 | 143.6 | 0.7 | 0.4 |
| TPSS 11-STA 1260 | — | — | — | — |
| MSF | 7.5 | — | 12.4 | 5.9 |
| Precast Yard | 16.7 | 48.6 | 13.7 | 2.5 |
| ***Components In Proximity to Each Other*** | | | | |
| Segment 4 + Ventura Boulevard Station | 29.2 | 46.7 | 10.0 | 1.4 |
| Segment 6 + Van Nuys Station + TPSS 11 + MSF + Precast Yard | 75.4 | 283.4 | 27.9 | 9.3 |
| **Peak Daily Localized Emissions** | **75.4** | **283.4** | **27.9** | **9.3** |
| SCAQMD Localized Significance Threshold[d] | 114 | 786 | 7 | 4 |
| Exceeds Threshold? | No | No | **Yes** | **Yes** |
| ***Westside Construction Components***[c] | | | | |
| Segment 1 - Reach 1 Tunnel (Southern Terminus to UCLA Gateway Plaza Station) | 13.5 | 53.8 | 8.1 | 1.0 |
| Segment 4 - Reach 2 Tunnel (Sepulveda-Ventura Station to UCLA Gateway Plaza Station) | — | — | — | — |
| Metro E Line Station | 27.3 | 40.8 | 0.9 | 0.3 |
| Santa Monica Station | 15.4 | 80.4 | 2.6 | 0.4 |

| Construction Area | Daily Emissions (lbs/day)[a] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[b] | $PM_{2.5}$[b] |
| D Line Wilshire-Westwood Station | 17.8 | 47.1 | 4.6 | 0.8 |
| UCLA Gateway Plaza Station | 15.3 | 80.5 | 3.4 | 0.7 |
| ***Components In Proximity to Each Other*** | | | | |
| Not Applicable | — | — | — | — |
| **Peak Daily Localized Emissions** | 27.3 | 80.5 | 8.1 | 1.0 |
| SCAQMD Localized Significance Threshold[e] | 147 | 827 | 6 | 4 |
| Exceeds Threshold? | No | No | **Yes** | No |

Source: HTA, 2024

[a]Daily emissions for each construction component represent the contribution to the maximum daily localized emissions in the Valley or Westside.

[b]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

[c]Traction power substations (TPSS) listed would be located at standalone locations and not within the construction area of a proposed station, MSF, track alignment, or tunnel. Each of these standalone TPSSs had their own construction phasing in the construction emissions analysis. For TPSSs located within the construction area of a station, MSF, track alignment, or tunnel, their construction activity was accounted for in the overall construction activity for the component.

[d]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 7 East San Fernando Valley.

[e]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 2 Northwest Coastal LA County.

— = no data
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
SRA = Source Receptor Area

Short-term exposure to elevated $PM_{10}$ levels during construction can lead to significant health effects, particularly for sensitive populations such as children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions. These health impacts include respiratory irritation, which can manifest as coughing, wheezing, shortness of breath, and worsened asthma symptoms. Additionally, $PM_{10}$ exposure can exacerbate cardiovascular conditions, increasing heart rate variability, inflammation, and the risk of cardiac events. Acute respiratory infections, such as bronchitis, may also occur, particularly affecting vulnerable groups like children and older adults.

Exposure to $PM_{2.5}$ presents more significant health risks than $PM_{10}$, primarily due to its smaller particle size, which enables it to penetrate deeper into the lungs and enter the bloodstream. While both $PM_{10}$ and $PM_{2.5}$ contribute to respiratory irritation and cardiovascular issues, the smaller $PM_{2.5}$ particles can reach the alveoli (the tiny air sacs in the lungs) where they cause inflammation and long-term damage to lung tissue. In addition to respiratory impacts, $PM_{2.5}$ can enter the bloodstream, leading to systemic inflammation and an increased risk of cardiovascular diseases such as heart attacks, strokes, and arrhythmias. Long-term exposure to $PM_{2.5}$ has also been linked to cognitive decline, including Alzheimer's disease and other neurodegenerative conditions, because these particles can cross the blood-brain barrier. Moreover $PM_{2.5}$ is a significant risk factor for cancer, particularly lung cancer, due to

