

3.7 Greenhouse Gas Emissions

This section is based on the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report*, incorporated into this DEIR as Appendix D.

3.7.1 Regulatory and Policy Framework

Climate change refers to variations in average long-term meteorological conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and frequency and severity of extreme weather events. Historical records indicate that global climate fluctuations have occurred in the past due to natural phenomena; however, recent data increasingly suggests that the current global conditions are distinct from previous patterns and are influenced by anthropogenic (human-caused) greenhouse gas (GHG) emissions. GHGs are a class of pollutants that are generally understood to play a critical role in controlling atmospheric temperature near the Earth’s surface by allowing high-frequency shortwave solar radiation to enter the planet’s atmosphere and then subsequently trapping low-frequency infrared radiative energy that would otherwise emanate back out into space.

Some GHGs are more effective in trapping heat in the atmosphere than others. Carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) are the most ubiquitous GHGs. CO₂ is commonly used as the standard reference for characterizing the relative global warming potential (GWP) of other GHGs. The GWP value describes the relative magnitude of climate forcing effects of GHGs and is used to convert emissions into CO₂ equivalents (CO₂e). Table 3.7-1 presents the GWP values and atmospheric lifetimes of CO₂, CH₄, and N₂O, as well as other regulated GHGs emitted by human activities. For example, CH₄ is 25 times more potent than CO₂ over a 100-year period.

Table 3.7-1. Common Greenhouse Gases and Characteristics

Pollutant	Lifetime (Years) ^a	Global Warming Potential (20-Year)	Global Warming Potential (100-Year) ^b
Carbon Dioxide (CO ₂)	—	1	1
Methane (CH ₄)	12	21	25
Nitrous Oxide (N ₂ O)	114	310	298
Nitrogen Trifluoride (NF ₃)	740	Unknown	17,200
Sulfur Hexafluoride (SF ₆)	3,200	23,900	22,800
Perfluorocarbons (PFCs)	2,600-50,000	6,500-9,200	7,390-12,200
Hydrofluorocarbons (HFCs)	1-270	140-11,700	124-14,800

Source: CARB, 2023a

^aLifetime refers to the approximate amount of time it would take for the anthropogenic increment of an atmospheric pollutant concentration to return to its natural level as a result of either being converted to another chemical compound or being taken out of the atmosphere via a sink.

^bThe 20-year GWPs are based on the Intergovernmental Panel on Climate Change (IPCC) *Second Assessment Report* (IPCC, 1995) and the 100-year GWPs are based on the IPCC *Assessment Report 4* (AR4) (IPCC, 2007). The California Air Resources Board (CARB) uses AR4 GWPs for their GHG emissions inventories.

—= no data

Note:

The United States (U.S.) primarily uses the 100-year GWP as a measure of the relative impact of different GHGs. However, the scientific community has developed a number of other metrics that could be used for comparing one GHG to another. These metrics may differ based on timeframe, the climate endpoint measured, or the method of calculation. For example, the 20-year GWP is sometimes used as an alternative to the 100-year GWP. Similar to

how the 100-year GWP is based on the energy absorbed by a gas over 100 years, the 20-year GWP is based on the energy absorbed over 20 years. This 20-year GWP prioritizes gases with shorter lifetimes, because it does not consider impacts that happen more than 20 years after the emissions occur. Because all GWPs are calculated relative to CO₂, GWPs based on shorter timeframes will be higher for gases with lifetimes shorter than that of CO₂, and lower for gases with lifetimes longer than CO₂.

3.7.1.1 Federal

Clean Air Act

In *Massachusetts v. Environmental Protection Agency* (2007) 549 U.S. 497, the U.S. Supreme Court held in April 2007 that the U.S. Environmental Protection Agency (EPA) has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHG emissions. The court did not hold that EPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHG emissions cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHG emissions under Section 202(a) of the CAA (42 U.S. Code Section 7521). These findings included that GHG emissions threaten the public health and welfare of future generations, and motor vehicle engines contribute to air pollution, which poses an ongoing threat to public health and welfare.

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 includes several key provisions that will increase energy efficiency and the availability of renewable energy, which will reduce GHG emissions as a result. The Act facilitates the reduction of GHG emissions by increasing the supply of alternative fuel sources, revising standards affecting regional efficiency for heating and cooling products, phasing out old incandescent light bulbs, and improving fuel efficiency standards.

Heavy-Duty Vehicle Program

EPA's Heavy-Duty Vehicle Program was adopted on August 9, 2011 to establish the first fuel efficiency requirements for medium- and heavy-duty vehicles beginning with the model year 2014.

Federal Transit Administration Climate Change Adaptation Initiative

The Federal Transit Administration has implemented a Climate Change Adaptation Initiative program to investigate potential strategies for reducing climate impacts from transit. The program was established in 2014 and provided funding to conduct seven climate adaptation pilot studies to increase knowledge of how transit agencies can adapt to climate change, advance the state of the practice in adapting transit assets and operations to the impacts of climate change, and build strategic partnerships between transit agencies and climate adaptation experts. The approach of the pilot projects involved identifying climate hazards and potential climatic events, characterizing risks on transit projects and operations, developing initial adaptation strategies, and linking strategies to organizational structures.

Federal Highway Administration Carbon Reduction Program

Established by the passage of the 2021 Bipartisan Infrastructure Law, the Federal Highway Administration's Carbon Reduction Program provides funds for projects designed to reduce transportation emissions, defined as CO₂ emissions from on-road highway sources. Each state is required to develop a carbon reduction strategy no later than 2 years after enactment and update the strategy at least every 4 years. The state-level carbon reduction strategy support efforts to reduce transportation-related GHG emissions and quantify the total carbon emissions from production, transport, and use of materials used in the construction of transportation facilities.

3.7.1.2 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 2030). Additionally, the amendment lowers the operational threshold for low-use equipment and enhances reporting and recordkeeping requirements to improve compliance oversight.

The regulation, including the 2023 Amendment, supports California's broader climate goals by reducing GHG emissions from the construction and industrial sectors, promoting electrification, and improving air quality, particularly in disadvantaged communities near major construction activities. These provisions are relevant to the evaluation of GHG emissions and climate impacts in environmental review documents.

California Greenhouse Gas Reduction Targets

Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 set the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. EO S-3-05 calls for the Secretary of the California Environmental Protection Agency (CalEPA) to be responsible for coordination of state agencies and progress reporting.

In response to EO S-3-05, the Secretary of CalEPA created the Climate Action Team (CAT). The original mandate for the CAT was to develop proposed measures to meet the emission reduction targets set

forth in EO S-3-05. The CAT is responsible for preparing reports that summarize the state's progress in reducing GHG emissions. The most recent *Climate Action Team Report* was published in December 2010. The report discusses mitigation and adaptation strategies, state research programs, policy development, and future efforts (CalEPA, 2006).

Assembly Bill 32

In 2006, the California State Legislature adopted Assembly Bill (AB) 32—codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006—which focused on reducing GHG emissions in California to 1990 levels by 2020. AB 32 represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under AB 32, CARB has the primary responsibility for reducing GHG emissions. AB 32 required CARB to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

A specific requirement of AB 32 was to prepare a climate change scoping plan for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (HSC Section 38561 (h)). CARB developed an AB 32 *Climate Change Scoping Plan* (2008 Scoping Plan) that contained strategies to achieve the 2020 emissions cap (CARB, 2008a). The *2008 Scoping Plan* was approved in 2008 and contains a mix of recommended strategies to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives.

As required by AB 32, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 million metric tons of carbon dioxide equivalents (MMTCO_{2e}) using the GWP values from the IPCC *Second Assessment Report* (IPCC, 1995). CARB also projected the state's 2020 GHG emissions under No-Action-Taken conditions (that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions). CARB originally used an average of the state's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 MMTCO_{2e}.

The *First Update to the Climate Change Scoping Plan* (2014 First Update) was approved by CARB in May 2014 and built upon the *2008 Scoping Plan* with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit was 431 MMTCO_{2e}. CARB also updated the state's 2020 CAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were adopted for motor vehicles and renewable energy. CARB projected statewide 2020 emissions using the GWP values from the IPCC AR4 and estimated them to be 509.4 MMTCO_{2e}.¹

Executive Order B-16-2012

On March 23, 2012, then-Governor Brown issued EO B-16-2012, which established benchmarks for reducing transportation-related GHG emissions. It requires agencies to implement the Plug-in Electric Vehicle Collaborative and California Fuel Cell Partnership by 2015 and sets forth targets specific to the transportation section, including the goal of reducing transportation-related GHG emissions to 80 percent less than 1990 levels by 2050.

¹ Refer to Table 3.7-2 for actual state-wide GHG emissions for years 2013 through 2021.

Executive Order B-30-15

On April 29, 2015, then-Governor Brown issued EO B-30-15, which established a medium-term goal for 2030 of reducing GHG emissions by 40 percent below 1990 levels and required CARB to update its *2014 Scoping Plan* to identify measures to meet the 2030 target. The EO supports EO S-03-05, described above, but is currently only binding on state agencies. The adoption of Senate Bill (SB) 32 formally established a target for 2030.

Senate Bill 32

In 2016, the California State Legislature adopted SB 32 — which adds Section 38566 to the HSC and requires a commitment to reducing statewide GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030 — and its companion, AB 197, which provides additional direction for developing the *2017 Climate Change Scoping Plan (2017 Scoping Plan)* (CARB, 2017). SB 32 and AB 197 amend AB 32 and establish a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and include provisions to ensure the benefits of state climate policies reach disadvantaged communities.

In response to the 2030 GHG reduction target, CARB adopted the *2017 Scoping Plan* at a public meeting held in December 2017 (CARB, 2017). The *2017 Scoping Plan* outlined the strategies that the state would implement to achieve the 2030 GHG reduction target. The strategies included building upon the existing Cap-and-Trade Regulation² and low-carbon fuel standard (LCFS), improving emissions standards, and increasing renewable energy.

Assembly Bill 1279

AB 1279 was adopted on September 16, 2022, and requires the state to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions. Additionally, AB 1279 requires California to reduce statewide GHG emissions by 85 percent compared to 1990 levels by 2045. The framework for achieving these goals is outlined in the latest update to California's GHG scoping plan, the *2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan)* (CARB, 2022). The *2022 Scoping Plan* builds on prior efforts in reducing GHG emissions from all sectors and was the first of its kind to include “carbon neutrality as a science-based guide and touchstone for California’s climate work.” To support the carbon neutrality goal, the *2022 Scoping Plan* analyzed natural and working lands, such as forests, shrublands, croplands, and wetlands, and how these lands will play an important role in reducing GHG emissions from hard-to-abate industries such as cement, internal combustion vehicles, and refrigerants. Development of clean energy production and distribution are critical in having a decarbonized economy. The energy transition to achieve a decarbonized economy will require adding four times the current amount of solar and wind generation, and 1,700 times the current hydrogen supply by 2045. Developing clean energy and fuels is critical to reducing GHG emissions from the transportation sector and is necessary to support long-term GHG reductions. Overall, the *2022 Scoping Plan* has an ambitious and aggressive approach to reduce GHG emissions by 85 percent compared to 1990 levels by 2045 and reduce demand for liquid petroleum and total fossil fuel by 94 percent and 86 percent respectively, by 2045 relative to 2022 (CARB, 2022).

² “The Cap-and-Trade Program Regulation establishes a declining limit on major sources of GHG emissions. CARB creates allowances equal to the total amount of permissible emissions (i.e., the “cap”). One allowance equals 1 metric ton of carbon dioxide equivalent emissions (using the 100-year global warming potential). Each year, fewer allowances are created and the annual cap declines. An increasing annual auction reserve (or floor) price for allowances and the reduction in annual allowances creates a steady and sustained carbon price signal to prompt action to reduce GHG emissions.” Source: CARB, 2024. arb.ca.gov/our-work/programs/cap-and-trade-program/about. Accessed July 2, 2024.

Assembly Bill 1346

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 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.

Renewable Energy Standards/Renewable Portfolio Standards

Senate Bill 1078 and Senate Bill 107

SB 1078 (2002) and SB 107 (2006) created the Renewable Energy Standard, which required electric utility companies to increase procurements from eligible renewable energy resources by at least 1 percent of their retail sales annually until reaching 20 percent by 2010. SB 2 (1X) (2011) requires a Renewables Portfolio Standard (RPS), functionally the same thing as the Renewable Energy Standard, of 33 percent by 2020. In 2013, the statewide average for the three largest electrical suppliers (Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric) was 22.7 percent. As noted below, SB 350 increased the renewable requirement to 50 percent for 2030.

Senate Bill 1 and Senate Bill 1017 (Million Solar Roofs)

SB 1 and SB 1017, enacted in August 2006, set a goal to install 3,000 megawatts of new solar capacity by 2017. The state reached its one million solar roofs milestone in 2019.

Assembly Bill 811

AB 811, enacted on July 21, 2008, authorizes California cities and counties to designate districts within which willing property owners may enter into contractual assessments to finance the installation of renewable energy generation and energy efficiency improvements that are permanently fixed to the property.

Senate Bill 350

SB 350, also known as the Clean Energy and Pollution Reduction Act of 2015, was approved in 2015 and includes key provisions to require the following by 2030: (1) an RPS of 50 percent and (2) a doubling of energy efficiency for existing buildings.

Senate Bill 100

SB 100, adopted in August 2018, established a state goal of 100 percent clean electricity by 2045 and advances the RPS to 50 percent by 2025 and 60 percent by 2030.

Senate Bill 1020

SB 1020 was adopted on September 16, 2022 and is a revision to SB 100 requiring eligible renewable energy resources and zero-carbon resources to supply 90 percent of all retail electricity sales to California end-use customers by December 31, 2035, 95 percent by 2040, and 100 percent by 2045; and 100 percent of electricity procured to serve all state agencies by December 31, 2035.

Advanced Clean Cars

Assembly Bill 1493 (Pavley I)

AB 1493 amended the Clean Car Standards (Chapter 200, Statutes of 2002), also known as the “Pavley I” regulations, which required reductions in GHG emissions in new passenger vehicles from 2009 through 2016. The Clean Car Standards required CARB to develop and adopt standards for vehicle manufacturers to reduce GHG emissions coming from passenger vehicles and light-duty trucks (LDT) at a “maximum feasible and cost-effective reduction” by January 1, 2005. In January 2012, CARB adopted the Advanced Clean Cars I program to extend AB 1493 through model years 2017 to 2025 (also known as “Pavley II”). This program promoted all types of clean fuel technologies such as plug-in hybrids, battery electric vehicles, compressed natural gas vehicles, and hydrogen powered vehicles while reducing smog and saving consumers’ money in fuel costs. Most recently in 2022, CARB adopted the Advanced Clean Cars II regulations, which impose the next level of emissions standards for passenger vehicles and LDT for model years 2026 through 2035. These regulations require all new passenger cars, trucks, and sport utility vehicles sold in California to be zero-emission vehicles by 2035.

Executive Order S-1-07

On January 18, 2007, EO S-1-07 was issued requiring a reduction of at least 10 percent in the carbon intensity of California’s transportation fuels by 2020. The LCFS was identified by CARB as a discrete early action item in the *2008 Scoping Plan* developed from AB 32 (CARB, 2008a).

Land Use and Transportation Planning

Senate Bill 375

Adopted on September 30, 2008, SB 375 established mechanisms for the development of regional targets for reducing passenger-vehicle GHG emissions. SB 375 required CARB to consult with the state’s Metropolitan Planning Organizations (MPO) to set regional GHG reduction targets for the passenger-vehicle and light-duty truck sectors for 2020 and 2035. In February 2011, CARB adopted the GHG emissions reduction targets of 8 percent by 2020 and 13 percent by 2035 relative to 2005 GHG emissions for the Southern California Association of Governments (SCAG). Beginning in October 2018, the 2035 target was revised to 19 percent below 2005 levels.

Under SB 375, the reduction target must be incorporated within that region’s Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy (SCS). Certain transportation planning and programming activities would then need to be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plan) are not required to be consistent with either the RTP or SCS.

Senate Bill 743

SB 743, adopted September 27, 2013, encourages land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT), which contribute to GHG emissions, as required by AB 32. SB 743 requires that the Governor’s Office of Planning and Research (OPR) revise California Environmental Quality Act (CEQA) Guidelines to establish criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses.

California Green Building Standards Code

The California Building Standards Commission adopted the statewide mandatory California Green Building Standards Code (CALGreen) Part 11 of Title 24, California Code of Regulations, which identifies mandatory building measures and voluntary measures that may be incorporated into the design of buildings to improve building energy savings. These measures would be applied to planning, designing, operating, constructing, and occupying newly constructed buildings or structures.

California Energy Code

The California Building Standards Commission adopted the statewide mandatory California Energy Code, Part 6 of Title 24, California Code of Regulations. Title 24 applies to all newly constructed nonresidential buildings and regulates minimum energy efficiencies for cooling, heating, ventilation, water heating, and lighting. Title 24, Part 6 contains requirements for cool roofs, exterior lighting, bicycle parking, and electric vehicle charging. In addition, it requires mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for non-residential buildings larger than 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies.

3.7.1.3 Regional

Southern California Association of Governments

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 an MPO. The MPO for the Project Study Area is SCAG, which also serves as the Regional Transportation Planning Agency. The SCAG region encompasses six counties—Imperial, Los Angeles, Orange, Riverside, Bernardino, and Ventura—and 191 cities in an area covering more than 38,000 square miles. The Project corridor 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 RTP (23 U.S.C. Section 134 et seq.) every 4 years. California Senate Bill (SB) 375, codified in 2008 in Government Code Section 65080 (b)(2)(B), also requires that the RTP include an SCS that outlines growth strategies for land use and transportation and helps reduce the State's GHG 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 the 2024-2050 RTP/SCS as the "Sepulveda Pass Transit Corridor Phase 2," RTP ID 1160001.