the toxic substances it often carries, including heavy metals and polycyclic aromatic hydrocarbons (PAH). Furthermore, prolonged exposure to $PM_{2.5}$ is associated with premature mortality, making it one of the leading environmental risk factors for early death from respiratory and cardiovascular diseases. In contrast, while $PM_{10}$ is still harmful, particularly for people with pre-existing conditions such as asthma, its impact is generally less severe because it remains in the upper respiratory tract and is not absorbed into the bloodstream. Thus, $PM_{2.5}$ poses a broader range of health risks, including more severe cardiovascular and neurological effects.

DPM, a component of $PM_{10}$ from diesel engines, poses additional risks. It is associated with respiratory irritation, acute inflammation, and oxidative stress. Prolonged or high-level exposure can elevate the risk of lung cancer and cardiovascular issues. These impacts are particularly pronounced near construction sites, where emissions are concentrated, and receptors in close proximity are exposed.

As discussed in Section 3.2.2.3, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 5 conservatively assumed all equipment would be diesel powered. The Metro Green Construction Policy contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

Although MM AQ-1, MM AQ-2, and MM AQ-3 prescribed below would reduce criteria pollutant emissions during construction, including localized $PM_{10}$ and $PM_{2.5}$ emissions, mitigation measures would not reduce Alternative 5 $PM_{10}$ and $PM_{2.5}$ emissions below SCAQMD localized significance thresholds; therefore, Alternative 5 construction emissions would potentially expose sensitive receptors to substantial concentrations and impacts would be significant and unavoidable.

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 5 construction emissions would exceed the $PM_{10}$ LST, Alternative 5 would cause or contribute to a violation of one or more health-protective CAAQS and NAAQS. Given that DPM emissions constitute a portion of localized $PM_{10}$ emissions, impacts related to localized DPM emissions during construction are also considered to be significant and unavoidable due to the following: (1) the elevated background carcinogenic risk, (2) the duration of construction activity, and (3) the proximity of sensitive receptors to DPM emissions sources.

***Alternative 6***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Significant and Unavoidable**

*Operational Impacts*

Localized Emissions Analysis

To assess the potential localized air quality impacts resulting from Alternative 6 on nearby sensitive receptors during operations, the daily on-site operations emissions generated at Alternative 6

components, primarily the MSF and all stations, were compared to SCAQMD's applicable operations LSTs. Alternative 6 localized emissions would be generated from area sources, such as landscaping equipment, use of consumer products, and reapplication of architectural coatings; and emergency generator maintenance testing. As discussed in Section 3.2.2.2, localized emissions from the MSF and all stations were summed together and compared to the operational LSTs. As shown in Table 3.2-36, Alternative 6 localized operational emissions would not exceed SCAQMD significance thresholds; therefore, impacts of local criteria pollutants would be less than significant.

**Table 3.2-36. Alternative 6: Unmitigated Localized Operations Criteria Pollutant Emissions**

| Source Category | Daily Emissions (lbs/day) | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[e] | $PM_{2.5}$[e] |
| Area – MSF[a] | <0.1 | 5 | <0.1 | <0.1 |
| Area – Stations[b] | <1 | 109 | <1 | <1 |
| Emergency Generators[c] | NA | NA | NA | NA |
| **Alternative 6 Total Localized Emissions** | **<1** | **114** | **<1** | **<1** |
| SCAQMD Localized Significance Thresholds[d] | 172 | 1,434 | 3 | 2 |
| Exceeds Threshold? | No | No | No | No |

Source: HTA, 2024

[a]Total on-site emissions from the MSF.

[b]Total on-site emissions from all stations.

[c]Emergency generators would not be required.

[d]Localized significance thresholds based on most stringent values for a 5-acre site with a 25-meter receptor distance in SRA 2 and SRA 7.

[e]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

CO = carbon monoxide
lbs/day = pounds per day
NA = not applicable
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
SRA = Source Receptor Area

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 6 operational emissions would not exceed the LSTs, Alternative 6 would not cause or contribute to a violation of any health-protective CAAQS and NAAQS.