The 2024-2050 RTP/SCS is an update to SCAG's 2020–2045 RTP/SCS (SCAG, 2020). 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, 2020). The Core Vision was originally developed in the 2008 and 2012 RTP documents and the 2024-2050 RTP/SCS provides the most comprehensive RTP/SCS to date that builds upon previous work. SCAG's regional transportation and land use planning initiatives are closely intertwined with improving regional air quality.

The 2024-2050 RTP/SCS builds upon the goals and strategies developed in 2020-2045 RTP/SCS. The 2024-2050 RTP/SCS goals and visions fall into the following four primary categories:

- Mobility—Build and maintain an integrated multimodal transportation network
- Communities—Develop, connect, and sustain livable and thriving communities
- Environment—Create a healthy region for the people of today and tomorrow
- Economy—Support a sustainable, efficient, and productive regional economic environment that provides opportunities for all people in the region

For each of these categories, regional planning policies were developed to provide guidance for integrating land use and transportation planning to meet the goals of the 2024-2050 RTP/SCS. Within the environment category, regional planning policies for air quality included (1) reduce hazardous air pollutants and GHG emissions and improve air quality throughout the region through planning and implementation efforts, (2) support investments that reduce hazardous air pollutants and GHG emissions, and (3) reduce the exposure and impacts of emissions and pollutants and promote local and regional efforts that improve air quality for vulnerable populations, including Priority Equity Communities and the AB 617 Communities (SCAG, 2024).

Performance of the 2024-2050 RTP/SCS in 2050 is measured by comparing a “Plan” vs. a “No Plan,” whereby the No Plan represents 2050 conditions 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 and GHG emissions.

2024-2050 RTP/SCS optimizes opportunities for shorter trip distances and drivers to switch to electric vehicles by directing growth to areas with high quality transit. Development in these areas will be guided by strategies to reduce GHG emissions by focusing growth near destinations and mobility options, promoting diverse housing choice, leveraging technology innovations, supporting implementation of sustainability policies, and promoting a green region. For the SCAG region, CARB set a GHG reduction target of goals for automobiles and LDT at 8 percent below 2005 per capita levels by 2020, and 19 percent below 2005 per capita levels by 2035 (SCAG, 2024). SCAG met the 2020 target and the 2024-2050 RTP/SCS outlines a suite of strategies to meet the 2035 target.

South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) published its first formal action to address GHG emissions in 1991, titled “Policy on Global Warming and Stratospheric Ozone Depletion.” The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the *Air Quality Management Plan*. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy. Years later in 2008, the SCAQMD Climate Change Policy was issued, which outlined various approaches the agency would explore to pursue opportunities to (1) reduce pollutant emissions and (2) maximize synergistic effects of strategies that reduce emissions across multiple categories of pollutants (SCAQMD, 2008a).

Subsequently, SCAQMD’s 2011 Air Quality-Related Energy Policy addressed the correlated intersection of control strategies related to improving air quality, reducing GHG emissions, and enhancing energy efficiency. The 2011 policy advocated for concurrent benefits of GHG strategies that reduce criteria

pollutant and air toxic emissions while recognizing that climate change can in itself exacerbate ozone and particulate matter (PM) pollution.

SCAQMD released a draft guidance regarding interim CEQA GHG significance thresholds. In its October 2008 document, the SCAQMD proposed the use of a percent emission reduction target (e.g., 30 percent) to determine significance for commercial/residential projects that emit greater than 3,000 metric tons of carbon dioxide equivalents (MTCO₂e) per year. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for stationary source/industrial projects where the SCAQMD is the lead agency (SCAQMD, 2008b). However, SCAQMD has yet to adopt a GHG significance threshold for land use development or transportation projects and has formed a GHG CEQA Significance Threshold Working Group to further evaluate potential GHG significance thresholds.

The GHG CEQA Significance Threshold Working Group is tasked with providing guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group included government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing CEQA GHG significance thresholds. The working group discussed multiple methodologies for determining project significance. These methodologies included categorical exemptions, consistency with regional GHG budgets in approved plans, a numerical threshold, performance standards, and emissions offsets. The GHG CEQA Significance Threshold Working Group has not convened since 2008, and no quantitative thresholds were ever officially adopted for projects that are not under the purview of SCAQMD as the lead agency.

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 7:** A fossil fuel-free LA County
 - By 2025 achieve a 25 percent reduction in total GHG emissions and add 3 gigawatts (GW) of new distributed energy
 - By 2035 achieve a 50 percent reduction in total GHG emissions and add 6 GW of new distributed energy resources
 - By 2045, add 10 GW of new distributed energy resources
 - By 2050, achieve carbon neutrality
- **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

Metro Countywide Sustainability Planning Program

Over the past 15 years, Metro has developed policies directed toward controlling GHG emissions, enhancing energy efficiency, and adapting to the effects of climate change. In 2011, Metro published its *Energy Conservation and Management Plan (ECMP)* (Metro, 2011b) to serve as 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, 2007), 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.

Following publication of the ECMP, Metro began preparing 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, 2019a), which analyzes the sustainability and environmental performance of Metro's operational activities during the 2018 calendar year. Relative to 2017, Metro operations in 2018 reduced GHG emissions by 13 percent through vehicle electrification and ongoing transition to low carbon fuel sources and reduced total energy consumption by 7.9 percent through reduced vehicle fuel consumption by buses and support vehicles. 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 the *Moving Beyond Sustainability – Strategic Plan 2020* (Metro, 2020a) (referred to as "Moving Beyond Sustainability") as discussed herein.

In addition to the annual energy and resource reports, Metro expanded its sustainability planning program through the following initiatives: the Green Construction Policy (Metro, 2011a), 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, 2019b), 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* updates and consolidates the principles established in Metro's prior sustainability planning documents and outlines a comprehensive sustainability strategy through 2030, along with identifying other long-term goals.

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. By recognizing the intersectionality of these various focus areas, Metro designed a robust, holistic plan to guide the expansion and enhancement of its transit services into the future. Targets of the plan specifically related to GHG emissions include the following:

- Reduce potable water use by 22 percent from the 2030 Business-as-Usual scenario.

- Reduce annual operational solid waste disposal 24 percent from 2030 Business-As-Usual scenario³.
- Achieve 50 percent landfill diversion rate for operational waste.
- Achieve 85 percent construction landfill diversion rate.
- Achieve Leadership in Energy and Environmental Design (LEED) Silver certification for all new facilities over 10,000 square feet and achieve Envision certification where LEED is not applicable.
- Design and build 100 percent of capital projects to CALGreen Tier 2 standards.
- Reduce energy consumption by 17 percent at facilities from the 2030 Business-as-Usual Scenario.
- Increase on-site renewable energy generation to 7.5 megawatts.
- Displace 903,000 MTCO₂e annually.
- Reduce total GHG emissions by 79 percent from 2017 baseline.
- Implement the flexible adaptation pathways concept to incorporate climate adaptation into planning, procurement, asset management, and operations by 2025.

Los Angeles County Metropolitan Transportation Authority Green Construction Policy

Construction contractors are required to comply with the provisions of the Los Angeles County Metropolitan Transportation Authority (Metro) Green Construction Policy, which was adopted in 2011 to reduce harmful air pollutant emissions (particularly PM and nitrogen oxides [NO_x]) during Metro construction projects (Metro, 2011a). Provisions of the Green Construction Policy also contribute to minimizing GHG emissions during construction activities. 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. The strategies are listed below.

- 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 PM 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 PM emissions reductions.
- Best management practices shall include, at a minimum the following:

³ The 2030 Business-As-Usual scenario was developed through a review of historical organizational practices, utility consumption, waste and emissions generation and planned agency growth. The BAU accounts for planned construction and improvements.

- Use of diesel particulate traps or best available control technology, as feasible.
- 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 miles per hour.
- In 2018, this policy was revised requiring contractors to use renewable diesel for all diesel engines and thus reducing the negative health impacts from diesel exhaust and reduce GHG emissions.

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.

3.7.1.4 Local

City of Los Angeles GreenLA

The City of Los Angeles Department of City Planning (DCP) issued *GreenLA: An Action Plan to Lead the Nation in Fighting Global Warming* (GreenLA) as a Climate Action Plan to provide guidance in promoting sustainable development to reduce citywide GHG emissions (DCP, 2007). The objective of GreenLA is to reduce GHG emissions 35 percent below 1990 levels by 2030. The measures would reduce emissions directly from municipal facilities and operations and create a framework to address citywide GHG emissions. Focus areas include energy, water, transportation, land use, waste, port, airport, and smart planning practices.

In order to provide detailed information on action items discussed in GreenLA, the city published an implementation document titled *ClimateLA* (DCP, 2008). *ClimateLA* presents the existing GHG inventory for the city, describes enforceable GHG reduction requirements, provides mechanisms to monitor and evaluate progress, and includes mechanisms that allow the plan to be revised in order to meet targets. By 2030, the plan aims to reduce GHG emissions by 35 percent from 1990 levels, which were estimated

to be approximately 54.1 MMTCO₂e. Therefore, the city will need to lower annual GHG emissions to approximately 35.1 MMTCO₂e by 2030.

City of Los Angeles Sustainable City pLAN

Under Mayor Eric Garcetti the City of Los Angeles released its first-ever *Sustainable City pLAN* (the 2015 pLAN) on April 8, 2015 (City of Los Angeles Mayor's Office, 2015). Recognizing the risks posed by climate change, the 2015 pLAN set time-bound outcomes on climate action, most notably to reduce GHG emissions by 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050, all against a 1990 baseline. Through the completion and verification of the GHG inventory update, the city concluded the following:

- The city accounted for approximately 36.2 MMTCO₂e in 1990.
- The city's most recent inventory shows that emissions fell to 29 MMTCO₂e in 2013.
- Los Angeles' emissions were 20 percent below the 1990 baseline as of 2013, putting Los Angeles nearly halfway to the 2025 pLAN reduction target of 45 percent.

In addition, the 20 percent reduction exceeds the 15 percent statewide goal listed in the 2014 First Update (CARB, 2014).

On April 29, 2019, Mayor Garcetti released *LA's Green New Deal, Sustainable City pLAN* (the pLAN) (City of Los Angeles Mayor's Office, 2019), which is the First 4-Year Update to the 2015 pLAN (2019 updates to the pLAN). The 2019 updates to the pLAN augments, expounds, and elaborates in even more detail the city's vision for a sustainable future and assigns accelerated GHG emission reduction targets and new aggressive goals to place the city on the path to a zero-carbon future by 2050. The 2019 Green New Deal updated to the pLAN accelerate the following targets:

- Supply 55 percent renewable energy by 2025, 80 percent by 2036, and 100 percent by 2045 (Los Angeles Department of Water and Power (LADWP)).
- Source 70 percent of the city's water locally by 2035 and capture 150,000 acre-feet per year of stormwater by 2035.
- Reduce building energy use per square feet for all types of buildings: 22 percent by 2025, 34 percent by 2035, and 44 percent by 2050.
- Reduce VMT per capita by at least 13 percent by 2025, 39 percent by 2035, and 45 percent by 2050.
- Ensure 57 percent of new housing units are built within 1,500 feet of transit by 2025 and 75 percent by 2035.
- Increase the percentage of zero-emission vehicles in the city to 25 percent by 2025, 80 percent by 2035, and 100 percent by 2050.
- Create 300,000 green jobs by 2035 and 400,000 by 2050.
- Convert all city-fleet vehicles to zero-emission vehicles where technically feasible by 2028.
- Reduce municipal GHG emissions 55 percent by 2025 and 65 percent by 2035 from 2008 baseline levels, reaching carbon neutral by 2045.

Overall, the updated plan calls for reducing GHGs to 50 percent below 1990 levels by 2025 and 73 percent below 1990 levels by 2035 and becoming carbon neutral by 2050. By following the 2019

updates to the *Sustainable City pLAN*, the city is expected to reduce an additional 30 percent in GHG emissions above and beyond the 2015 pLAN.

City of Los Angeles General Plan – Mobility Plan 2035

Mobility Plan 2035 is an element of the *City of Los Angeles' General Plan* and was adopted in 2016. It provides a policy foundation for achieving a transportation system that balances the needs of all road users by incorporating “complete streets” principles to guide future modifications to the regional network (DCP, 2016). Key policy initiatives related to GHG emissions include establishing new complete street standards that provide safe and efficient active transportation opportunities and targeting GHG emissions through a more sustainable transportation system. Mobility Plan 2035 emphasizes the efficacy of multimodal street design in reducing GHG emissions through encouraging the use of transit and active transportation, which decreases regional dependence on passenger vehicles.

City of Los Angeles Green Building Code

On December 11, 2019, the Los Angeles City Council approved Ordinance No. 186488, which amended Chapter IX of the Los Angeles Municipal Code (LAMC), referred to as the Los Angeles Green Building Code, by adding the new Article 9 to incorporate various provisions of the 2019 CALGreen Code. Projects filed on or after January 1, 2020, must comply with the provisions of the Los Angeles Green Building Code. Specific mandatory requirements and elective measures are provided for low-rise residential buildings, non-residential and high-rise residential buildings, and additions and alterations to non-residential and high-rise residential buildings.

City of Los Angeles All-Electric Building Ordinance

Chapter IX of the LAMC also requires that all new buildings be all-electric buildings, with some exceptions. Equipment typically powered by natural gas such as space heating, water heating, cooking appliances and clothes drying would need to be powered by electricity for new construction. Exceptions are made for commercial restaurants, laboratories, and research and development uses. The LAMC is consistent with 2022 Title 24 goals, which encourage all-electric development and requires new residential uses to be electric-ready (i.e., wiring installed for all-electric appliances). Buildings in Los Angeles account for 43 percent of GHG emissions — more than any other sector in the city. These LAMC requirements ensure that new buildings being constructed are built to leverage the increasingly clean electric grid, which is anticipated to be carbon-free by 2035, rather than relying on fossil fuels.

3.7.2 Methodology

This section describes the methodology used to estimate GHG emissions from temporary construction activities and long-term operations of each project alternative. The analysis for each project alternative quantified emissions for CO₂, CH₄, and N₂O. CO₂e emissions were estimated using the IPCC AR4 (IPCC, 2007) GWP for each of these GHGs, which is consistent with the CARB’s approach for its annual GHG emission inventories.

3.7.2.1 Construction

Construction of the project alternatives would generate emissions of CO₂, CH₄, and N₂O associated with off-road equipment; mobile sources, including worker vehicles, vendor trucks, and haul trucks; and electricity consumption from electric powered equipment and on-site portable offices. Construction GHG emissions were estimated using a spreadsheet approach based on emission factors and methodologies from the California Emissions Estimator Model (CalEEMod), version 2022.1.1.24 (CAPCOA, 2022); CARB’s Emission FACTors model (EMFAC2021), version 1.0.2 (CARB, 2021); and EPA’s

Compilation of Air Pollutant Emission Factors (AP-42) (EPA, 2021). 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 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 project alternative-specific construction data (e.g., schedule, equipment quantities, truck volumes) provided by developers of each of the alternatives. Construction data for LA SkyRail Express alternatives (Alternatives 1 and 3) and Sepulveda Transit Corridor Partners (STCP) alternatives (Alternatives 4 and 5) went through a collaborative process with HTA Partners (HTA), the environmental team, to develop reasonable construction assumptions based on current phases of design plans. Where project alternative-specific data was not available, reasonable assumptions based on similar infrastructure/transit projects and default values from CalEEMod were used 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 GHG analysis of each project alternative were also used in the air quality analysis.

Construction GHG emissions from project alternatives would be temporary and would not generate GHG emissions upon completion of construction. Because GHG emissions are cumulative and build up over time, the temporary nature of construction emissions makes it unlikely that these emissions would interfere with long-term GHG emissions reduction targets established by state, regional, and local planning documentation. The total GHG emissions generated over the lifetime of each project alternative's construction activity was estimated and amortized over the lifetime of project alternatives in accordance with SCAQMD guidance (SCAQMD, 2008b). Based on SCAQMD's guidance, 30 years was considered the lifetime of project alternatives. Although service life of infrastructure projects such as the Project are typically longer than 30 years, using 30 years would result in a conservative estimate of construction GHG emissions. Consistent with SCAQMD guidance, the amortized construction GHG emissions for each project alternative were added to the annual operational GHG emissions for each project alternative.

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. Total GHG emissions for a piece of equipment were based on the daily emissions multiplied by the total days of usage during the construction period. Detailed emissions calculations for off-road equipment from each project alternative are provided in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Mobile Sources

Mobile source GHG emissions would be generated from worker vehicles, vendor trucks, and haul trucks commuting to and from the construction worksites throughout each project alternative's construction period. Mobile sources would generate GHG emissions from combustion of gasoline and diesel fuels. Consistent with CalEEMod methodology, the worker-vehicle fleet mix consisted of 25 percent light-duty autos (LDA), 50 percent LDT type 1 (LDT1), and 25 percent LDT 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 methodology, 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.

GHG emissions would be generated as a result of fuel combustion of gasoline and diesel during vehicle travel, as well as engine starting and idling. Daily exhaust emissions were estimated based on EMFAC2021 emissions factors for CO₂, CH₄, and N₂O from the running (i.e., traveling), starting, and idling processes combined with the daily vehicle activity data which included the daily number of trips and trip lengths. Total GHG emissions from mobile sources were based on the daily emissions multiplied by the total days of usage during the construction period.

On-site emissions would be generated from vendor trucks and haul trucks visiting worksites to deliver or pick-up materials and equipment. Emissions factors for on-site truck travel would be based on a speed of 15 miles per hour. A trip length of 0.10 mile was assumed for all on-site truck trips. On-site trip lengths (in miles) varied depending on the size of the worksite.