Carbon Monoxide Hot Spots

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. CO hot spots at roadway intersections are typically found in areas with significant traffic congestion. CO is a public health concern because at high enough concentrations, it can cause health problems such as fatigue, headache, confusion, dizziness, and even

death. However, it should be noted that ambient concentrations of CO have declined dramatically in California because of existing controls and programs.

Currently, all areas of the state, including the Project Study Area, meet the state and federal CO standards and are designated attainment or maintenance. As part of SCAQMD's 2003 AQMP, which is the most recent AQMP that addresses CO concentrations, a revision to the CO Plan that was originally approved in 1992 was provided that included a CO hot spots analysis at four specified heavily traveled intersections in Los Angeles at the peak morning and afternoon time periods. These four intersection locations selected for CO modeling are considered to be worst-case intersections that would likely experience the highest CO concentrations. The CO hot spots analysis in the 2003 AQMP did not predict a violation of CO standards at the four intersections. Of these four intersections, the busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which was described as the most heavily congested intersection in Los Angeles County with an average daily traffic volume of approximately 100,000 vehicles per day. Based on the CO modeling, the 2003 AQMP estimated that the 1-hour and 8-hour concentrations at this intersection was 4.6 ppm and 3.4 ppm, respectively, which would not exceed the most stringent 1-hour CO standard of 20.0 ppm and 8-hour CO standards of 9 ppm (SCAQMD, 2003).

The *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) analyzed traffic volume data at intersections in the Project Study Area affected by Alternative 6 in Horizon Year 2045. The highest daily traffic volumes generated at an intersection within the vicinity of Alternative 6 would be an estimated cumulative total of 74,780 vehicles per day at the intersection of Wilshire Boulevard and Sepulveda Boulevard. Because the daily number of vehicles at this study intersection would not exceed 100,000 vehicles per day, it can be concluded that Alternative 6 would not exceed the most stringent 1-hour and 8-hour CO standards, and no detailed CO hot spots analysis for Alternative 6 would be required. Therefore, Alternative 6 would not result in impacts related to CO hot spots and would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded.

*Construction Impacts*

Localized Emissions Analysis

Using the conservative methodology described in Section 3.2.2.3 to assess the potential localized air quality impacts resulting from Alternative 6 on nearby receptors during construction, the daily on-site construction emissions from the Alternative 6 components (alignment, stations, TPSSs, MSF) were compared to SCAQMD's applicable construction LSTs. Alternative 6 localized emissions included exhaust emissions from off-road equipment and trucks, and fugitive dust from demolition, earth movement activities, and truck travel. As shown in Table 3.2-37, Alternative 6 localized construction emissions would exceed the $PM_{10}$ LST for construction activity in the Valley and Westside; therefore, Alternative 6 localized construction emissions would have adverse health risk implications (as discussed in Section 3.2.2.3 and Section 3.2.4.2) and would be considered to be significant.

**Table 3.2-37. Alternative 6: Unmitigated Localized Construction Criteria Pollutant Emissions**

| Construction Area | Daily Emissions (lbs/day)[a] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[b] | $PM_{2.5}$[b] |
| ***Valley Construction Components***[c] | | | | |
| Segment 2-Mountain | 13.6 | 22.9 | 4.8 | 0.7 |
| Segment 3-Valley | 24.8 | 34.3 | 6.4 | 0.8 |
| Van Nuys Metrolink Station | 18.3 | 36.5 | — | — |