Off-site emissions would be generated from worker vehicles, vendor trucks, and haul trucks commuting to and from construction worksites. Emission factors for workers vehicles, vendor trucks, and haul trucks would be based on aggregate vehicle speeds and aggregate model years, except for vendor and haul trucks which would have model years of 2007 or newer to be consistent with Metro's Green Construction Policy (Metro, 2011a). Off-site trip lengths varied depending on the construction component. Detailed emissions calculations for mobile sources for each project alternative are provided in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Electricity Consumption

Construction activities would also generate GHG emissions from electricity consumption. For project alternatives that include underground segments, an electric powered tunnel boring machine (TBM) would be utilized to construct the tunnel. Electricity would also be consumed by on-site portable offices for each project alternative. For each project alternative, it was assumed that three portable offices would be utilized throughout the duration of the construction period. Specific sizes of portable offices

are currently unknown, so it was assumed that each portable office would have an area of 720 square feet, which is on the higher end for portable office trailers.

Electricity for the Project Study Area is provided by the LADWP. LADWP has CO₂e intensity factors, measured in pounds per megawatt-hour (lb/MWh). The CO₂e intensity factor represents the amount of CO₂e emissions produced per MWh of electricity generated.

Based on LADWP's 2022 power mix, its CO₂e intensity factor was 567 lb/MWh (LADWP, 2022a). Although construction of the Project is expected to occur several years after 2022, using LADWP's 2022 intensity factor is a conservative approach as it would result in higher GHG estimates because future intensity factors are likely to be lower as LADWP continues to increase the amount of renewable energy sources in its power mix to meet state RPS goals.

GHG emissions from TBM activity were estimated by multiplying the TBM's total electricity consumption in megawatt-hours (MWh) by LADWP's CO₂e intensity factor. TBM electricity consumption estimates were based on the power requirements of the TBMs and total usage hours throughout the construction period. Some project alternatives would utilize multiple TBMs for single bore and dual bore tunneling activities. GHG emissions from electricity consumption for the portable offices were estimated in CalEEMod where the offices were categorized as a "General Office Building" land use. Detailed emissions calculations for TBM and on-site portable office electricity consumption for project alternatives are provided in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

3.7.2.2 Operations

Operations of the project alternatives would generate emissions of CO₂, CH₄, and N₂O associated with area sources, electricity consumption, mobile sources, water consumption and wastewater conveyance, waste generation, and in some cases, emergency generators. The emissions modeling for each project alternative relied on project alternative-specific operational and design data. Where project-specific information was not available, reasonable assumptions based on similar projects and default values from CalEEMod were used in the analysis.

Operational emissions for each project alternative were estimated using emission factors and methodologies from CalEEMod and EMFAC2021. Annual emissions for each project alternative were estimated for the Horizon Year 2045. The emissions estimation approach for each emission source is discussed in the following sections.

Area Sources

GHG emissions from area sources were estimated using CalEEMod and were primarily associated with landscaped areas of maintenance and storage facilities (MSF) and stations. Area sources would generate GHG emissions from the use of gasoline-powered landscaping equipment. Landscaping emissions are based on the emissions factors, area to be landscaped, and the number of summer days for the Project Study Area. The CalEEMod default value is 250 summer days. 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. Details of area source emissions and landscaping areas are provided in the CalEEMod output files in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Energy Sources

Electricity

GHG emissions would be generated from electricity consumption during operations of each project alternative. Each project alternative's transit system would be electric powered, and its traction power substations (TPSSs) would consume electricity. In addition to TPSSs, various components of project alternatives would consume electricity such as stations, MSFs, and electric buses.

Electricity consumption related to TPSSs and electric buses were estimated outside of CalEEMod based on project alternative-specific electricity consumption data provided by the developers of each of the alternatives. Electricity consumption related to MSFs and stations were estimated using CalEEMod. MSF buildings were modeled as a "General Office Building" and parking areas were modeled as a "Parking Lot" land use in CalEEMod. For MSF buildings, energy for space heating and water heating would be provided by electricity because new buildings in 2045 would be all-electric in accordance with City of Los Angeles passed Ordinance 187714 as described in the following section. For stations, CalEEMod does not have a train station as a land use; therefore, all stations were modeled as an "Enclosed Parking with Elevator" land use. This land use best represents an aerial or underground station because it accounts for electricity use related to lighting, ventilation, and elevator use.

Annual electricity consumption in MWh was estimated for the components of each project alternative. Emissions were estimated based on the annual consumption multiplied by the utility emission factor measured in pounds of CO₂e per MWh (lbCO₂e/MWh). As discussed in Section 3.7.2.1, LADWP supplies power for the Project Study Area, and its CO₂e intensity factor was used to estimate GHG emissions from electricity consumption.

The GHG analysis was based on a horizon year of 2045, which is also the target year of SB 100, which would require renewable energy resources and zero-carbon resources to supply 100 percent of electricity. LADWP partnered with the National Renewable Energy Laboratory (NREL) on the *Los Angeles 100% Renewable Energy Study (LA100)* to support development of its *2022 Power Strategic Long-Term Resource Plan* (NREL, 2021; LADWP, 2022b). LA100 analyzed potential scenarios that provided a pathway for the city to achieve a 100 percent renewable power system by 2045. The potential scenarios were based on projections for electricity demand and electricity supply with varying assumptions. Of all the scenarios analyzed, the SB 100 scenario is the only scenario that would allow for electricity generation to come from natural gas through the use of renewable electricity credits, which are a market-based mechanism to help meet renewable energy targets (NREL, 2021). Because the SB 100 scenario allows for a portion of electricity generation from natural gas combustion which would result in GHG emissions, this scenario was selected to forecast LADWP's CO₂e intensity factor in 2045. The LA100 has potential scenarios to reach this goal by 2035, however, it required aggressive assumptions. For this GHG analysis, it was conservatively assumed the goal would not be met until the compliance date of 2045, ensuring GHG emissions from project alternatives are not underestimated.

Under the SB 100 scenario, combustion of natural gas could provide up to 10 percent of electricity generation, thus, it was assumed the 2045 power mix for LADWP would consist of 90 percent renewables and 10 percent non-renewables. LADWP's 2022 power mix consisted of 36 percent renewables and 64 percent non-renewables with a CO₂e intensity factor of 567 lb/MWh (LADWP, 2022a). The CO₂e intensity factor for 2045 was estimated based on the percent decrease in the non-renewable portion of LADWP's power mix from 2022 to 2045. This percent decrease was then applied to the 2022 GHG intensity factor to derive the 2045 CO₂e intensity factor.

In 2022, the non-renewable portion of the power mix was 64 percent and in 2045, the non-renewable portion of the power mix would be 10 percent, which resulted in an approximately 84 percent reduction from 2022 to 2045. This 84 percent reduction was then applied to the 2022 CO₂e intensity factor of 567 lb/MWh, resulting in a CO₂e intensity factor of 88 lb/MWh for 2045.

GHG emissions were estimated using the forecast 2045 CO₂e intensity factor multiplied by the electricity consumption of each project alternative's components. This intensity factor was also entered in CalEEMod to estimate GHG emissions from MSFs and stations. Details of the electricity consumption for each project alternative are provided in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Natural Gas

On December 10, 2022, the City of Los Angeles passed Ordinance 187714, which would require all newly constructed buildings in the City of Los Angeles to be all-electric (City of Los Angeles, 2022). This ordinance was added to the LAMC under Section 99.04.106.8 and had an effective date of January 1, 2023. Based on this ordinance, the GHG analysis did not include GHG 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 LAMC.

CalEEMod was used to estimate GHG emissions from the MSF based on building size. CalEEMod's default approach to energy consumption is to use the building size to estimate energy source consumption and generates annual amounts of electricity and natural gas consumed in kilowatt-hours (kWh) per year and kilo British thermal units (kBtu) per year, respectively. The natural gas consumption amounts are related to space heating and water heating in MSF buildings. The natural gas consumption amount is estimated because this is CalEEMod's default approach and does not account for the all-electric buildings ordinance as described above. Because electricity will provide the energy for space heating and water heating, the natural gas consumption amount generated by CalEEMod was converted to kWh via a conversion factor, then this additional electricity amount was added to the default electricity amount generated by CalEEMod. This approach ensures the additional electricity related to electric powered space heating and water heating appliances is accounted for in the emissions analysis.

Mobile Sources

Mobile sources would generate GHG emissions from combustion of fossil fuels, primarily gasoline and diesel, during vehicle operation. The *Sepulveda Transit Corridor Project Transportation Technical Report* (Metro, 2025b) evaluated 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), 2045 without Project conditions, and for each project alternative in forecast Horizon Year 2045.

The daily VMT values for each scenario were converted to annual VMT using a factor of 347 days per year, which accounts for reduced weekend and holiday mileage (CARB, 2008b). Emission factors for CO₂, CH₄, and N₂O were generated from EMFAC2021, and were based on all vehicle categories and fuel types, aggregate speeds, and model years, and the appropriate calendar year (2021 for Existing Conditions, and 2045 for No Project Alternative and project alternatives). Annual GHG emissions for each scenario were calculated by multiplying the annual VMT by the mobile emission factors, and then applying the appropriate GWPs.⁴

⁴ Note that GHG emissions related to electric vehicles would be accounted for in the Electric Utility Sector emissions inventory, not the Mobile Sources emissions inventory.

Additionally, mobile source emissions would be generated from employees traveling to and from each project alternative's MSF. 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 CalEEMod's 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. Like the VMT analysis, the daily VMT for employee travel was multiplied by 347 to generate the annual VMT. Emission factors for CO₂, CH₄, and N₂O were generated from EMFAC2021 and were based on all vehicle categories and fuel types, aggregate speeds and model years, and calendar year 2045. Annual GHG emissions were calculated by multiplying the annual VMT by the mobile emission factors, and then applying the appropriate GWPs. Detailed emissions calculations for mobile sources are provided in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Water and Wastewater Conveyance

Water and wastewater related to MSFs and stations would generate GHG emissions due to the energy required to supply, distribute, and treat the water and wastewater. Stations would primarily consume water for landscaping purposes. MSFs and stations would primarily consume recycled water for landscaping with native plants or drought-tolerant landscaping. Emissions related to water use were calculated using CalEEMod and were based on the water usage rate for the land use categories; the electrical intensity factors for water supply, treatment, and distribution; and the forecast 2045 CO₂e intensity for LADWP as previously described under Electricity. Wastewater emissions were calculated using CalEEMod and were based on the water usage rate for the land use categories, electrical intensity factors for treatment, method of wastewater treatment, and the forecast 2045 CO₂e intensity for LADWP. Details of water and wastewater emissions are provided in the CalEEMod output files in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Waste

GHG emissions related to solid waste disposal at landfills were also calculated using CalEEMod. Solid waste would be primarily generated from MSF buildings. CalEEMod estimates the annual solid waste amounts based on the size of the land use and solid waste generation rates. GHG emissions, primarily CO₂ and CH₄, are generated from the decomposition of solid waste. The GHG emission factors, particularly for CH₄, depend on characteristics of the landfill, such as the presence of a landfill gas capture system and subsequent flaring or energy recovery. The default values, as provided in CalEEMod, for landfill gas capture (e.g., no capture, flaring, energy recovery) are statewide averages and were used in the GHG analysis. Details of solid waste emissions are provided in the CalEEMod output files in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Refrigerants

GHG emissions would be generated from refrigerants used in air conditioning at the MSF buildings. CalEEMod was used to estimate GHG emissions from refrigerants. Emissions are based on the amount of refrigerant required for the equipment, which is dependent on the size of the land use category, as well as the operational and service leak rates over the equipment lifetime. Based on the lifetime of the equipment, CalEEMod derives the annual average GHG emissions. Details of refrigerant emissions are provided in the CalEEMod output files in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

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 annual operational emissions. The emergency generator emissions were calculated based on compliance with the applicable federal emissions standards and compliance with SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines) mandated emission limits and operating hour constraints. Rule 1470 applies to stationary compression ignition engines greater than 50 brake hp and sets limits on emissions and operating hours. In general, new stationary emergency standby diesel-fueled engines greater than 50 brake hp are not permitted to operate more than 50 hours per year for maintenance and testing.

Emergency generator emissions were estimated outside CalEEMod using a spreadsheet approach. GHG emissions were estimated based on a generator size (hp), and emission factors and load factors were obtained from CalEEMod. Generator size was based on data from alternative designs. Consistent with Rule 1470, annual GHG emissions for emergency generators were based on an annual usage of 50 hours per year per generator. Details of emergency generator emission calculations are provided in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

3.7.2.3 CEQA Thresholds of Significance

For the purposes of this DEIR, impacts are considered significant if the Project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

CEQA Guidelines Section 15064.4 provides guidance to lead agencies for determining the significance of impacts from GHG emissions. Section 15064.4(a) provides that a lead agency shall make a good-faith effort based, to the extent possible, on scientific and factual data to describe, calculate, or estimate the amount of GHG emissions resulting from a project. Section 15064.4(a) further provides that a lead agency shall have the discretion to determine, in the context of a particular project, whether to (1) quantify GHG emissions resulting from a project and/or (2) to rely on qualitative analysis or performance-based standards.

Pursuant to CEQA Guidelines Section 15064.4(a), the analysis presented herein quantifies GHG emissions resulting from the project alternatives and provides a good-faith effort to describe, calculate, and estimate GHG emissions resulting from project alternatives.

CEQA Guidelines Section 15064.4(b) also provides that, when assessing the significance of impacts from GHG emissions, a lead agency should focus the analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change and consider a timeframe that is appropriate for the project. The lead agency's analysis should reasonably reflect evolving scientific knowledge and state regulatory schemes, and consider (1) the extent to which the project operations may increase or reduce GHG emissions compared with existing conditions, (2) whether the project's GHG emissions exceed a threshold of significance that the lead agency determines applies to the project, and (3) the extent to which the project complies with regulations or requirements adopted to

implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The analysis of the potential impacts from each project alternative's GHG emissions follows this approach.

The CEQA Guidelines do not provide numeric or qualitative thresholds of significance for evaluating GHG emissions. Instead, they leave the determination of the significance of GHG emissions up to the lead agency and authorize the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence (CEQA Guidelines Sections 15064.7[b] and 15064.7[c]). Additionally, any public agency may also use an environmental standard as a threshold of significance, as it would promote consistency in significance determination and integrates environmental review with other environmental program planning and regulations (CEQA Guidelines Section 15064.7[d]). Neither CARB, SCAQMD, the Governor's OPR, nor Metro have established significance thresholds for a project's GHG emissions under CEQA. However, CARB and the OPR acknowledge that transforming public transit systems and reducing VMT are effective strategies for reducing GHG emissions on a regional scale. In 2018 and 2021, the OPR issued technical advisories for the streamlined review of transportation projects under CEQA (OPR, 2018, 2021). In these advisories, consistent with Section 15064.3 of the CEQA Guidelines, the OPR presumes that certain types of transportation projects that would reduce VMT would also result in a less than significant impact on transportation and would align with Senate Bill 743 goals to reduce GHG emissions, increase multimodal transportation, and facilitate mixed used development. While the OPR does recognize that reducing VMT would be essential to meeting state GHG reduction targets, it does not presume any conclusions relative to GHG emission impacts specifically for VMT-reducing projects. Consequently, the impacts analysis for project alternatives quantified the GHG emissions associated with construction and future operations to satisfy the recommendations in Section 15064.4 of the CEQA Guidelines. The comparison of emissions in Horizon Year 2045 from each project alternative to Existing Conditions 2021 is presented for informational purposes only.

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 the Project's impacts from ancillary changes in the environment would result in a misleading analysis.

Therefore, GHG impacts are 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 (Metro, 2016), roadway improvements, and other transit improvements anticipated to occur throughout the transit corridor, was selected as the Project's horizon year. By using Horizon Year 2045, the analysis more accurately

assesses the incremental impact of the project within the context of ongoing efforts to reduce GHG emissions.

The GHG analysis evaluates GHG emissions impacts in accordance with CEQA Guidelines 15064.4(b), and the Appendix G checklist questions listed previously. The significance of GHG emissions from the project alternatives is based on 1) the extent to which the project alternatives may increase or reduce GHG emissions compared with the projected future conditions baseline (2045 without Project conditions), and 2) evaluating project alternatives' consistency with state, regional, and local GHG reduction plans.

3.7.3 Project Measures

There are no project measures applicable to GHG emissions.

3.7.4 Existing Conditions

The primary effect of rising global concentrations of atmospheric GHGs is an increase in the average global temperature. Since 1982, the Earth's temperature has risen at an average rate of approximately 0.2 degrees Celsius per decade. Climate change modeling indicates that further warming is likely to occur due to the anticipated rise in global atmospheric GHG concentrations from various sources worldwide, including emissions from both developed and developing countries, as well as deforestation. This continued increase in GHGs is expected to induce further changes in the global climate system during the current century. Adverse impacts from global climate change worldwide and in California could include the following (CARB, 2022):

- Declining sea ice and mountain snowpack levels: This decline increases sea levels and sea surface evaporation rates, leading to higher atmospheric water vapor due to the atmosphere's ability to hold more moisture at elevated temperatures.
- Rising average global sea levels: Primarily resulting from thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets.
- Changing weather patterns: Alterations in precipitation, ocean salinity, and wind patterns, along with more extreme weather events, including droughts, heavy precipitation, heatwaves, cold spells, and intensified tropical cyclones.
- Declining Sierra Nevada snowpack levels: The Sierra Nevada snowpack, which accounts for approximately half of California's surface water storage, is projected to decrease significantly over the next century, posing challenges for water resources in the state.
- Increased ozone formation: Higher temperatures can lead to more days conducive to ozone formation (e.g., clear days with intense sunlight), potentially increasing ozone levels in high-ozone areas such as Southern California and the San Joaquin Valley by the end of the 21st century.
- Coastal erosion and seawater intrusion: Rising sea levels may exacerbate erosion along California's coastlines and increase the intrusion of seawater into the Sacramento-San Joaquin Delta and its levee systems, impacting freshwater supplies and infrastructure.

These projected impacts underscore the importance of mitigating GHG emissions and implementing adaptive strategies to address the challenges posed by climate change.

3.7.4.1 Statewide Greenhouse Gas Emissions Inventory

CARB maintains the statewide GHG emission inventory, and Table 3.7-2 displays GHG emissions from 2013 to 2021 in California by economic sector as defined in the *2008 Scoping Plan* (CARB, 2008a). California’s GHG emissions have followed a declining trend over the past decade. In 2021, emissions from routine emitting activities statewide were approximately 12.6 MMTCO_{2e} higher than 2020, but 23.1 MMTCO_{2e} lower than 2019 levels. GHG emissions related to the electric power sector has continually declined as California continues to meet RPS goals. The increase and decrease over the 2019 to 2021 timeframe are likely due to impacts of the COVID-19 pandemic (CARB, 2023b). The plurality of California GHG emissions is attributed to automobile exhaust associated with the transportation sector, including public and private vehicles, comprising approximately 40 percent of the total statewide emission inventory. Despite statewide population growth, approximately 4 percent from 2011 to 2021, annual GHG emissions attributed to the transportation sector have remained relatively constant over the last decade. However, in 2020, the transportation sector had the largest decrease compared to 2019, which likely resulted in less light-duty vehicle travel due to shelter-in place orders in response to the COVID-19 pandemic. Overall, the transportation sector in 2021 was 16.7 MMTCO_{2e} below pre-pandemic (2019) levels.

Table 3.7-2. Greenhouse Gas Annual MMTCO_{2e} Emissions Trends by Sector

Sector	2013	2014	2015	2016	2017	2018	2019	2020	2021
Transportation	156.9	157.6	161.2	165.0	166.4	165.2	162.3	135.6	145.6
Electric Power	94.0	90.3	86.3	70.8	64.4	65.0	60.2	59.5	62.4
Industrial	82.7	85.0	82.7	81.2	81.4	82.0	80.8	73.3	73.9
Commercial/Residential	39.0	35.5	37.2	37.7	38.3	37.5	40.6	38.9	38.8
Agriculture	33.7	33.7	32.6	32.1	31.6	32.1	31.3	31.5	30.9
High GWP Sources	17.0	17.9	18.8	19.4	20.1	20.5	20.7	21.3	21.3
Recycling and waste	8.3	8.1	8.1	7.9	8.2	8.3	8.4	8.6	8.4
Emissions Total	431.6	428.2	426.9	414.2	410.4	410.7	404.4	368.7	381.3

Source: CARB, 2023c

GWP = global warming potential

MMTCO_{2e} = million metric tons of carbon dioxide equivalents

3.7.4.2 SCAG Regional Greenhouse Gas Emissions

An element of the 2024-2050 RTP/SCS (SCAG, 2024) is a regional GHG emissions inventory and emissions forecast based on the growth projections and control strategies incorporated into its development. SCAG provides estimates of the regional GHG emissions through the RTP/SCS horizon year accounting for programmed transportation projects, population, employment, and housing growth, and other regional factors. The 2024-2050 RTP/SCS has a horizon year of 2050, but provides data for interim year 2045 to address consistency with other GHG reduction policies. Table 3.7-3 presents modeled emissions from on-road mobile sources in 2019 and 2045. The data demonstrates that from 2019 to 2045, the regional on-road emissions are anticipated to decrease by 32.4 percent (64.35 MMTCO_{2e} to 43.52 MMTCO_{2e} by 2045) with plan implementation.

In addition, SCAG provides the total regional GHG emissions from the three primary sources of GHG emissions within the region: transportation, building energy, and water-related energy. Table 3.7-4 shows that total GHG emissions across the SCAG region are anticipated to decrease by approximately 28.9 percent from 2019 to 2045, and transportation emissions are projected to decrease by 29.9 percent.

Table 3.7-3. Greenhouse Gas Emissions from On-Road Emissions in the SCAG Region

Sector	2019 (MMT/Year)			2050 (MMT/Year)		
	CO ₂	CH ₄	N ₂ O	CO ₂	CH ₄	N ₂ O
Light- and Medium-Duty Vehicles	49.30	0.0025	0.0010	32.91	0.0007	0.0002
Heavy-Duty Vehicles	12.64	0.0005	0.0014	9.75	0.0002	0.0005
Buses	1.54	0.0008	0.0001	0.61	0.0001	<0.0001
On-Road Vehicles (Subtotal) in CO ₂	63.48	0.0039	0.0026	43.27	0.0010	0.0007
On-Road Vehicles (Subtotal) in CO ₂ e	63.48	0.0810	0.7943	43.27	0.0212	0.2294
Total Emissions from On-Road Vehicles in CO₂e	64.35			43.52		

Source: SCAG, 2024

CH₄ = methane

CO₂ = carbon dioxide

CO₂e = carbon dioxide equivalent

MMT/Year = million metric tons per year

N₂O = nitrous oxide

SCAG = Southern California Association of Governments

Table 3.7-4. Annual Greenhouse Gas Emissions for the SCAG Region from Three Primary Sectors

Area	2019 (MMTCO ₂ e)	2030 (MMTCO ₂ e)	2045 (MMTCO ₂ e)	2050 (MMTCO ₂ e)	2019 vs. 2045
Transportation	66.42	53.38	46.55	47.84	-29.9%
Building Energy	64.64	57.30	47.30	43.97	-26.8%
Water-Related Energy	2.89	2.26	1.40	1.12	-51.6%
Total	133.95	112.94	95.26	97.8	-28.9%

Source: SCAG, 2024

MMTCO₂e = million metric tons of carbon dioxide equivalents

SCAG = Southern California Association of Governments

vs. = versus

3.7.4.3 Los Angeles County Metropolitan Transportation Authority Transit System Emissions

Metro has prepared detailed emissions inventories to track its progress in displacing GHG emissions from its operations, which includes operation of transit services and facilities, and employee commuting. GHG emissions are displaced by providing transit services that reduce regional VMT and land use efficiency effects, which are related to compact or high-density land use developments that foster communities to encourage more walking and bicycling, and less vehicle usage (APTA, 2018). Metro has been tracking its progress since 2008 through 2019 with its annual energy and resource reports. The *2019 Energy and Resource Report* (Metro, 2019a) was the last version in this format. For future sustainability reports, Metro will prepare an overall agency-wide sustainability report as part of Moving Beyond Sustainability. Metro's latest annual sustainability report analyzed the sustainability and environmental performance of its operational activities during the 2019 calendar year. Based on 2019 data, the largest emissions sources for Metro's total operational emissions were bus fleets and rail systems at 54 percent and 20 percent, respectively (Metro, 2020b). Non-modal sources (e.g., facility energy consumption, employee commuting) made up 22 percent of total operational emissions. New fleet technologies powered by renewable energy and reduced building energy usage can reduce Metro's emissions over the long term. Since 2012, emissions resulting from building energy use have decreased by 23 percent while emissions from water consumption have been cut in half. Table 3.7-5 summarizes

Metro's recent progress in displacing GHG emissions from its operations and continually shows an annual net displacement of GHG emissions.

Table 3.7-5. Metro Operations Annual Greenhouse Gas Emissions Displacement

Category	2014	2015	2016	2017	2018	2019
Total Emissions (MTCO ₂ e) ^a	396,380	391,275	390,840	415,872	371,911	326,953
Total Displacement (MTCO ₂ e) ^{b,c}	-482,813	-465,101	-448,301	-1,020,485	-987,490	-918,076
Mode Shift to Transit	-482,813	-465,101	-448,301	-207,374	-200,669	-186,515
Land Use ^d	NA	NA	NA	-813,110	-786,820	-731,561
Net Emissions (MTCO₂e)	-86,433	-73,827	-57,461	-604,613	-615,579	-591,123

Source: Metro, 2020b

^aTotal emissions represent the GHG emissions generated from Metro's operation of transit services such as buses, rail, and vanpools, as well as operations of facilities including consumption of electricity, natural gas, and water, refrigerants, and employee commuting.

^bGHG emissions are displaced by providing transit services that reduce regional vehicle miles traveled (VMT) and land use efficiency effects, which are related to compact or high-density land use developments that foster communities to encourage more walking and bicycling, and less vehicle usage.

^cIn 2018, Metro updated its 2017 GHG emissions inventory baseline with inclusion of the Land Use category and updated utility emission factors.

^dGHG emissions displacement calculations were updated in 2018 to reflect the addition of Land Use as a source of emissions displacement. Reporting of land use emissions began with the 2017 reporting year.

MTCO₂e = metric tons of carbon dioxide equivalents

NA = Not applicable

3.7.4.4 Regional Highway Emissions

As required by CEQA, 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 3.7.2.3, CEQA Thresholds of Significance, GHG emissions impacts would be evaluated by comparing emissions of project alternatives to 2045 without Project conditions. Table 3.7-6 summarizes the GHG emissions from existing conditions and 2045 without Project conditions.

Table 3.7-6. Existing Conditions (Baseline Year 2021) Regional Mobile Source Greenhouse Gas Emissions

Category	Existing Conditions (2021)	2045 without Project Conditions
Daily Vehicle Miles Traveled ^a	456,869,300	568,557,200
Days per Year ^b	347	347
Annual Vehicle Miles Traveled	158,533,647,100	197,289,348,400
Annual Greenhouse Gas Emissions (MTCO₂e)	64,691,322	57,188,730

Source: HTA, 2024

^aVMT data as provided in the *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 Corridor Based Model 2018 Transportation Analysis Model has been calibrated. Section 3.15.2.1 of the Transportation Chapter discusses the methodology for VMT.

^bAnnual miles are calculated using a factor of 347 days per year to account for reduced weekend and holiday mileage.

MTCO₂e = metric tons of carbon dioxide equivalents
VMT = Vehicle miles traveled

3.7.5 Environmental Impacts

3.7.5.1 Impact GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Project Alternatives

No Project Alternative

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

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 GHG emissions. The project would undergo project-specific environmental clearance and would implement project-specific mitigation measures, as necessary to avoid or minimize potential GHG impacts. Construction of additional bus stops along Metro Line 761 would result in minimal GHG 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. 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 GHG emissions, GHG emissions generated under the No Project Alternative would not have a significant impact on the environment and impacts would be less than significant.

Operational Impacts

The No Project Alternative annual GHG 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 3.7.2.3, GHG 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 would not benefit from long-term GHG reductions associated with the project alternatives. However, 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 and 2045 without Project conditions because project build 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 perceptible change in GHG emissions relative to the baseline on the project level under the No Project Alternative. Therefore, GHG emissions under the No Project Alternative would not have a significant impact on the environment and impacts would be less than significant.

GHG emissions from the No Project Alternative represent a future condition relative to baseline conditions, accounting only for changes that would occur specifically because the Project is not approved. No new track installation, stations, or MSF would be constructed nor operated under the No Project Alternative; however, there would be operations of additional bus stops related to Metro Line 761, but these bus stops would not generate GHG emissions. Table 3.7-7 compares GHG emissions from the No Project Alternative compared to existing conditions and 2045 baseline conditions. The No Project Alternative would result in a GHG emission reduction. Although VMT for the No Project Alternative would increase compared to existing conditions, the decrease in mobile source GHG emission factors over this time frame offsets the increase in VMT. Reductions in GHG emissions factors are related to implementation of state policies to reduce vehicular emissions and retirement of older, high-polluting vehicles.

Table 3.7-7. Annual Greenhouse Gas Emissions for the No Project Alternative (Horizon Year 2045) Compared to Existing Conditions (Baseline Year 2021)

Scenario	CO ₂ EF (g/mile)	CH ₄ EF (g/mile)	N ₂ O EF (g/mile)	CO ₂ e (g/mile)	Annual VMT	Annual Emissions (MTCO ₂ e)
Existing Conditions (2021)	402.15	0.012	0.019	408.11	158,533,647,100	64,691,322
No Project Alternative (2045) W/O	285.87	0.003	0.01	288.93	197,289,348,400	57,188,730
No Project Alternative (2045) W/P	285.87	0.003	0.01	288.93	197,289,348,400	57,188,730
Net Change (2045 W/P – 2021)	-116.28	-0.009	-0.006	-119.18	38,755,701,300	-7,502,592
Net Change (%)	-28.9	-73.4	-30.1	-29.2	24.4	-11.6
Net Change (2045 W/P – 2045 W/O)	0.0	0.0	0.0	0.0	0	0.0
Net Change (%)	0.0	0.0	0.0	0.0	0.0	0.0

Source: HTA, 2024

CH₄ = methane

CO₂ = carbon dioxide

EF = emission factor

g/mile = grams per mile

MTCO₂e = metric tons of carbon dioxide equivalents

N₂O = nitrous oxide

VMT = vehicle miles traveled

W/O = 2045 without Metro Line 761 improvements

W/P = 2045 with Metro Line 761 improvements

Alternative 1

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 1 would result in GHG emissions from off-road equipment, mobile sources (including worker vehicles, vendor trucks, and haul trucks), as well as electricity consumptions from on-site portable offices. These emissions sources would be related to constructing the monorail aerial alignment, TPSSs, stations, monorail MSF, and e-bus MSF. For Alternative 1, its precast concrete facility would be offsite in Antelope Valley or Riverside County. GHG emissions related to hauling precast components from the precast facility to the construction worksites were included in the emissions analysis. The Alternative 1 alignment would be completely aerial and would not require use of a TBM.

As discussed in Section 3.7.2.3, CEQA Thresholds of Significance, construction GHG emissions are inherently cumulative in nature and the SCAQMD guidance states construction-related GHG emissions should be amortized over the lifetime of a project and the amortized construction emissions should be combined with annual operational emissions to evaluate a project’s potential impacts from long-term emissions (SCAQMD, 2008b). Based on this, the Alternative 1 construction emissions were amortized over its design lifetime of 30 years, then combined with the Alternative 1 annual operational GHG emissions. Table 3.7-8 summarizes the Alternative 1 GHG emissions throughout the construction period. Alternative 1 construction would generate a total of 60,653 MTCO₂e and would result in 2,022 MTCO₂e annually when amortized over the project lifetime of 30 years. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-8. Alternative 1: Construction Greenhouse Gas Emissions

Construction Year	Greenhouse Gas Emissions (MTCO ₂ e) ^{a,b}
2029	4,906
2030	5,999
2031	8,898
2032	14,860
2033	13,240
2034	8,605
2035	3,916
2036	163
Tunnel Boring Machine Electricity Consumption	– ^c
Portable Office Electricity Consumption	66
Total Construction Emissions	60,653
Amortized Construction Emissions (30 Years)	2,022

Source: HTA, 2024

^aTotals may vary due to rounding.

^bGreenhouse gas emissions related to electricity consumption represent the total greenhouse emissions over the entire construction period.

^cAlternative 1 would not require a tunnel boring machine.

– = no data

MTCO₂e = metric tons of carbon dioxide equivalents

It should be noted that total and annual construction GHG emissions represent a conservative assessment because GHG emissions would decrease in future years as the construction industry shifts toward implementation of cleaner fuels (i.e., electrified equipment) and more efficient technologies.

Additionally, Metro's Green Construction Policy requires contractors to use renewable diesel which would reduce upstream GHG emissions related to producing the fuel, as well as reduce GHG emissions from fuel combustion in off-road equipment and trucks as compared to petroleum diesel. Thus, the annual construction GHG emissions associated with Alternative 1 would decrease with time and are likely to be lower than estimated herein. Alternative 1 construction emissions were amortized over Alternative 1's design lifetime of 30 years, then combined with Alternative 1 annual operational GHG emissions. As shown in Table 3.7-9, annual operations of Alternative 1 compared to 2045 without Project conditions would result in a net reduction of GHG emissions; therefore, impacts from Alternative 1 construction emissions would be considered less than significant.

Operational Impacts

Operations of Alternative 1 would generate long-term GHG emissions from direct and indirect sources. Direct sources consist of mobile sources, including regional VMT and employees traveling to and from the monorail MSF and electric bus MSF, area sources related to landscaping equipment, emergency generator usage during maintenance testing, and refrigerants used in building air conditioning systems. Indirect sources include electricity generation at power plants associated with traction power for the alignment and electric buses, building electricity consumption, electricity consumption related to water and wastewater conveyance, and waste decomposition at landfills from solid waste generation. 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 GHG emissions modeled for the MSF Base Design. Regardless of which MSF is selected in future final design decisions, the GHG analysis adequately accounted for emissions from either of these MSFs.

The Alternative 1 annual GHG emissions were estimated for two scenarios: Alternative 1 compared 2045 without Project conditions and Alternative 1 compared to Existing Conditions 2021. As discussed in Section 3.7.2.3, CEQA Thresholds of Significance, GHG 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 Alternative 1 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-9 summarizes the Alternative 1 annual GHG emissions for each source category compared to 2045 without Project conditions. As shown in Table 3.7-9, when compared to 2045 without Project conditions the No Project Alternative, Alternative 1 would result in a net reduction of annual GHG emissions in Horizon Year 2045. This reduction is primarily related to mobile emissions associated with a reduction in VMT. As stated in Section 3.15.4.2 of this EIR, implementation of Alternative 1 would reduce regional daily VMT by 341,800 miles per day compared to 2045 without Project conditions.

Table 3.7-9. Alternative 1: Annual Greenhouse Gas Emissions Compared to 2045 without Project Conditions

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/Year) ^a
<i>Alternative 1</i>	
Area	14
Electricity	3,067
Mobile-VMT Analysis	57,154,350
Mobile-Employee Travel	1,232
Water	37
Waste	37
Refrigerants	< 0.1
Emergency Generators ^b	45
Amortized Construction	2,022
Alternative 1 Total Annual Emissions	57,160,803
<i>2045 without Project Conditions</i>	
Mobile – 2045 VMT Analysis Annual Emissions	57,188,730
Net Change in Emissions	-27,927

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAn emergency generator would be located at MSF.