| Construction Area | Daily Emissions (lbs/day)[a] | | | |
|---|---|---|---|---|
| | $NO_X$ | CO | $PM_{10}$[b] | $PM_{2.5}$[b] |
| Metro G Line Station | 18.4 | 36.5 | — | — |
| Ventura Boulevard Station | 18.3 | 36.5 | 4.1 | 0.6 |
| Vanowen Street/Van Nuys Boulevard TPSS | 1.6 | 1.8 | — | — |
| Magnolia TPSS | 1.6 | 1.8 | — | — |
| MSF | 17.7 | 33.2 | — | — |
| Precast Yard | — | — | 7.7 | 1.2 |
| ***Components In Proximity to Each Other*** | | | | |
| Van Nuys Metrolink Station + MSF + Precast Yard | 36.0 | 69.7 | 7.7 | 1.2 |
| Segment 2 + Ventura Boulevard Station | 32.0 | 59.4 | 8.9 | 1.2 |
| **Peak Daily Localized Emissions** | **36.0** | **69.7** | **8.9** | **1.2** |
| SCAQMD Localized Significance Threshold[d] | 114 | 786 | 7 | 4 |
| Exceeds Threshold? | No | No | **Yes** | No |
| ***Westside Construction Components***[c] | | | | |
| Segment 1-Westside | — | — | — | — |
| Segment 2-Mountain | — | — | — | — |
| UCLA Gateway Plaza Station | 25.1 | 60.0 | 1.9 | 0.7 |
| Wilshire /Metro D Line Station | 25.1 | 60.0 | 2.2 | 0.7 |
| Santa Monica Boulevard Station | 25.1 | 60.0 | 15.7 | 2.8 |
| Metro E Line Expo | 25.1 | 60.0 | 2.5 | 0.8 |
| ***Components In Proximity to Each Other*** | | | | |
| Not Applicable | NA | NA | NA | NA |
| **Peak Daily Localized Emissions** | 25.1 | 60.0 | 15.7 | 2.8 |
| SCAQMD Localized Significance Threshold[e] | 147 | 827 | 6 | 4 |
| Exceeds Threshold? | No | No | **Yes** | No |

Source: HTA, 2024

[a]Daily emissions for each construction component represent the contribution to the maximum daily localized emissions in the Valley or Westside.

[b]$PM_{10}$ and $PM_{2.5}$ emissions include exhaust and fugitive dust emissions.

[c]Traction power substations (TPSS) listed would be located at standalone locations and not within the construction area of a proposed station, MSF, track alignment, or tunnel. Each of these standalone TPSSs had their own construction phasing in the construction emissions analysis. For TPSSs located within the construction area of a station, MSF, track alignment, or tunnel, their construction activity was accounted for in the overall construction activity for the component.

[d]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 7 East San Fernando Valley.

[e]LST values are based on a 2-acre site with a 25-meter receptor distance in SRA 2 Northwest Coastal LA County.

— = no data
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance threshold
NA = not applicable
$NO_X$ = nitrogen oxides
$PM_{10}$ = respirable particulate matter of 10 microns or less
$PM_{2.5}$ = fine particulate matter of 2.5 microns or less
SCAQMD = South Coast Air Quality Management District
SRA = Source Receptor Area

Short-term exposure to elevated $PM_{10}$ levels during construction can lead to significant health effects, particularly for sensitive populations such as children, the elderly, and individuals with pre-existing respiratory or cardiovascular conditions. These health impacts include respiratory irritation, which can manifest as coughing, wheezing, shortness of breath, and worsened asthma symptoms. Additionally, $PM_{10}$ exposure can exacerbate cardiovascular conditions, increasing heart rate variability, inflammation, and the risk of cardiac events. Acute respiratory infections, such as bronchitis, may also occur, particularly affecting vulnerable groups like children and older adults.

DPM, a component of $PM_{10}$ from diesel engines, poses additional risks. It is associated with respiratory irritation, acute inflammation, and oxidative stress. Prolonged or high-level exposure can elevate the risk of lung cancer and cardiovascular issues. These impacts are particularly pronounced near construction sites, where emissions are concentrated, and receptors in close proximity are exposed.

As discussed in Section 3.2.2.3, the emissions analysis incorporated Tier 4 Final engines for off-road equipment greater than or equal to 50 horsepower, trucks with model years 2007 or newer, and included dust control measures to be implemented during each phase of construction, as required by SCAQMD Rule 403. The construction analysis for Alternative 6 conservatively assumed all equipment would be diesel powered. The Metro Green Construction Policy contains measures that aim to reduce construction emissions through utilization of hybrid drive off-road equipment and using electric power instead of diesel power.

Although MM AQ-1, MM AQ-2, and MM AQ-3 prescribed as follows would reduce criteria pollutant emissions during construction, including localized $PM_{10}$ emissions, mitigation measures would not reduce Alternative 6 $PM_{10}$ emissions below SCAQMD localized significance thresholds; therefore, Alternative 6 construction emissions would potentially expose sensitive receptors to substantial concentrations and impacts would be significant and unavoidable.

The SCAQMD's LSTs for each SRA represent the maximum emissions a project can emit without causing or contributing to a violation of any short-term NAAQS or CAAQS. As noted previously, the NAAQS and CAAQS are health-protective standards that define the maximum amount of ambient pollution that can be present without harming public health. Consequently, projects with emissions below the applicable LSTs would not be in violation of the NAAQS or CAAQS and, thus, EPA and CARB health-protective standards. Because Alternative 6 construction emissions would exceed the $PM_{10}$ LST, Alternative 6 would cause or contribute to a violation of one or more health-protective CAAQS and NAAQS. Given that DPM emissions constitute a portion of localized $PM_{10}$ emissions, impacts related to localized DPM emissions during construction are also considered to be significant and unavoidable due to the following: (1) the elevated background carcinogenic risk, (2) the duration of construction activity, and (3) the proximity of sensitive receptors to DPM emissions sources.

#### 3.2.5.4 Impact AQ-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

**Project Alternatives**

***No Project Alternative***

**Impact Statement**

**Operational Impact: No Impact**

**Construction Impact: Less than Significant**

*Operational Impacts*

The No Project Alternative includes modifications to Metro Line 761. Additional bus stops for Metro Line 761 may be constructed and operated to facilitate route changes under the No Project Alternative. No new track installation, stations, or MSF would be constructed nor operated under the No Project Alternative and no odors would be generated. The additional bus stops related to Metro Line 761 would not be a source of odors when operational. Overall, because project alternatives would not be operated under the No Project Alternative and odors would not be generated from operations, no impact would occur under the No Project Alternative.

*Construction Impacts*

The No Project Alternative includes modifications to Metro Line 761. The modifications would include the construction of additional bus stops for Metro Line 761 to facilitate route changes under the No Project Alternative. Additionally, the project would undergo project-specific environmental clearance and would implement project-specific mitigation measures, as necessary, to avoid or minimize potential odor impacts. Construction of additional bus stops along Metro Line 761 would result in minimal construction activity associated with installation of bus stop components (benches, enclosures, signage, etc.). These components could be installed in a few days and would not require substantial amounts of off-road equipment or truck hauling which are typical sources of odors related to engine exhaust. Due to the limited construction activity, construction related to the additional bus stops for Metro Line 761 would not be a significant source of odors. Overall, because project alternatives would not be constructed under the No Project Alternative and construction of additional bus stops along Metro Line 761 would result in minimal construction activity, the No Project Alternative would generate minimal odors and would not affect a substantial number of people. Therefore, odor impacts for the No Project Alternative would be less than significant.

***Alternative 1***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Less than Significant**

*Operational Impacts*

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment facilities, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. Alternative 1 is a transit project with a track alignment, e-Bus connection to UCLA, TPSSs, stations, monorail MSF, and e-Bus MSF that are not associated with any of the aforementioned land uses. Alternative 1 would include various trash receptacles associated with the stations and MSFs. On-site trash receptacles used by Alternative 1 would be covered and properly maintained to prevent adverse odors. With proper housekeeping practices, trash receptacles would be maintained in a manner that promotes odor control, and no adverse odor impacts are anticipated from the uses. Therefore, Alternative 1 operations would not create a significant level of objectionable odors affecting a substantial number of people, and impacts with respect to odors would be less than significant.