MTCO₂e/Year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 1 would support state, regional, and local efforts to reduce GHG emissions by providing an efficient transit system as an alternative mode of transportation for commuters traveling between the San Fernando Valley (Valley) and Westside of Los Angeles (Westside). Implementation of Alternative 1 would expand Metro’s regional transit network with an all-electric transit system, thereby reducing GHG emissions related to regional VMT and providing further contributions to Metro’s net displacement of operational GHG emissions. Overall, Alternative 1 would not result in an incremental increase in GHG emissions that would contribute to climate change, rather it would result in an environmental benefit by reducing GHG emissions; therefore, impacts of operational GHG emissions would be less than significant.

Table 3.7-10 summarizes the Alternative 1 annual GHG emissions for each source category compared to existing conditions 2021. This is presented for informational purposes only. As shown in Table 3.7-10, when compared to existing conditions, Alternative 1 would result in a net reduction of annual GHG emissions. The primary driver of the net reduction is mobile source emissions which are a function of VMT and emission factors.

Table 3.7-10. Alternative 1: Annual Greenhouse Gas Emissions (Horizon Year 2045) Compared to Existing Conditions (Baseline Year 2021)

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/Year) ^a
<i>Alternative 1</i>	
Area	14
Electricity	3,067
Mobile-VMT Analysis	57,154,350
Water	37
Waste	37
Refrigerants	< 0.1
Emergency Generators ^b	45
Amortized Construction	2,022
Alternative 1 Total Annual Emissions	57,160,803
<i>Existing Conditions</i>	
Mobile – 2021 VMT Analysis Annual Emissions	64,691,322
Net Change in Emissions	-7,530,519

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAn emergency generator would be located at MSF.

MTCO₂e/Year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 3

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 3 would result in GHG emissions from off-road equipment, mobile sources (including worker vehicles, vendor trucks, and haul trucks), as well as electricity consumption from TBM usage and on-site portable offices. These emissions sources would be related to constructing the monorail transit (MRT) system alignment, TPSSs, stations, and the MSF (either option). For Alternative 3, its precast concrete facility would be offsite in Antelope Valley or Riverside County. GHG emissions related to hauling precast components from the precast facility to the construction worksites were included in the emissions analysis.

As discussed in Section 3.7.2.3, CEQA Thresholds of Significance, GHG emissions are measured exclusively as cumulative impacts; therefore, the Alternative 3 construction emissions are considered part of its total GHG emissions in conjunction with operational emissions. In accordance with SCAQMD guidance (SCAQMD, 2008b), the Alternative 3 construction emissions were amortized over its design lifetime of 30 years, then combined with the Alternative 3 annual operational GHG emissions. Table 3.7-11 summarizes the Alternative 3 GHG emissions throughout the construction period. Alternative 3 construction would generate a total of 218,741 MTCO₂e and would result in 7,291 MTCO₂e annually when amortized over the project lifetime of 30 years. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-11. Alternative 3: Construction Greenhouse Gas Emissions

Construction Year	Greenhouse Gas Emissions (MTCO ₂ e) ^{a,b}
2029	5,392
2030	7,241
2031	10,100
2032	18,685
2033	18,232
2034	11,598
2035	6,942
2036	1,880
2037	569
Tunnel Boring Machine Electricity Consumption	138,024
Portable Office Electricity Consumption	77
Total Construction Emissions	218,741
Amortized Construction Emissions (30 Years)	7,291

Source: HTA, 2024

^aTotals may vary due to rounding.

^bGreenhouse Gas emissions related to electricity consumption represent the total greenhouse gas emissions over the entire construction period.

MTCO₂e = metric tons of carbon dioxide equivalents

Because construction emission sources would cease once construction is complete, they are considered short term. It should be noted that total and annual construction GHG emissions represent a conservative assessment because GHG emissions would decrease in future years as the construction industry shifts toward implementation of cleaner fuels (i.e., electrified equipment) and more efficient technologies. Additionally, Metro’s Green Construction Policy requires contractors to use renewable diesel which would reduce upstream GHG emissions related to producing the fuel, as well as reduce GHG emissions from fuel combustion in off-road equipment and trucks as compared to petroleum diesel. GHG emissions for electric powered equipment such as the TBM and portable offices would also decrease in future years as LADWP continues to increase the amount of renewable energy sources in its power mix to meet state RPS goals. Thus, the annual construction GHG emissions associated with Alternative 3 would decrease with time and are likely to be lower than estimated herein. Alternative 3 construction emissions were amortized over Alternative 3’s design lifetime of 30 years, then combined with Alternative 3 annual operational GHG emissions. As shown in Table 3.7-12, annual operations of Alternative 3 compared to 2045 without Project conditions would result in a net reduction of GHG emissions; therefore, impacts from Alternative 3 construction emissions would be considered less than significant.

Operational Impacts

Operations of Alternative 3 would generate long-term GHG emissions from direct and indirect sources. Direct sources consist of mobile sources, including regional VMT and employees traveling to and from the MSF, area sources related to landscaping equipment, emergency generator usage during maintenance testing, and refrigerants used in building air conditioning systems. Indirect sources include electricity generation at power plants associated with traction power for the alignment, building electricity consumption, electricity consumption related to water and wastewater conveyance, and waste decomposition at landfills from solid waste generation.

The Alternative 3 annual GHG emissions were estimated for two scenarios: Alternative 3 compared to 2045 without Project conditions Alternative 3 compared to Existing Conditions 2021. As discussed in Section 3.7.2.3, CEQA Thresholds of Significance, GHG 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 Alternative 3 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-12 summarizes the Alternative 3 annual GHG emissions for each source category compared to 2045 without Project conditions. When compared to the 2045 without Project conditions, Alternative 3 would result in a net reduction of annual GHG emissions in Horizon Year 2045. This reduction is primarily related to mobile emissions associated with a reduction in VMT. As stated in Section 3.15.4.2 of this EIR, implementation of Alternative 3 would reduce regional daily VMT by 451,100 miles per day compared to 2045 without Project conditions.

Table 3.7-12. Alternative 3: Annual Greenhouse Gas Emissions Compared to 2045 without Project Conditions

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/Year) ^a
<i>Alternative 3</i>	
Area	20
Electricity	3,561
Mobile	57,143,356
Mobile-Employee Travel	1,027
Water	24
Waste	24
Refrigerants	< 0.1
Emergency Generators ^b	134
Amortized Construction	7,291
Alternative 3 Total Annual Emissions	57,155,436
<i>2045 without Project Conditions</i>	
Mobile – 2045 VMT Analysis Annual Emissions	57,188,730
Net Change in Emissions	-33,294

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAn emergency generator would be located at the MSF and at the two underground stations for a total of three emergency generators.

MTCO₂e/Year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 3 would support state, regional and local efforts to reduce GHG emissions by providing an efficient transit system as an alternative mode of transportation for commuters traveling between the Valley and the Westside. Implementation of Alternative 3 would expand Metro’s regional transit network with an all-electric transit system, thereby reducing GHG emissions related to regional VMT and providing further contributions to Metro’s net displacement of operational GHG emissions. Overall, Alternative 3 would not result in an incremental increase in GHG emissions that would contribute to climate change, rather it would result in an environmental benefit by reducing GHG emissions; therefore, impacts of GHG emissions would be less than significant.

Table 3.7-13 summarizes the Alternative 3 annual GHG emissions for each source category compared to Existing Conditions 2021. This is presented for informational purposes only. As shown in Table 3.7-13, when compared to existing conditions, Alternative 3 would result in a net reduction of annual GHG emissions. The primary driver of the net reduction is mobile source emissions, which are a function of VMT and emission factors.

Table 3.7-13. Alternative 3: Annual Greenhouse Gas Emissions (Horizon Year 2045) Compared to Existing Conditions (Baseline Year 2021)

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/year) ^a
<i>Alternative 3</i>	
Area	20
Electricity	3,561
Mobile-VMT Analysis	57,143,356
Mobile-Employee Travel	1,027
Water	24
Waste	24
Refrigerants	< 0.1
Emergency Generators ^b	134
Amortized Construction	7,291
Alternative 3 Total Annual Emissions	57,155,436
<i>Existing Conditions</i>	
Mobile – 2021 VMT Analysis Annual Emissions	64,691,322
Net Change in Emissions	-7,535,886

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAn emergency generator would be located at the MSF and at the two underground stations for a total of three emergency generators.

MTCO₂e/year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 4

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 4 would result in GHG emissions from off-road equipment, mobile sources (including worker vehicles, vendor trucks, and haul trucks), as well as electricity consumption from TBM usage and on-site portable offices. These emissions sources would be related to constructing the heavy rail transit (HRT) system alignment, TPSSS, stations, and the MSF.

As discussed in Section 3.7.2.3, CEQA Thresholds of Significance, GHG emissions are measured exclusively as cumulative impacts; therefore, the Alternative 4 construction emissions are considered part of its total GHG emissions in conjunction with operational emissions. In accordance with SCAQMD guidance (SCAQMD, 2008a), the Alternative 4 construction emissions were amortized over Alternative 4's design lifetime of 30 years, then combined with the Alternative 4 annual operational GHG emissions. Table 3.7-14 summarizes the Alternative 4 GHG emissions throughout the construction period.

Alternative 4 construction would generate a total of 274,027 MTCO₂e and would result in 9,134 MTCO₂e annually when amortized over the project lifetime of 30 years. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-14. Alternative 4: Construction Greenhouse Gas Emissions

Construction Year	Greenhouse Gas Emissions (MTCO ₂ e) ^{a,b}
2027	476
2028	7,451
2029	23,169
2030	37,717
2031	36,532
2032	33,543
2033	16,632
2034	10,660
2035	4,729
2036	1,225
2037	605
Tunnel Boring Machine Electricity Consumption	101,198
Portable Office Electricity Consumption	88
Total Construction Emissions	274,027
Amortized Construction Emissions (30 Years)	9,134

Source: HTA, 2024

^aTotals may vary due to rounding.

^bGreenhouse emissions related to electricity consumption represent the total greenhouse gas emissions over the entire construction period.

MTCO₂e = metric tons of carbon dioxide equivalents

Because construction emission sources would cease once construction is complete, they are considered short term. It should be noted that total and annual construction GHG emissions represent a conservative assessment because GHG emissions would decrease in future years as the construction industry shifts toward implementation of cleaner fuels (i.e., electrified equipment) and more efficient technologies. Additionally, Metro’s Green Construction Policy (Metro, 2011a) requires contractors to use renewable diesel, which would reduce upstream GHG emissions related to producing the fuel, as well as reduce GHG emissions from fuel combustion in off-road equipment and trucks as compared to petroleum diesel. GHG emissions for electric powered equipment such as the TBM and portable offices would also decrease in future years as LADWP continues to increase the amount of renewable energy sources in its power mix to meet state RPS goals. Thus, the annual construction GHG emissions associated with Alternative 4 would decrease with time and are likely to be lower than estimated herein. Alternative 4 construction emissions were amortized over Alternative 4’s design lifetime of 30 years, then combined with Alternative 4 annual operational GHG emissions. As shown in Table 3.7-15, annual operations of Alternative 4 compared to 2045 without Project conditions would result in a net reduction of GHG emissions; therefore, impacts from Alternative 4 construction emissions would be considered less than significant.

Operational Impacts

Operations of Alternative 4 would generate long-term GHG emissions from direct and indirect sources. Direct sources consist of mobile sources, including regional VMT and employees traveling to and from the MSF, area sources related to landscaping equipment, emergency generator usage during maintenance testing, and refrigerants used in building air conditioning systems. Indirect sources include electricity generation at power plants associated with traction power for the alignment, building electricity consumption, electricity consumption related to water and wastewater conveyance, and waste decomposition at landfills from solid waste generation.

The Alternative 4 annual GHG 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 3.7.2.3, CEQA Thresholds of Significance, GHG 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 Alternative 4 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-15 summarizes the Alternative 4 annual GHG emissions for each source category compared to 2045 without Project conditions. When compared to 2045 without Project conditions, Alternative 4 would result in a net reduction of annual GHG emissions in Horizon Year 2045. This reduction is primarily related to mobile emissions associated with a reduction in VMT. As stated in Section 3.15.4.2 of this EIR, implementation of Alternative 4 would reduce regional daily VMT by 767,800 miles per day compared to 2045 without Project conditions.

Table 3.7-15. Alternative 4: Annual Greenhouse Gas Emissions Compared to 2045 without Project Conditions

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/Year) ^a
<i>Alternative 4</i>	
Area	25
Electricity	5,708
Mobile-VMT Analysis	57,111,500
Mobile-Employee Travel	557
Water	85
Waste	78
Refrigerants	< 0.1
Emergency Generators ^b	45
Amortized Construction	9,134
Alternative 4 Total Annual Emissions	57,127,133
<i>2045 without Project Conditions</i>	
Mobile – 2045 VMT Analysis Annual Emissions	57,188,730
Net Change in Emissions	-61,597

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAn emergency generator would be located at MSF. Backup power for underground stations would be provided by battery system.

MTCO₂e/Year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 4 would support state, regional and local efforts to reduce GHG emissions by providing an efficient transit system as an alternative mode of transportation for commuters traveling between the Valley and Westside. Implementation of Alternative 4 would expand Metro’s regional transit network with an all-electric transit system, thereby reducing GHG emissions related to regional VMT and providing further contributions to Metro’s net displacement of operational GHG emissions. Overall, Alternative 4 would not result in an incremental increase in GHG emissions that would contribute to climate change, rather it would result in an environmental benefit by reducing GHG emissions; therefore, impacts of GHG emissions would be less than significant.

Table 3.7-16 summarizes the Alternative 4 annual GHG emissions for each source category compared to Existing Conditions 2021. This is presented for informational purposes only. As shown in Table 3.7-16, when compared to existing conditions, Alternative 4 would result in a net reduction of annual GHG emissions. The primary driver of the net reduction would be mobile source emissions that are a function of VMT and emission factors.

Table 3.7-16. Alternative 4: Annual Greenhouse Gas Emissions (Horizon Year 2045) Compared to Existing Conditions (Baseline Year 2021)

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/year) ^a
<i>Alternative 4</i>	
Area	25
Electricity	5,708
Mobile	57,111,500
Mobile-Employee Travel	557
Water	85
Waste	78
Refrigerants	< 0.1
Emergency Generators ^b	45
Amortized Construction	9,134
Alternative 4 Total Annual Emissions	57,127,133
<i>Existing Conditions</i>	
Mobile – 2021 VMT Analysis Annual Emissions	64,691,322
Net Change in Emissions	-7,564,189

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAn emergency generator would be located at MSF. Backup power for underground stations would be provided by battery system.

MTCO₂e = metric tons of carbon dioxide equivalents

MTCO₂e/year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 5

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 5 would result in GHG emissions from off-road equipment, mobile sources (including worker vehicles, vendor trucks, and haul trucks), as well as electricity consumption from TBM TBMs and on-site portable offices. These emissions sources would be related to constructing the HRT system alignment, stations, MSF, and TPSSs.

As discussed in Section 3.7.2.3, CEQA Thresholds of Significance, GHG emissions are measured exclusively as cumulative impacts; therefore, the Alternative 5 construction emissions are considered part of its total GHG emissions in conjunction with operational emissions. In accordance with SCAQMD guidance (SCAQMD, 2008a), the Alternative 5 construction emissions were amortized over its design lifetime of 30 years, then combined with the Alternative 5 annual operational GHG emissions. Table 3.7-17 summarizes the Alternative 5 GHG emissions throughout the construction period. Alternative 5 construction would generate a total of 361,458 MTCO₂e and would result in 12,049 MTCO₂e annually when amortized over the project lifetime of 30 years. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-17. Alternative 5: Construction Greenhouse Gas Emissions

Construction Year	Greenhouse Gas Emissions (MTCO ₂ e) ^{a,b}
2026	882
2027	5,136
2028	13,380
2029	32,784
2030	47,960
2031	46,077
2032	32,541
2033	13,580
2034	7,145
2035	4,408
2036	1,267
2037	605
Tunnel Boring Machine Electricity Consumption	155,593
Portable Office Electricity Consumption	99
Total Construction Emissions	361,458
Amortized Construction Emissions (30 Years)	12,049

Source: HTA, 2024

^aTotals may vary due to rounding.

^bGreenhouse gas emissions related to electricity consumption represent the total greenhouse gas emissions over the entire construction period.

MTCO₂e = metric tons of carbon dioxide equivalents

Because construction emission sources would cease once construction is complete, they are considered short term. It should be noted that total and annual construction GHG emissions represent a conservative assessment because GHG emissions would decrease in future years as the construction industry shifts toward implementation of cleaner fuels (i.e., electrified equipment) and more efficient technologies. Additionally, Metro's Green Construction Policy requires contractors to use renewable diesel which would reduce upstream GHG emissions related to producing the fuel, as well as reduce

GHG emissions from fuel combustion in off-road equipment and trucks as compared to petroleum diesel. GHG emissions for electric powered equipment such as the TBM and portable offices would also decrease in future years as LADWP continues to increase the amount of renewable energy sources in its power mix to meet state RPS goals. Thus, the annual construction GHG emissions associated with Alternative 5 would decrease with time and are likely to be lower than estimated herein. Alternative 5 construction emissions were amortized over Alternative 5's design lifetime of 30 years, then combined with Alternative 5 annual operational GHG emissions. As shown in Table 3.7-18, annual operations of Alternative 5 compared to 2045 without Project conditions would result in a net reduction of GHG emissions; therefore, impacts from Alternative 5 construction emissions would be considered less than significant.

Operational Impacts

Operations of Alternative 5 would generate long-term GHG emissions from direct and indirect sources. Direct sources consist of mobile sources, including regional VMT and employees traveling to and from the MSF, area sources related to landscaping equipment, emergency generator usage during maintenance testing, and refrigerants used in building air conditioning systems. Indirect sources include electricity generation at power plants associated with traction power for the alignment, building electricity consumption, electricity consumption related to water and wastewater conveyance, and waste decomposition at landfills from solid waste generation.

The Alternative 5 annual GHG 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 3.7.2.3, CEQA Thresholds of Significance, GHG 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 Alternative 5 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-18 summarizes the Alternative 5 annual GHG emissions for each source category compared to 2045 without Project conditions. When compared to 2045 without Project conditions, Alternative 5 would result in a net reduction of annual GHG emissions in Horizon Year 2045. This reduction is primarily related to mobile emissions associated with a reduction in VMT. As stated in Section 3.15.4.2 of this EIR, implementation of Alternative 5 would reduce regional daily VMT by 775,100 miles per day compared to 2045 without Project conditions.

Table 3.7-18. Alternative 5: Annual Greenhouse Gas Emissions Compared to 2045 without Project Conditions

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/Year) ^a
<i>Alternative 5</i>	
Area	30
Electricity	6,407
Mobile-VMT Analysis	57,110,766
Mobile-Employee Travel	557
Water	85
Waste	78
Refrigerants	< 0.1
Emergency Generators ^b	45
Amortized Construction	12,049
Alternative 5 Total Annual Emissions	57,130,016
<i>2045 without Project Conditions</i>	
Mobile – 2045 VMT Analysis Annual Emissions	57,188,730
Net Change in Emissions	-58,714

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAn emergency generator would be located at the MSF. Backup power for underground stations would be provided by a battery system.

MTCO₂e/Year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 5 would support state, regional, and local efforts to reduce GHG emissions by providing an efficient transit system as an alternative mode of transportation for commuters traveling between the Valley and the Westside. Implementation of Alternative 5 would expand Metro’s regional transit network with an all-electric transit system, thereby reducing GHG emissions related to regional VMT and providing further contributions to Metro’s net displacement of operational GHG emissions. Overall, Alternative 5 would not result in an incremental increase in GHG emissions that would contribute to climate change, rather it would result in an environmental benefit by reducing GHG emissions; therefore, impacts of GHG emissions would be less than significant.

Table 3.7-19 summarizes the Alternative 5 annual GHG emissions for each source category compared to Existing Conditions 2021. This is presented for informational purposes only. As shown in Table 3.7-19, when compared to existing conditions, Alternative 5 would result in a net reduction of annual GHG emissions. The primary driver of the net reduction would be mobile source emissions that are a function of VMT and emission factors.

Table 3.7-19. Alternative 5: Annual Greenhouse Gas Emissions (Horizon Year 2045) Compared to Existing Conditions (Baseline Year 2021)

Source Category	GHG Emissions (MTCO ₂ e/year) ^a
<i>Alternative 5</i>	
Area	30
Electricity	6,407
Mobile-VMT Analysis	57,110,766
Mobile-Employee Travel	557
Water	85
Waste	78
Refrigerants	< 0.1
Emergency Generators ^b	45
Amortized Construction	12,049
Alternative 5 Total Annual Emissions	57,130,016
<i>Existing Conditions</i>	
Mobile – 2021 VMT Analysis Annual Emissions	64,691,322
Net Change in Emissions	-7,561,306

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAn emergency generator would be located at the MSF. Backup power for underground stations would be provided by a battery system.

MTCO₂e/year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 6

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 6 would result in GHG emissions from off-road equipment, mobile sources (including worker vehicles, vendor trucks, and haul trucks), as well as electricity consumption from TBM usage and on-site portable offices. These emissions sources would be related to constructing the HRT system alignment, TPSSs, stations, and MSF.

As discussed in Section 3.7.2.3, CEQA Thresholds of Significance, GHG emissions are measured exclusively as cumulative impacts; therefore, the Alternative 6 construction emissions are considered part of its total GHG emissions in conjunction with operational emissions. In accordance with SCAQMD guidance (SCAQMD, 2008a), the Alternative 6 construction emissions were amortized over its design lifetime of 30 years, then combined with the Alternative 6 annual operational GHG emissions. Table 3.7-20 summarizes the Alternative 6 GHG emissions throughout the construction period. Alternative 6 construction would generate a total of 211,656 MTCO₂e and would result in 7,055 MTCO₂e annually when amortized over the project lifetime of 30 years. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-20. Alternative 6: Construction Greenhouse Gas Emissions

Construction Year	Greenhouse Gas Emissions (MTCO ₂ e) ^{a,b}
2029	8,303
2030	18,321
2031	11,210
2032	10,637
2033	12,118
2034	10,056
2035	13,064
2036	5,868
2037	842
Tunnel Boring Machine Electricity Consumption	121,166
Portable Office Electricity Consumption	71
Total Construction Emissions	211,656
Amortized Construction Emissions (30 Years)	7,055

Source: HTA, 2024

^aTotals may vary due to rounding.

^bGreenhouse gas emissions related to electricity consumption represent the total greenhouse gas emissions over the entire construction period.

MTCO₂e = metric tons of carbon dioxide equivalents

Because construction emission sources would cease once construction is complete, they are considered short term. It should be noted that total and annual construction GHG emissions represent a conservative assessment because GHG emissions would decrease in future years as the construction industry shifts toward implementation of cleaner fuels (i.e., electrified equipment) and more efficient technologies. Additionally, Metro’s Green Construction Policy requires contractors to use renewable diesel which would reduce upstream GHG emissions related to producing the fuel, as well as reduce GHG emissions from fuel combustion in off-road equipment and trucks as compared to petroleum diesel. GHG emissions for electric powered equipment such as the TBM and portable offices would also decrease in future years as LADWP continues to increase the amount of renewable energy sources in its power mix to meet state RPS goals. Thus, the annual construction GHG emissions associated with Alternative 6 would decrease with time and are likely to be lower than estimated herein. As shown in Table 3.7-21, annual operations of Alternative 6 compared to 2045 without Project conditions would result in a net reduction of GHG emissions; therefore, impacts from Alternative 6 construction emissions would be considered less than significant.

Operational Impacts

Operations of Alternative 6 would generate long-term GHG emissions from direct and indirect sources. Direct sources consist of mobile sources, including regional VMT and employees traveling to and from the MSF, area sources related to landscaping equipment, and refrigerants used in building air conditioning systems. Indirect sources include electricity generation at power plants associated with traction power for the alignment, building electricity consumption, electricity consumption related to water and wastewater conveyance, and waste decomposition at landfills from solid waste generation.

The Alternative 6 annual GHG 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 3.7.2.3, CEQA Thresholds of Significance, GHG 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 Alternative 6 2045 and Existing Conditions 2021 is presented for informational purposes only. Detailed emissions calculations are summarized in Attachment 1 of the *Sepulveda Transit Corridor Project Climate Change and Greenhouse Gas Emissions Technical Report* (Metro, 2025a).

Table 3.7-21 summarizes the Alternative 6 annual GHG emissions for each source category compared to 2045 without Project conditions. When compared to the No Project Alternative, Alternative 6 would result in a net reduction of annual GHG emissions in Horizon Year 2045. This reduction is primarily related to mobile emissions associated with a reduction in VMT. As stated in Section 3.15.4.2 of this EIR, implementation of Alternative 6 would reduce regional daily VMT by 695,400 miles per day compared to 2045 without Project conditions.

Table 3.7-21. Alternative 6: Annual Greenhouse Gas Emissions Compared to 2045 without Project Conditions

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/year) ^a
<i>Alternative 6</i>	
Area	53
Electricity	2,879
Mobile-VMT Analysis	57,118,782
Mobile-Employee Travel	1,540
Water	34
Waste	32
Refrigerants	< 0.1
Emergency Generators ^b	—
Amortized Construction	7,055
Alternative 6 Total Annual Emissions	57,130,376
<i>2045 without Project Conditions</i>	
Mobile – 2045 VMT Analysis Annual Emissions	57,188,730
<i>Net Change in Emissions</i>	-58,354

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAlternative 6 would not require emergency generators.

— = no data

MTCO₂e/year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Alternative 6 would support state, regional and local efforts to reduce GHG emissions by providing an efficient transit system as an alternative mode of transportation for commuters traveling between the Valley and Westside. Implementation of Alternative 6 would expand Metro's regional transit network with an all-electric transit system, thereby reducing GHG emissions related to regional VMT and providing further contributions to Metro's net displacement of operational GHG emissions. Overall, Alternative 6 would not result in an incremental increase in GHG emissions that would contribute to climate change, rather it would result in an environmental benefit by reducing GHG emissions; therefore, impacts of GHG emissions would be less than significant.

Table 3.7-22 summarizes the Alternative 6 annual GHG emissions for each source category compared to Existing Conditions 2021. This is presented for informational purposes only. As shown in Table 3.7-22, when compared to existing conditions, Alternative 6 would result in a net reduction of annual GHG

emissions. The primary driver of the net reduction would be mobile source emissions, which are a function of VMT and emission factors.

Table 3.7-22. Alternative 6: Annual Greenhouse Gas Emissions (Horizon Year 2045) Compared to Existing Conditions (Baseline Year 2021)

Source Category	Greenhouse Gas Emissions (MTCO ₂ e/year) ^a
<i>Alternative 6</i>	
Area	53
Electricity	2,879
Mobile-VMT Analysis	57,118,782
Mobile-Employee Travel	1,540
Water	34
Waste	32
Refrigerants	< 0.1
Emergency Generators ^b	—
Amortized Construction	7,055
Alternative 6 Total Annual Emissions	57,130,376
<i>Existing Conditions</i>	
Mobile – 2021 VMT Analysis Annual Emissions	64,691,322
Net Change in Emissions	-7,560,946

Source: HTA, 2024

^aTotals may vary due to rounding.

^bAlternative 6 would not require emergency generators.

— = no data

MTCO₂e/year = metric tons of carbon dioxide equivalents per year

VMT = vehicle miles traveled

Maintenance and Storage Facilities

As described in Section 3.7.2, GHG emissions associated with both the construction and operation of each MSF were calculated as part of the emissions inventories for each project alternative. Please refer to the impact discussion for each project alternative for detail on potential emissions associated with each MSF.

3.7.5.2 Impact GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Project Alternatives

No Project Alternative

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Significant and Unavoidable

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 GHG emissions. Construction of additional bus stops along Metro Line 761 would result in minimal GHG 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 GHG emissions where possible. The project would undergo project-specific environmental clearance and would implement project-specific mitigation measures, as necessary to avoid or minimize potential GHG impacts. Overall, because project alternatives would not be constructed under the No Project Alternative and would not generate GHG emissions, and construction of bus stops would be required to comply with Metro's Green Construction Policy, the No Project Alternative would not conflict with plans, policies, or regulations for reducing GHG emissions and impacts would be less than significant.

Operational Impacts

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. The additional bus stops related to Metro Line 761 would not be a source of emissions when operational. No new track installation, stations, or MSF would be constructed under the No Project Alternative. As discussed in Section 3.7.4.2, an element of the 2024-2050 RTP/SCS 2024 is a regional GHG emissions inventory and emissions forecast based on the growth projections and control strategies incorporated into its development. SCAG provides estimates of the regional GHG emissions through the RTP/SCS horizon year, accounting for programmed transportation projects, population, employment, and housing growth, and other regional factors. Expansion of public transportation systems spurring mode shift away from passenger vehicles is a fundamental pillar of regional efforts to reduce GHG emissions and meet regional and statewide GHG emissions reduction targets. While the No Project Alternative would provide some transit benefit in the form of rerouting Metro Line 761, not implementing the Project would conflict with these targets, as the Project is in and of itself one of the strategies in the 2024-2050 RTP/SCS 2024 to contribute to achieving the per capita reduction targets; therefore, impacts would be significant and unavoidable.

Alternative 1

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 1 would generate short-term GHG emissions related to off-road equipment, mobile sources, and electricity consumption. Alternative 1 construction would comply with Metro's Green Construction Policy, which requires idling restrictions for off-road equipment and trucks, using trucks with model years 2007 or newer, requiring contractors to use renewable diesel for all diesel engines, and implementing best management practices (such as using electric powered equipment in lieu of diesel equipment where available). Upon completion of Alternative 1 construction, these emissions would cease. As GHG emissions are exclusively cumulative impacts, the Alternative 1 amortized construction emissions were included with the long-term operational emissions for Alternative 1. Based on the discussion in the following sections, annual operational emissions, which included amortized construction emissions, were found to not conflict with plans or policies to reduce

GHG emissions; therefore, impacts for construction-related GHG emissions would be less than significant.

Operational Impacts

Plans, policies, and regulations focused on reducing GHG emissions occur at the state, regional, and local levels. At the state level, these efforts are guided primarily by AB 32, SB 32, AB 1279, and the *2022 Scoping Plan* (CARB, 2022). At the regional level, the 2024-2050 RTP/SCS contains strategies for reducing GHG emissions within the Sustainable Development focus area, as well as Metro's 2019 CAAP (Metro, 2019b) and 2020 *Moving Beyond Sustainability* (Metro, 2020a). Lastly at the local level, relevant plans include the City of Los Angeles' *2015 Sustainable City pLAN* (City of Los Angeles Mayor's Office, 2015) and *Mobility Plan 2035* (DCP, 2016). The following sections discuss the consistency of Alternative 1 with these state, regional, and local plans for reducing GHG emissions.

Consistency with AB 32, SB 32, AB 1279, and 2022 Scoping Plan

AB 32, SB 32, and AB 1279 outline the state's GHG emissions reduction targets for 2020, 2030, and 2045, respectively. In 2008 and 2014, CARB adopted the *2008 Scoping Plan* and the 2014 First Update, respectively, as a framework for achieving the emissions reduction targets in AB 32 (CARB, 2008a, 2014). These plans outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. CARB adopted the *2017 Scoping Plan* in November 2017 (CARB, 2017) as a framework to achieve the 2030 GHG reduction goal described in SB 32, which is to reduce statewide GHG emissions to 1990 levels by 2020 and to 40 percent below 1990 levels by 2030. Most recently, the *2022 Scoping Plan* was adopted in September 2022 and outlines how the state will achieve carbon neutrality and reduce statewide GHG emissions 85 percent below 1990 levels by 2045. The analysis year for Alternative 1 is 2045 (horizon year); therefore, the statewide GHG emissions reduction target for 2045 is the statutory statewide milestone target that is applicable to Alternative 1.

As discussed in Section 3.7.4, Existing Conditions, the transportation sector is the largest contributor to statewide GHG emissions. Similarly, the *2022 Scoping Plan* focuses heavily on strategies and actions to reduce GHG emissions from the transportation sector, such as reducing VMT through transportation infrastructure that aligns with the state's climate goals. Alternative 1 would be consistent with this objective because it would reduce regional daily VMT by 341,800 miles per day (compared to 2045 without Project conditions), resulting in an overall net reduction in annual GHG emissions.

The *2022 Scoping Plan* also focuses on transitioning commercial building energy from fossil fuel sources to non-combustion alternatives. Alternative 1 would be consistent with this effort because it would comply with LAMC Section 99.04.106.8, which requires all new buildings to be all-electric. Additionally, Alternative 1 would be designed to meet sustainable certifications for its major components. The entire track alignment would be designed to attain a minimum Envision Verified Award Level (currently version 3), MSF buildings would be designed to achieve a minimum of LEED Silver, and all stations and MSFs would be designed to meet Tier 2 of the CALGreen Code (LASRE, 2024). Overall, Alternative 1 would not conflict with the state goals and strategies for reducing GHG emissions.

Consistency with the 2024-2050 RTP/SCS

The 2024-2050 RTP/SCS is a long-range planning document that balances future mobility and housing needs with economic, environmental, and public health goals in the SCAG region. One of the key strategies of the plan is to integrate land use, housing, and transportation planning to ensure sustainable regional growth. The SCS portion of the 2024-2050 RTP/SCS includes a combination of transportation and land use strategies to meet GHG reduction goals, such as emphasizing land use

patterns that facilitate multimodal access to work, educational, and other destinations; focusing on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets; and encouraging design and transportation options that reduce the reliance on solo car trips. Alternative 1 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers, including connecting to University of California, Los Angeles (UCLA) via its electric bus route from the Wilshire Boulevard/Metro D Line Station.

Implementation of the 2024-2050 RTP/SCS would achieve regional GHG reductions relative to 2005 SCAG areawide levels of approximately 8 percent in 2020 and approximately 19 percent by 2035 (SCAG, 2024). Additionally, SCAG indicates that effective implementation of the 2024-2050 RTP/SCS would reduce daily VMT per capita by 6.3 percent compared to the SCAG 2050 Baseline scenario. The SCAG 2050 Baseline scenario represents how the region would perform without implementation of the 2024-2050 RTP/SCS. As shown in Table 3.7-9, implementation of Alternative 1 would result in a net reduction in GHG emissions and would directly contribute to meeting the objectives and emission reduction targets outlined in the 2024-2050 RTP/SCS. Overall, Alternative 1 would not conflict with the goals and strategies of the 2024-2050 RTP/SCS to reduce VMT and associated GHG emissions.

Consistency with Metro Plans

Metro has developed policies directed toward controlling GHG emissions through a variety of plans over the last decade. The most recent and relevant plans are the 2019 CAAP and Moving Beyond Sustainability, which builds upon previous commitments to environmental and sustainability stewardship. The 2019 CAAP set a goal of reducing GHG emissions by 79 percent relative to 2017 by 2030, and 100 percent by 2050. Moving Beyond Sustainability also includes goals of reducing GHG emissions by 100 percent relative to 2017 by 2050 and displacing or preventing GHG emissions. As a Metro project, Alternative 1 would inherently be required to be consistent with goals and strategies for each of these plans. As shown in Table 3.7-9, implementation of Alternative 1 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals for both of these plans. Overall, Alternative 1 would not conflict with the goals and strategies of Metro's plans to reduce GHG emissions.