*Construction Impacts*

During construction of Alternative 1, exhaust from equipment, activities associated with the application of architectural coatings and other interior and exterior finishes, and paving activities may produce

discernible odors typical of most construction sites. Such odors would be, at worst, a temporary source of nuisance to adjacent uses, if at all, and would not affect a substantial number of people. Alternative 1 would use architectural coatings compliant with SCAQMD Rule 1113, which would limit the odors associated with off-gassing from those coatings. Additionally, material deliveries and heavy-duty haul truck trips could occasionally produce odors from diesel exhaust. These odors would not affect a substantial number of people because construction would be temporary, and construction-generated emissions dissipate rapidly with increasing distance from the source. Overall, odors associated with Alternative 1 construction would be temporary and intermittent in nature and would not create a significant level of objectionable odors affecting a substantial number of people.

***Alternative 3***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Less than Significant**

*Operational Impacts*

As described for Alternative 1, Alternative 3 is a transit project with a track alignment, TPSSs, stations, and an MSF that are not associated with any of the aforementioned land uses associated with odor complaints. Like Alternative 1, Alternative 3 would include various trash receptacles associated with the stations and MSFs that would be covered to prevent adverse odors. With proper housekeeping practices, trash receptacles would be maintained in a manner that promotes odor control, and no adverse odor impacts are anticipated from the uses. Therefore, Alternative 3 operations would not create a significant level of objectionable odors affecting a substantial number of people and impacts with respect to odors would be less than significant.

*Construction Impacts*

Alternative 3 would have the same potential odor producing construction activities as those described for Alternative 1. Like Alternative 1, odors produced by Alternative 3 construction would be temporary and intermittent in nature. As with Alternative 1, architectural coatings associated with Alternative 3 would be compliant with SCAQMD Rule 1113. Overall, odors associated with Alternative 3 construction would be temporary and intermittent in nature and would not create a significant level of objectionable odors affecting a substantial number of people.

***Alternative 4***

**Impact Statement**

**Construction Impact: Less than Significant**

**Operational Impact: Less than Significant**

*Operational Impacts*

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment facilities, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. Alternative 4 is a transit project with a track alignment, TPSSs, stations, and an MSF that are not associated with any of the aforementioned land uses. Alternative 4 would include various trash receptacles associated with the stations and MSF. On-site trash receptacles used by Alternative 4 would be covered and properly maintained to prevent adverse odors. With proper housekeeping practices, trash receptacles would be

maintained in a manner that promotes odor control, and no adverse odor impacts are anticipated from the uses. Therefore, Alternative 4 operations would not create a significant level of objectionable odors affecting a substantial number of people and impacts with respect to odors would be less than significant.

*Construction Impacts*

During construction of Alternative 4, exhaust from equipment, activities associated with the application of architectural coatings and other interior and exterior finishes, and paving activities may produce discernible odors typical of most construction sites. Such odors would be, at worst, a temporary source of nuisance to adjacent uses, if at all, and would not affect a substantial number of people. Alternative 4 would use architectural coatings compliant with SCAQMD Rule 1113, which would limit the odors associated with off-gassing from those coatings. Additionally, material deliveries and heavy-duty haul truck trips could occasionally produce odors from diesel exhaust. These odors would not affect a substantial number of people because construction would be temporary, and construction-generated emissions dissipate rapidly with increasing distance from the source. Overall, odors associated with Alternative 4 construction would be temporary and intermittent in nature and would not create a significant level of objectionable odors affecting a substantial number of people.

***Alternative 5***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Less than Significant**

*Operational Impacts*

As described for Alternative 4, Alternative 5 is a transit project with a track alignment, TPSSs, stations, and an MSF that are not associated with any of the aforementioned land uses associated with odor complaints. Like Alternative 4, Alternative 5 would include various trash receptacles associated with the stations and MSFs which would be covered to prevent adverse odors. With proper housekeeping practices, trash receptacles would be maintained in a manner that promotes odor control, and no adverse odor impacts are anticipated from the uses. Therefore, Alternative 5 operations would not create a significant level of objectionable odors affecting a substantial number of people, and impacts with respect to odors would be less than significant.