Consistency with Sustainable City pLAN

The 2019 updates to *L.A.'s Green New Deal, Sustainable City pLAN* (the pLAN) (City of Los Angeles Mayor's Office, 2019) included the first 4-year update to the 2015 pLAN (City of Los Angeles Mayor's Office, 2015) and expounded in more detail the vision to achieve a sustainable future that entails a carbon-neutral economy by 2050. The 2019 updates to the pLAN accelerate targets from the 2015 pLAN for supplying renewable energy, increasing local water sourcing, reducing building energy, reducing VMT per capita, reducing municipal GHG emissions, increasing the percentage of zero-emission passenger and city-fleet vehicles, building new housing near transit, and increasing the number of green jobs.

The 2019 updates to the pLAN would accelerate GHG reductions targets, including reducing GHG emissions by 50 percent by 2025 and 73 percent by 2035, and becoming carbon neutral by 2050 — all relative to a 1990 baseline. As shown in Table 3.7-9, implementation of Alternative 1 would result in a net reduction in GHG emissions compared to future conditions, thus supporting GHG reduction goals. Additionally, Alternative 1 would provide access to a safe and efficient transit system located in dense urban communities near major job centers and UCLA, and would be developed to meet sustainable certifications, such as Envision, LEED, and CALGreen building codes. Overall, Alternative 1 would not conflict with the goals and strategies of the 2019 updates to the pLAN to reduce GHG emissions.

Consistency with City of Los Angeles Mobility Plan 2035

Mobility Plan 2035 emphasizes the efficacy of multimodal street design in reducing GHG emissions through encouraging the use of transit and active transportation, which decreases regional dependence on passenger vehicles (DCP, 2016). Alternative 1 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers and UCLA via its electric bus route from the Wilshire Boulevard/Metro D Line Station. Alternative 1 would not conflict with the goals and strategies of Mobility Plan 2035 to reduce GHG emissions.

Overall, Alternative 1 would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions; therefore, impacts would be less than significant.

Alternative 3

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 3 would generate short-term GHG emissions related to off-road equipment, mobile sources, and electricity consumption. Alternative 3 construction would comply with Metro's Green Construction Policy, which requires idling restrictions for off-road equipment and trucks, using trucks with model years 2007 or newer, requiring contractors to use renewable diesel for all diesel engines, and implementing best management practices, such as using electric powered equipment in lieu of diesel equipment where available. Upon completion of Alternative 3 construction, these emissions would cease. As GHG emissions are exclusively cumulative impacts, the Alternative 3 amortized construction emissions were included with the long-term operational emissions for Alternative 3. Based on the discussion below, annual operational emissions, which included amortized construction emissions, were found to not conflict with plans or policies to reduce GHG emissions; therefore, impacts for construction-related GHG emissions would be less than significant.

Operational Impacts

Plans, policies, and regulations focused on reducing GHG emissions occur at the state, regional, and local levels. At the state level, these efforts are guided primarily by AB 32, SB 32, AB 1279, and the 2022 *Scoping Plan* (CARB, 2022). At the regional level, the 2024-2050 RTP/SCS contains strategies for reducing GHG emissions within the Sustainable Development focus area, as well as Metro's 2019 CAAP (Metro, 2019b) and 2020 *Moving Beyond Sustainability* (Metro, 2020a). Lastly at the local level, relevant plans include the City of Los Angeles' 2015 pLAN (City of Los Angeles Mayor's Office, 2015) and Mobility Plan 2035 (DCP, 2016). The following sections discuss the consistency of Alternative 3 with these state, regional, and local plans for reducing GHG emissions.

Consistency with AB 32, SB 32, AB 1279, and 2022 Scoping Plan

AB 32, SB 32, and AB 1279 outline the state's GHG emissions reduction targets for 2020, 2030, and 2045, respectively. In 2008 and 2014, CARB adopted the 2008 *Scoping Plan* and the 2014 *First Update*, respectively, as a framework for achieving the emissions reduction targets in AB 32 (CARB, 2008a, 2014). These plans outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. CARB adopted 2017 *Scoping Plan* in November 2017 (CARB, 2017) as a framework to

achieve the 2030 GHG reduction goal described in SB 32, which is to reduce statewide GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030. Most recently, the *2022 Scoping Plan* was adopted in September 2022 (CARB, 2022) and outlines how the state will achieve carbon neutrality and reduce statewide GHG emissions 85 percent below 1990 levels by 2045. The analysis year for Alternative 3 is 2045 (horizon year); therefore, the statewide GHG emissions reduction target for 2045 is the statutory statewide milestone target that is applicable to Alternative 3.

As discussed in Section 3.7.4, Existing Conditions, the transportation sector is the largest contributor to statewide GHG emissions. Similarly, the *2022 Scoping Plan* focuses heavily on strategies and actions to reduce GHG emissions from the transportation sector, such as reducing VMT through transportation infrastructure that aligns with the state's climate goals. Alternative 3 would be consistent with this objective because it would reduce regional daily VMT by 451,100 miles per day (compared to 2045 without Project conditions), resulting in an overall net reduction in annual GHG emissions.

The *2022 Scoping Plan* also focuses on transitioning commercial building energy from fossil fuel sources to non-combustion alternatives. Alternative 3 would be consistent with this effort because it would comply with LAMC Section 99.04.106.8, which requires all new buildings to be all-electric. Additionally, Alternative 3 would be designed to meet sustainable certifications for its major components. The entire track alignment would be designed to attain a minimum Envision Verified Award Level (currently version 3), MSF buildings would be designed to achieve a minimum of LEED Silver, and all stations and the MSF would be designed to meet Tier 2 of CALGreen (LASRE, 2024). Overall, Alternative 3 would not conflict with the state goals and strategies for reducing GHG emissions.

Consistency with the 2024-2050 RTP/SCS

The 2024-2050 RTP/SCS is a long-range planning document that balances future mobility and housing needs with economic, environmental, and public health goals in the SCAG region. One of the key strategies of the plan is to integrate land use, housing, and transportation planning to ensure sustainable regional growth. The SCS portion of the 2024-2050 RTP/SCS includes a combination of transportation and land use strategies to meet GHG reduction goals, such as emphasizing land use patterns that facilitate multimodal access to work, educational and other destinations; focusing on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets; and encouraging design and transportation options that reduce the reliance on solo car trips. Alternative 3 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers, including a direct connection with UCLA via the UCLA Gateway Plaza Station.

Implementation of the 2024-2050 RTP/SCS would achieve regional GHG reductions relative to 2005 SCAG areawide levels of approximately 8 percent in 2020 and approximately 19 percent by 2035 (SCAG, 2024). Additionally, SCAG indicates that implementation of the 2024-2050 RTP/SCS would reduce daily VMT per capita by 5 percent compared to the SCAG 2050 Baseline scenario. The SCAG 2050 Baseline scenario represents how the region would perform without implementation of the 2024-2050 RTP/SCS. As shown in Table 3.7-12, implementation of Alternative 3 would result in a net reduction of GHG emissions and would directly contribute to meeting the objectives and emission reduction targets outlined in the 2024-2050 RTP/SCS. Overall, Alternative 3 would not conflict with the goals and strategies of the 2024-2050 RTP/SCS to reduce VMT and associated GHG emissions.

Consistency with Metro Plans

Metro has developed policies directed toward controlling GHG emissions through a variety of plans over the last decade. The most recent and relevant plans are the 2019 CAAP and Moving Beyond Sustainability, which builds upon previous commitments to environmental and sustainability stewardship. The 2019 CAAP set a goal of reducing GHG emissions by 79 percent relative to 2017 by 2030, and 100 percent by 2050. Moving Beyond Sustainability also includes goals of reducing GHG emissions by 100 percent relative to 2017 by 2050 and displacing or preventing GHG emissions. As a Metro project, Alternative 3 would inherently be required to be consistent with goals and strategies for each of these plans. As shown in Table 3.7-12, implementation of Alternative 3 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals for both of these plans. Overall, Alternative 3 would not conflict with the goals and strategies of Metro's plans to reduce GHG emissions.

Consistency with Sustainable City pLAN

The 2019 updates to *L.A.'s Green New Deal, Sustainable City pLAN* (the pLAN) (City of Los Angeles Mayor's Office, 2019) included the First 4-Year Update to the 2015 pLAN (City of Los Angeles Mayor's Office, 2015) and expounded in more detail the vision to achieve a sustainable future that entails a carbon-neutral economy by 2050. The 2019 updates to the pLAN accelerate targets from the 2015 pLAN for supplying renewable energy, increasing local water sourcing, reducing building energy, reducing VMT per capita, reducing municipal GHG emissions, increasing the percentage of zero-emission passenger and city-fleet vehicles, building new housing near transit, and increasing the number of green jobs.

The 2019 updates to the pLAN would accelerate GHG reductions targets including reducing GHG emissions by 50 percent by 2025 and 73 percent by 2035 and becoming carbon neutral by 2050 — all relative to a 1990 baseline. As shown in Table 3.7-12, implementation of Alternative 3 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals. Additionally, Alternative 3 would provide access to a safe and efficient transit system located in close proximity to dense urban communities near major job centers and a direct connection with UCLA, and would be developed to meet sustainable certifications, such as Envision, LEED, and CALGreen building codes. Overall, Alternative 3 would not conflict with the goals and strategies of the 2019 updates to the pLAN to reduce GHG emissions.

Consistency with City of Los Angeles Mobility Plan 2035

Mobility Plan 2035 emphasizes the efficacy of multimodal street design in reducing GHG emissions through encouraging the use of transit and active transportation, which decreases regional dependence on passenger vehicles (DCP, 2016). Alternative 3 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers and UCLA via the UCLA Gateway Plaza Station. Alternative 3 would not conflict with the goals and strategies of Mobility Plan 2035 to reduce GHG emissions.

Overall, Alternative 3 would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions; therefore, impacts would be less than significant.

Alternative 4

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 4 would generate short-term GHG emissions related to off-road equipment, mobile sources, and electricity consumption. Alternative 4 construction would comply with Metro's Green Construction Policy which requires idling restrictions for off-road equipment and trucks, using trucks with model years 2007 or newer, requiring contractors to use renewable diesel for all diesel engines, and implementing best management practices, such as using electric powered equipment in lieu of diesel equipment where available. Upon completion of Alternative 4 construction, these emissions would cease. As GHG emissions are exclusively cumulative impacts, the Alternative 4 amortized construction emissions were included with the long-term operational emissions for Alternative 4. Based on the discussion below, annual operational emissions, which included amortized construction emissions, were found to not conflict with plans or policies to reduce GHG emissions; therefore, impacts for construction-related GHG emissions would be less than significant.

Operational Impacts

Plans, policies, and regulations focused on reducing GHG emissions occur at the state, regional, and local levels. At the state level, these efforts are guided primarily by AB 32, SB 32, AB 1279, and the 2022 *Scoping Plan* (CARB, 2022). At the regional level, the 2024-2050 RTP/SCS contains strategies for reducing GHG emissions within the Sustainable Development focus area, as well as Metro's 2019 CAAP (Metro, 2019b) and 2020 *Moving Beyond Sustainability* (Metro, 2020a). Lastly at the local level, relevant plans include the City of Los Angeles' 2015 pLAN (City of Los Angeles Mayor's Office, 2015) and Mobility Plan 2035 (DCP, 2016). The following sections discuss the consistency of Alternative 4 with these state, regional, and local plans for reducing GHG emissions.

Consistency with AB 32, SB 32, AB 1279, and the 2022 Scoping Plan

AB 32, SB 32, and AB 1279 outline the state's GHG emissions reduction targets for 2020, 2030, and 2045, respectively. In 2008 and 2014, CARB adopted the 2008 *Scoping Plan* and the 2014 First Update, respectively, as a framework for achieving the emissions reduction targets in AB 32 (CARB, 2008a, 2014). These plans outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. CARB adopted 2017 *Scoping Plan* in November 2017 (CARB, 2017) as a framework to achieve the 2030 GHG reduction goal described in SB 32, which is to reduce statewide GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030. Most recently, the 2022 *Scoping Plan* was adopted in September 2022 and outlines how the state will achieve carbon neutrality and reduce statewide GHG emissions 85 percent below 1990 levels by 2045. The analysis year for Alternative 4 is 2045 (horizon year); therefore, the statewide GHG emissions reduction target for 2045 is the statutory statewide milestone target that is applicable to Alternative 4.

As discussed in Section 3.7.4, Existing Conditions, the transportation sector is the largest contributor to statewide GHG emissions. Similarly, the 2022 *Scoping Plan* focuses heavily on strategies and actions to reduce GHG emissions from the transportation sector, such as reducing VMT through transportation infrastructure that aligns with the state's climate goals. Alternative 4 would be consistent with this objective because it would reduce regional daily VMT by 767,800 miles per day (compared to 2045 without Project conditions), resulting in an overall net reduction in annual GHG emissions.

The 2022 *Scoping Plan* also focuses on transitioning commercial building energy from fossil fuel sources to non-combustion alternatives. Alternative 4 would be consistent with this effort because it would comply with LAMC Section 99.04.106.8, which requires all newly constructed buildings to be all-electric buildings. Additionally, Alternative 4 would be designed to meet sustainable certifications for its major

components. The entire track alignment, stations, and MSF would be designed in accordance with Envision Version 3, underground stations and the MSF would be designed to meet the LEED Version 4 Building Design and Construction (LEED v4 BD+C) and Tier 2 of CALGreen (STCP, 2024). Overall, Alternative 4 would not conflict with the state goals and strategies for reducing GHG emissions.

Consistency with the 2024-2050 RTP/SCS

The 2024-2050 RTP/SCS is a long-range planning document that balances future mobility and housing needs with economic, environmental, and public health goals in the SCAG region. One of the key strategies of the plan is to integrate land use, housing, and transportation planning to ensure sustainable regional growth. The SCS portion of the 2024-2050 RTP/SCS includes a combination of transportation and land use strategies to meet GHG reduction goals, such as emphasizing land use patterns that facilitate multimodal access to work, educational and other destinations; focusing on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets; and encouraging design and transportation options that reduce the reliance on solo car trips. Alternative 4 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers, including a direct connection with UCLA via the UCLA Gateway Plaza Station.

Implementation of the 2024-2050 RTP/SCS would achieve regional GHG reductions relative to 2005 SCAG areawide levels of approximately 8 percent in 2020 and approximately 19 percent by 2035 (SCAG, 2024). Additionally, SCAG indicates that implementation of the 2024-2050 RTP/SCS would reduce daily VMT per capita by 6.3 percent compared to the SCAG 2050 Baseline scenario. The SCAG 2050 Baseline scenario represents how the region would perform without implementation of the 2024-2050 RTP/SCS. As shown in Table 3.7-15, implementation of Alternative 4 would result in a net reduction of GHG emissions and would directly contribute to meeting the objectives and emission reduction targets outlined in Connect SoCal. Overall, Alternative 4 would not conflict with the goals and strategies of the 2024-2050 RTP/SCS to reduce VMT and associated GHG emissions.

Consistency with Metro Plans

Metro has developed policies directed toward controlling GHG emissions through a variety of plans over the last decade. The most recent and relevant plans are the 2019 CAAP and Moving Beyond Sustainability, which builds upon previous commitment to environmental and sustainability stewardship. The 2019 CAAP set a goal of reducing GHG emissions by 79 percent relative to 2017 by 2030, and 100 percent by 2050. Moving Beyond Sustainability also includes goals of reducing GHG emissions by 100 percent relative to 2017 by 2050 and displacing or preventing GHG emissions. As a Metro project, Alternative 4 would inherently be required to be consistent with goals and strategies for each of these plans. As shown in Table 3.7-15, implementation of Alternative 4 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals for both of these plans. Overall, Alternative 4 would not conflict with the goals and strategies of Metro's plans to reduce GHG emissions.

Consistency with Sustainable City pLAN

The 2019 updates to *L.A.'s Green New Deal, Sustainable City pLAN* (the pLAN) (City of Los Angeles Mayor's Office, 2019) included the First 4-Year Update to the 2015 pLAN (City of Los Angeles Mayor's Office, 2015), which expounded in more detail the vision to achieve a sustainable future that entails a carbon-neutral economy by 2050. The 2019 updates to the pLAN accelerate targets from the 2015 pLAN for supplying renewable energy, increasing local water sourcing, reducing building energy, reducing VMT

per capita, reducing municipal GHG emissions, increasing the percentage of zero-emission passenger and city-fleet vehicles, building new housing near transit, and increasing the number of green jobs.

The 2019 updates to the pLAN would accelerate GHG reductions targets including reducing GHG emissions by 50 percent by 2025 and 73 percent by 2035 and becoming carbon neutral by 2050 — all relative to a 1990 baseline. As shown in Table 3.7-15, implementation of Alternative 4 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals. Additionally, Alternative 4 would provide access to a safe and efficient transit system located in close proximity to dense urban communities near major job centers and a direct connection to UCLA, and would be developed to meet sustainable certifications, such as Envision, LEED, and CALGreen building codes. Overall, Alternative 4 would not conflict with the goals and strategies of the 2019 updates to the pLAN to reduce GHG emissions.

Consistency with City of Los Angeles Mobility Plan 2035

Mobility Plan 2035 emphasizes the efficacy of multimodal street design in reducing GHG emissions through encouraging the use of transit and active transportation, which decreases regional dependence on passenger vehicles (DCP, 2016). Alternative 4 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers and UCLA via the UCLA Gateway Plaza Station. Alternative 4 would not conflict with the goals and strategies of Mobility Plan 2035 to reduce GHG emissions.

Overall, Alternative 4 would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions; therefore, impacts would be less than significant.

Alternative 5

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 5 would generate short-term GHG emissions related to off-road equipment, mobile sources, and electricity consumption. Alternative 5 construction would comply with Metro's Green Construction Policy which requires idling restrictions for off-road equipment and trucks, using trucks with model years 2007 or newer, requiring contractors to use renewable diesel for all diesel engines, and implementing best management practices, such as using electric powered equipment in lieu of diesel equipment where available. Upon completion of Alternative 5 construction, these emissions would cease. As GHG emissions are exclusively cumulative impacts, the Alternative 5 amortized construction emissions were included with the long-term operational emissions for Alternative 5. Based on the discussion below, annual operational emissions, which included amortized construction emissions, were found to not conflict with plans or policies to reduce GHG emissions; therefore, impacts for construction-related GHG emissions would be less than significant.

Operational Impacts

Plans, policies, and regulations focused on reducing GHG emissions occur at the state, regional, and local levels. At the state level, these efforts are guided primarily by AB 32, SB 32, AB 1279, and the 2022 *Scoping Plan* (CARB, 2022). At the regional level, the 2024-2050 RTP/SCS contains strategies for reducing GHG emissions within the Sustainable Development focus area, as well as Metro's 2019 CAAP (Metro,

2019b) and *2020 Moving Beyond Sustainability* (Metro, 2020a). Lastly at the local level, relevant plans include the City of Los Angeles' 2015 pLAN (City of Los Angeles Mayor's Office, 2015) and Mobility Plan 2035 (DCP, 2016). The following sections discuss the consistency of Alternative 5 with these state, regional, and local plans for reducing GHG emissions.

Consistency with AB 32, SB 32, AB 1279, and 2022 Scoping Plan

AB 32, SB 32, and AB 1279 outline the state's GHG emissions reduction targets for 2020, 2030, and 2045, respectively. In 2008 and 2014, CARB adopted the *2008 Scoping Plan* and 2014 First Update, respectively, as a framework for achieving the emissions reduction targets in AB 32 (CARB, 2008a, 2014). These plans outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. CARB adopted *2017 Scoping Plan* in November 2017 (CARB, 2017) as a framework to achieve the 2030 GHG reduction goal described in SB 32, which is to reduce statewide GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030. Most recently, the *2022 Scoping Plan* was adopted in September 2022 and outlines how the state will achieve carbon neutrality and reduce statewide GHG emissions 85 percent below 1990 levels by 2045. The analysis year for Alternative 5 is 2045 (horizon year); therefore, the statewide GHG emissions reduction target for 2045 is the statutory statewide milestone target that is applicable to Alternative 5.

As discussed in Section 3.7.4, Existing Conditions, the transportation sector is the largest contributor to statewide GHG emissions. Similarly, the *2022 Scoping Plan* focuses heavily on strategies and actions to reduce GHG emissions from the transportation sector, such as reducing VMT through transportation infrastructure that aligns with the state's climate goals. Alternative 5 would be consistent with this objective because it would reduce regional daily VMT by 775,100 miles per day (compared to 2045 without Project conditions), resulting in an overall net reduction in annual GHG emissions.

The *2022 Scoping Plan* also focuses on transitioning commercial building energy from fossil fuel sources to non-combustion alternatives. Alternative 5 would be consistent with this effort because it would comply with LAMC Section 99.04.106.8, which requires all newly constructed buildings to be all-electric buildings. Additionally, Alternative 5 would be designed to meet sustainable certifications for its major components. The entire track alignment, stations, and MSF would be designed in accordance with Envision Version 3, underground stations and the MSF would be designed to meet the LEED Version 4 Building Design and Construction (LEED v4 BD+C) and Tier 2 of CALGreen (STCP, 2024). Overall, Alternative 5 would not conflict with the state goals and strategies for reducing GHG emissions.

Consistency with the 2024-2050 RTP/SCS

The 2024-2050 RTP/SCS is a long-range planning document that balances future mobility and housing needs with economic, environmental, and public health goals in the SCAG region. One of the key strategies of the plan is to integrate land use, housing, and transportation planning to ensure sustainable regional growth. The SCS portion of the 2024-2050 RTP/SCS includes a combination of transportation and land use strategies to meet GHG reduction goals, such as emphasizing land use patterns that facilitate multimodal access to work, educational and other destinations; focusing on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets; and encouraging design and transportation options that reduce the reliance on solo car trips. Alternative 5 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers, including a direct connection with UCLA via the UCLA Gateway Plaza Station.

Implementation of the 2024-2050 RTP/SCS would achieve regional GHG reductions relative to 2005 SCAG areawide levels of approximately 8 percent in 2020 and approximately 19 percent by 2035 (SCAG, 2024). Additionally, SCAG indicates that implementation of the 2024-2050 RTP/SCS would reduce daily VMT per capita by 6.3 percent compared to the SCAG 2050 Baseline scenario. The SCAG 2050 Baseline scenario represents how the region would perform without implementation of the 2024-2050 RTP/SCS. As shown in Table 3.7-18, implementation of Alternative 5 would result in a net reduction of GHG emissions and would directly contribute to meeting the objectives and emission reduction targets outlined in Connect SoCal. Overall, Alternative 5 would not conflict with the goals and strategies of the 2024-2050 RTP/SCS to reduce VMT and associated GHG emissions.

Consistency with Metro Plans

Metro has developed policies directed toward controlling GHG emissions through a variety of plans over the last decade. The most recent and relevant plans are the 2019 CAAP and Moving Beyond Sustainability, which builds upon previous commitment to environmental and sustainability stewardship. The 2019 CAAP set a goal of reducing GHG emissions by 79 percent relative to 2017 by 2030, and 100 percent by 2050. Moving Beyond Sustainability also includes goals of reducing GHG emissions by 100 percent relative to 2017 by 2050 and displacing or preventing GHG emissions. As a Metro project, Alternative 5 would inherently be required to be consistent with goals and strategies for each of these plans. As shown in Table 3.7-18, implementation of Alternative 5 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals for both of these plans. Overall, Alternative 5 would not conflict with the goals and strategies of Metro's plans to reduce GHG emissions.

Consistency with Sustainable City pLAN

The 2019 updates to *L.A.'s Green New Deal, Sustainable City pLAN* (the pLAN) (City of Los Angeles Mayor's Office, 2019) included the First 4-Year Update to the 2015 pLAN (City of Los Angeles Mayor's Office, 2015), which expounded in more detail the vision to achieve a sustainable future that entails a carbon-neutral economy by 2050. The 2019 updates to the pLAN accelerate targets from the 2015 pLAN for supplying renewable energy, increasing local water sourcing, reducing building energy, reducing VMT per capita, reducing municipal GHG emissions, increasing the percentage of zero-emission passenger and city-fleet vehicles, building new housing near transit, and increasing the number of green jobs.

The 2019 updates to the pLAN would accelerate GHG reductions targets including reducing GHG emissions by 50 percent by 2025 and 73 percent by 2035 and becoming carbon neutral by 2050 — all relative to a 1990 baseline. As shown in Table 3.7-18, implementation of Alternative 5 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals. Additionally, Alternative 5 would provide access to a safe and efficient transit system located in close proximity to dense urban communities near major job centers and a direct connection to UCLA, and would be developed to meet sustainable certifications, such as Envision, LEED, and CALGreen building codes. Overall, Alternative 5 would not conflict with the goals and strategies of the 2019 updates to the pLAN to reduce GHG emissions.

Consistency with City of Los Angeles Mobility Plan 2035

Mobility Plan 2035 emphasizes the efficacy of multimodal street design in reducing GHG emissions through encouraging the use of transit and active transportation, which decreases regional dependence on passenger vehicles (DCP, 2016). Alternative 5 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job

centers and UCLA via the UCLA Gateway Plaza Station. Alternative 5 would not conflict with the goals and strategies of Mobility Plan 2035 to reduce GHG emissions.

Overall, Alternative 5 would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions; therefore, impacts would be less than significant.

Alternative 6

Impact Statement

Construction Impact: Less than Significant

Operational Impact: Less than Significant

Construction Impacts

Construction of Alternative 6 would generate short-term GHG emissions related to off-road equipment, mobile sources, and electricity consumption. Alternative 6 construction would comply with Metro's Green Construction Policy which requires idling restrictions for off-road equipment and trucks, using trucks with model years 2007 or newer, requiring contractors to use renewable diesel for all diesel engines, and implementing best management practices, such as using electric powered equipment in lieu of diesel equipment where available. Upon completion of Alternative 6 construction, these emissions would cease. As GHG emissions are exclusively cumulative impacts, the Alternative 6 amortized construction emissions were included with the long-term operational emissions for Alternative 6. Based on the discussion below, annual operational emissions, which included amortized construction emissions, were found to not conflict with plans or policies to reduce GHG emissions; therefore, impacts for construction-related GHG emissions would be less than significant.

Operational Impacts

Plans, policies, and regulations focused on reducing GHG emissions occur at the state, regional, and local levels. At the state level, these efforts are guided primarily by AB 32, Senate Bill (SB) 32, AB 1279, and the *2022 Scoping Plan* (CARB, 2022). At the regional level, the 2024-2050 RTP/SCS contains strategies for reducing GHG emissions within the Sustainable Development focus area, as well as Metro's 2019 CAAP (Metro, 2019b) and *2020 Moving Beyond Sustainability* (Metro, 2020a). Lastly at the local level, relevant plans include the City of Los Angeles' 2015 pLAN (City of Los Angeles Mayor's Office, 2015) and Mobility Plan 2035 (DCP, 2016). The following sections discuss the consistency of Alternative 6 with these state, regional, and local plans for reducing GHG emissions.

Consistency with AB 32, SB 32, AB 1279, and 2022 Scoping Plan

AB 32, SB 32, and AB 1279 outline the state's GHG emissions reduction targets for 2020, 2030, and 2045, respectively. In 2008 and 2014, CARB adopted the *2008 Scoping Plan* and the 2014 First Update, respectively, as a framework for achieving the emissions reduction targets in AB 32 (CARB, 2008a, 2014). These plans outline a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. CARB adopted *2017 Scoping Plan* in November 2017 (CARB, 2017) as a framework to achieve the 2030 GHG reduction goal described in SB 32, which is to reduce statewide GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030. Most recently, the *2022 Scoping Plan* was adopted in September 2022 and outlines how the state will achieve carbon neutrality and reduce statewide GHG emissions 85 percent below 1990 levels by 2045. The analysis year for Alternative 6 is 2045 (horizon year); therefore, the statewide GHG emissions reduction target for 2045 is the statutory statewide milestone target that is applicable to Alternative 6.

As discussed in Section 3.7.4, Existing Conditions, the transportation sector is the largest contributor to statewide GHG emissions. Similarly, the *2022 Scoping Plan* focuses heavily on strategies and actions to reduce GHG emissions from the transportation sector, such as reducing VMT through transportation infrastructure that aligns with the state's climate goals. Alternative 6 would be consistent with this objective because it would reduce regional daily VMT by 695,400 miles per day (compared to 2045 without Project conditions), resulting in an overall net reduction in annual GHG emissions.

The *2022 Scoping Plan* also focuses on transitioning commercial building energy from fossil fuel sources to non-combustion alternatives. Alternative 6 would be consistent with this effort because it would comply with LAMC Section 99.04.106.8, which requires all newly constructed buildings to be all-electric buildings. Additionally, Alternative 6 would comply with design requirements for components outlined in *Moving Beyond Sustainability*, such as achieving LEED sustainable certifications (or Envision Version certification (currently version 3) where LEED is not applicable) and Tier 2 of the CALGreen. Overall, Alternative 6 would not conflict with the state goals and strategies for reducing GHG emissions.

Consistency with the 2024-2050 RTP/SCS

the 2024-2050 RTP/SCS is a long-range planning document that balances future mobility and housing needs with economic, environmental, and public health goals in the SCAG region. One of the key strategies of the plan is to integrate land use, housing, and transportation planning to ensure sustainable regional growth. The SCS portion of the 2024-2050 RTP/SCS includes a combination of transportation and land use strategies to meet GHG reduction goals, such as emphasizing land use patterns that facilitate multimodal access to work, educational and other destinations; focusing on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets; and encouraging design and transportation options that reduce the reliance on solo car trips. Alternative 6 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers, including a direct connection with UCLA via the UCLA Gateway Plaza Station.

Implementation of the 2024-2050 RTP/SCS would achieve regional GHG reductions relative to 2005 SCAG areawide levels of approximately 8 percent in 2020 and approximately 19 percent by 2035 (SCAG, 2024). Additionally, SCAG indicates that implementation of the 2024-2050 RTP/SCS would reduce daily VMT per capita by 6.3 percent compared to the SCAG 2050 Baseline scenario. The SCAG 2050 Baseline scenario represents how the region would perform without implementation of the 2024-2050 RTP/SCS. As shown in Table 3.7-21, implementation of Alternative 6 would result in a net reduction of GHG emissions and would directly contribute to meeting the objectives and emission reduction targets outlined in *Connect SoCal*. Overall, Alternative 6 would not conflict with the goals and strategies of the 2024-2050 RTP/SCS to reduce VMT and associated GHG emissions.

Consistency with Metro Plans

Metro has developed policies directed toward controlling GHG emissions through a variety of plans over the last decade. The most recent and relevant plans are the 2019 CAAP and Moving Beyond Sustainability, which builds upon previous commitment to environmental and sustainability stewardship. The 2019 CAAP set a goal of reducing GHG emissions by 79 percent relative to 2017 by 2030, and 100 percent by 2050. Moving Beyond Sustainability also includes goals of reducing GHG emissions by 100 percent relative to 2017 by 2050 and displacing or preventing GHG emissions. As a Metro project, Alternative 6 would inherently be required to be consistent with goals and strategies for each of these plans. As shown in Table 3.7-21, implementation of Alternative 6 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals for both of these plans. Overall, Alternative 6 would not conflict with the goals and strategies of Metro's plans to reduce GHG emissions.

Consistency with Sustainable City pLAN

The 2019 updates to *L.A.'s Green New Deal, Sustainable City pLAN* (the pLAN) (City of Los Angeles Mayor's Office, 2019) included the First 4-Year Update to the 2015 pLAN (City of Los Angeles Mayor's Office, 2015), which expounded in more detail the vision to achieve a sustainable future that entails a carbon-neutral economy by 2050. The 2019 updates to the pLAN accelerate targets from the 2015 pLAN for supplying renewable energy, increasing local water sourcing, reducing building energy, reducing VMT per capita, reducing municipal GHG emissions, increasing the percentage of zero-emission passenger and city-fleet vehicles, building new housing near transit, and increasing the number of green jobs.

The 2019 updates to the pLAN would accelerate GHG reductions targets including reducing GHG emissions by 50 percent by 2025 and 73 percent by 2035, and becoming carbon neutral by 2050, all relative to a 1990 baseline. As shown in Table 3.7-21, implementation of Alternative 6 would result in a net reduction in GHG emissions compared to future conditions, thus supporting the GHG reduction goals. Additionally, Alternative 6 would provide access to a safe and efficient transit system located in close proximity to dense urban communities near major job centers and a direct connection to UCLA, and would be developed to meet sustainable certifications, such as Envision, LEED, and CALGreen building codes. Overall, Alternative 6 would not conflict with the goals and strategies of the 2019 updates to the pLAN to reduce GHG emissions.

Consistency with City of Los Angeles Mobility Plan 2035

Mobility Plan 2035 emphasizes the efficacy of multimodal street design in reducing GHG emissions through encouraging the use of transit and active transportation, which decreases regional dependence on passenger vehicles (DCP, 2016). Alternative 6 would support these strategies by providing access to a safe, sustainable, and efficient transit system located in dense urban communities with major job centers and UCLA via the UCLA Gateway Plaza Station. Alternative 6 would not conflict with the goals and strategies of Mobility Plan 2035 to reduce GHG emissions.

Overall, Alternative 6 would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions; therefore, impacts would be less than significant.

Maintenance and Storage Facilities

As described in Section 3.7.2, GHG emissions associated with both the construction and operation of each maintenance and storage facility were calculated as part of the emissions inventories for each Project Alternative. As described under each Alternative, the proposed MSF(s) associated with each Alternative would include sustainability measures such as LEED sustainable certifications. Please refer to the impact discussion for each Alternative for detail on potential emissions associated with each MSF.

3.7.6 Mitigation Measures

No mitigation measures are required.

Impacts After Mitigation

No mitigation measures are required; impacts are less than significant.



Table 3.7-23. 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
Construction							
Impact GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
Impact GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	PS	LTS	LTS	LTS	LTS	LTS
Impacts After Mitigation	Impacts Before Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	SU	LTS	LTS	LTS	LTS	LTS
Operational							
Impact GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA	NA	NA
Impact GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Impacts Before Mitigation	LTS	LTS	LTS	LTS	LTS	LTS
	Applicable Mitigation	PS	LTS	LTS	LTS	LTS	LTS
Impacts After Mitigation	Impacts Before Mitigation	NA	NA	NA	NA	NA	NA
	Impacts After Mitigation	SU	LTS	LTS	LTS	LTS	LTS

Source: HTA, 2024

- Alt = Alternative
- GHG = greenhouse gas
- LTS = less than significant
- NA = not applicable
- PS = Potentially Significant
- SU = significant and unavoidable



Table 3.7-24. Summary of Mitigation Measures and Impacts Before and After Mitigation for the Maintenance and Storage Facilities

CEQA Impact Topic	MRT MSF Base Design (Alts 1 and 3)	MRT MSF Design Option 1 (Alts 1 and 3)	Electric Bus MSF (Alt 1)	HRT MSF (Alts 4 and 5)	HRT MSF (Alt 6)
<i>Construction</i>					
Impact GHG-1: Would the project result in greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Impacts Before Mitigation	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS
Impact GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Impacts Before Mitigation	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS
<i>Operational</i>					
Impact GHG-1: Would the project result in greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Impacts Before Mitigation	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS
Impact GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Impacts Before Mitigation	LTS	LTS	LTS	LTS
	Applicable Mitigation	NA	NA	NA	NA
	Impacts After Mitigation	LTS	LTS	LTS	LTS

Source: HTA, 2024

- Alt = Alternative
- GHG = greenhouse gas
- LTS = less than significant
- NA = not applicable