*Construction Impacts*

Alternative 5 would have the same potential odor producing construction activities as those described for Alternative 4. Like Alternative 4, odors produced by Alternative 5 construction would be temporary and intermittent in nature. As with Alternative 4, architectural coatings associated with Alternative 5 would be compliant with SCAQMD Rule 1113. Overall, odors associated with Alternative 5 construction would be temporary and intermittent in nature and would not create a significant level of objectionable odors affecting a substantial number of people.

***Alternative 6***

**Impact Statement**

**Operational Impact: Less than Significant**

**Construction Impact: Less than Significant**

*Operational Impacts*

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment facilities, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. Alternative 6 is a transit project with a track alignment, TPSSs, stations, and an MSF that are not associated with any of the aforementioned land uses. Alternative 6 would include various trash receptacles associated with the stations and MSFs. On-site trash receptacles used by Alternative 6 would be covered and properly maintained to prevent adverse odors. With proper housekeeping practices, trash receptacles would be maintained in a manner that promotes odor control, and no adverse odor impacts are anticipated from the uses. Therefore, Alternative 6 operations would not create a significant level of objectionable odors affecting a substantial number of people and impacts with respect to odors would be less than significant.

*Construction Impacts*

During construction of Alternative 6, exhaust from equipment, activities associated with the application of architectural coatings and other interior and exterior finishes, and paving activities may produce discernible odors typical of most construction sites. Such odors would be, at worst, a temporary source of nuisance to adjacent uses, if at all, and would not affect a substantial number of people. Alternative 6 would use architectural coatings compliant with SCAQMD Rule 1113, which would limit the odors associated with off-gassing from those coatings. Additionally, material deliveries and heavy-duty haul truck trips could occasionally produce odors from diesel exhaust. These odors would not affect a substantial number of people because construction would be temporary, and construction-generated emissions dissipate rapidly with increasing distance from the source. Overall, odors associated with Alternative 6 construction would be temporary and intermittent in nature and would not create a significant level of objectionable odors affecting a substantial number of people.

### 3.2.6 Mitigation Measures

Under each of the project alternatives, there would be potential construction impacts related to exceedances of South Coast Air Quality Management District regional emissions thresholds for nitrogen oxides and carbon monoxide, as well as localized emissions thresholds for respirable particulate matter of diameter less than 10 microns and (fine particulate matter of diameter less than 2.5 microns). Therefore, the following three mitigation measures were developed. Table 3.2-38 summarizes impacts before mitigation, applicable mitigation measures, and impacts after implementation of applicable mitigation measures for each project alternative.

***MM AQ-1:*** *The Project shall require zero emissions or near zero emissions on-road haul trucks such as heavy-duty trucks with natural gas engines that meet or exceed the California Air Resources Board's adopted optional nitrogen oxides emissions standard at 0.02 grams per brake horsepower hour (g/bhp-hr), if and when feasible. Operators shall maintain records of all trucks associated with project construction to document that each truck used meets these emission standards. These records shall be submitted monthly to Metro for review and shall be made available to regulatory agencies upon request. To ensure compliance, Metro or its designated representative shall conduct regular inspections of construction operations, including on-site verification of truck compliance. Inspections shall occur at least twice per month during active construction. Any contractor found to be using non-compliant trucks without prior*

*approval from Metro shall be subject to penalties, including suspension of operations until compliance is achieved.*

***MM AQ-2:*** *Construction contracts shall include language that compels contractors to implement all policies and emissions control measures as presented in Metro's Green Construction Policy.*

***MM AQ-3:*** *Construction contracts shall include language that compels contractors to implement all fugitive dust control measures as detailed in South Coast Air Quality Management District.*

### 3.2.7 Impacts After Mitigation

Although construction of the Project alternatives would require implementation of MM AQ-1, it is not technically feasible at the time of document preparation to verify the commercial availability of zero emissions (ZE) and near zero emissions (NZE) trucks to the extent needed to reduce construction-period $NO_X$, CO, $PM_{10}$, and $PM_{2.5}$ emissions below SCAQMD's regional and localized emissions thresholds. MM AQ-2 and MM AQ-3 simply enforce Metro and SCAQMD policies that are already required, independent of any additional prescribed mitigation. Given the current uncertainty around the availability of sufficient ZE and NZE trucks to reduce construction period impacts, impacts regarding construction period emissions would remain significant and unavoidable. Due to this uncertainty, all of the project alternatives would result in $NO_X$ and $PM_{10}$ construction emissions that cannot be reduced below SCAQMD's regional and localized emissions thresholds. In addition to significant and unavoidable construction-period $NO_X$ and $PM_{10}$ emissions, Alternatives 1 and 3 would also result in significant and unavoidable construction emissions of CO, and Alternatives 4 and 5 would result in significant and unavoidable construction emissions of CO and $PM_{2.5}$.

**Table 3.2-38. Summary of Mitigation Measures and Impacts Before and After Mitigation for the Project Alternatives**

| CEQA Impact Topic | | No Project | Alt 1 | Alt 3 | Alt 4 | Alt 5 | Alt 6 |
|---|---|---|---|---|---|---|---|
| *Operational* | | | | | | | |
| Impact AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan? | Impacts Before Mitigation | SU | LTS | LTS | LTS | LTS | LTS |
| | Applicable Mitigation | NA | NA | NA | NA | NA | NA |
| | Impacts After Mitigation | SU | LTS | LTS | LTS | LTS | LTS |
| Impact AQ-2: Would the 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? | Impacts Before Mitigation | LTS | LTS | LTS | LTS | LTS | LTS |
| | Applicable Mitigation | NA | NA | NA | NA | NA | NA |
| | Impacts After Mitigation | LTS | LTS | LTS | LTS | LTS | LTS |
| Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations? | Impacts Before Mitigation | NI | LTS | LTS | LTS | LTS | LTS |
| | Applicable Mitigation | NA | NA | NA | NA | NA | NA |
| | Impacts After Mitigation | NI | LTS | LTS | LTS | LTS | LTS |
| Impact AQ-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | Impacts Before Mitigation | NI | LTS | LTS | LTS | LTS | LTS |
| | Applicable Mitigation | NA | NA | NA | NA | NA | NA |
| | Impacts After Mitigation | NI | LTS | LTS | LTS | LTS | LTS |
| *Construction* | | | | | | | |
| Impact AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan? | Impacts Before Mitigation | LTS | LTS | LTS | LTS | LTS | LTS |
| | Applicable Mitigation | NA | NA | NA | NA | NA | NA |
| | Impacts After Mitigation | LTS | LTS | LTS | LTS | LTS | LTS |

| CEQA Impact Topic | | No Project | Alt 1 | Alt 3 | Alt 4 | Alt 5 | Alt 6 |
|---|---|---|---|---|---|---|---|
| Impact AQ-2: Would the 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? | Impacts Before Mitigation | LTS | SU | SU | SU | SU | SU |
| | Applicable Mitigation | NA | MM AQ-1 through MM AQ-3 | MM AQ-1 through MM AQ-3 | MM AQ-1 through MM AQ-3 | MM AQ-1 through MM AQ-3 | MM AQ-1 through MM AQ-3 |
| | Impacts After Mitigation | LTS | SU | SU | SU | SU | SU |
| Impact AQ-3: Would the project expose sensitive receptors to substantial pollutant concentrations? | Impacts Before Mitigation | LTS | SU | SU | SU | SU | SU |
| | Applicable Mitigation | NA | MM AQ-1 through MM AQ-3 | MM AQ-1 through MM AQ-3 | MM AQ-1 through MM AQ-3 | MM AQ-1 through MM AQ-3 | MM AQ-1 through MM AQ-3 |
| | Impacts After Mitigation | LTS | SU | SU | SU | SU | SU |
| Impact AQ-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | Impacts Before Mitigation | LTS | LTS | LTS | LTS | LTS | LTS |
| | Applicable Mitigation | NA | NA | NA | NA | NA | NA |
| | Impacts After Mitigation | LTS | LTS | LTS | LTS | LTS | LTS |

Source: HTA, 2024

Alt = Alternative
AQ = Air Quality
LTS = Less than Significant
MM = mitigation measure
NA = not applicable
NI = No Impact
SU = Significant and Unavoidable