3.9 GREENHOUSE GAS EMISSIONS

3.9.1 INTRODUCTION

This discussion provides an evaluation of K Line Northern Extension (KNE) as it relates to greenhouse gas (GHG) emissions. It includes descriptions of the federal, state, and local regulatory setting, existing conditions, and the impacts from construction and operation of the proposed alignments and stations, design option, and maintenance and storage facility (MSF), as well as mitigation measures where applicable. For more detailed information, refer to the KNE Greenhouse Gas Emissions Technical Report (Appendix 3.9-A).

3.9.2 REGULATORY FRAMEWORK

3.9.2.1 FEDERAL

The Clean Air Act of 1970 (CAA) and subsequent amendments regulate air emissions from stationary and mobile sources. A 2007 United States Supreme Court ruling (Massachusetts et al. v. Environmental Protection Agency et al. [U.S. Supreme Court No. 05–1120]) found that GHGs are air pollutants under the CAA and can be regulated by the U.S. Environmental Protection Agency (USEPA). On December 7, 2009, the Final Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the CAA was signed by the USEPA administrator. The endangerment finding states that current and projected concentrations of the six key well-mixed GHGs in the atmosphere—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons, and sulfur hexafluoride—threaten the public health and welfare of current and future generations. Furthermore, it states that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare (USEPA 2023). The endangerment finding did not impose any requirements on industry or other entities, but it was a prerequisite for implementing GHG emissions standards for vehicles.

The following federal laws and regulations are relevant to construction and operation of the project:

- Corporate Average Fuel Economy and GHG Emissions Standards for Vehicles
- Safer Affordable Fuel-Efficient Vehicles Rule
- Emissions Standards for Construction Equipment
- United States Department of Transportation Climate Action Plan
- Federal Transit Administration Climate Change Adaptation Initiative
- Federal Highway Administration Carbon Reduction Program

3.9.2.2 STATE

The following state laws and regulations are relevant to construction and operation of the project:

- Assembly Bill 1493, California Advanced Clean Cars Program
- Executive Order S-3-05, GHG Emissions Reduction Targets
- Assembly Bill 32, Global Warming Solutions Act of 2006
- Executive Order S-01-07, Low Carbon Fuel Standard
- Senate Bill (SB) 375, Sustainable Communities and Climate Protection Act of 2008
- Executive Order S-13-08, Sea Level Rise
- Executive Order B-30-15 and Senate Bill 350, New GHG Emissions Reduction Targets
- Senate Bill 32, Extending the Global Warming Solutions Act of 2006
- 2017 Assembly Bill (AB) 32 Climate Change Scoping Plan (2017 AB 32 Scoping Plan)
- Senate Bill 100, 100 Percent Clean Energy Act of 2018
- California Climate Investments Program
- Executive Order N-19-19
- Executive Order N-79-20
- California Advanced Clean Cars II Program
- California State Transportation Agency (CalSTA) Climate Action Plan for Transportation Infrastructure (CAPTI)
- 2022 Assembly Bill 32 Scoping Plan for Achieving Carbon Neutrality (2022 AB 32 Scoping Plan)

3.9.2.3 REGIONAL

The following regional plans and regulations are relevant to construction and operation of the project:

- Policy on Global Warming and Stratospheric Ozone Depletion, South Coast Air Quality Management District (SCAQMD)
- Interim California Environmental Quality Act (CEQA) GHG Significance Threshold for Stationary Sources, Rules and Plans, SCAQMD

3.9.2.3.1 SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

The Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization for the six-county region that includes Los Angeles, Orange, Riverside, Ventura, San Bernardino, and Imperial Counties. Every four years SCAG updates Connect SoCal, its Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS), which meets federal and state requirements for infrastructure and sustainable planning. The latest adopted version of Connect SoCal, the 2020 RTP/SCS, includes a strong commitment to reduce emissions from transportation sources to comply with SB 375. The 2020 RTP/SCS charts a course for closely integrating land use and transportation

planning, including in areas labeled as High Quality Transit Areas, which reflect areas with rail transit service or bus service where lines have peak headways of less than 15 minutes. Major themes in the 2020 RTP/SCS that are relevant to the project include integrating strategies for land use and transportation, striving for sustainability, protecting and preserving the existing transportation infrastructure, increasing capacity through improved system management, and giving people more transportation choice (SCAG 2020).

3.9.2.4 LOCAL

Metro has implemented a robust sustainability program since 2007. The following plans and policies are relevant to construction and operation of the project:

- Metro Sustainability Implementation Plan (2008)
- Metro Green Construction Policy (2011, updated in 2018)
- Metro Countywide Sustainability Planning Policy (2012)
- Metro Rail Design Criteria (2017)
- Metro Vision 2028 Strategic Plan (2018a)
- Metro Systemwide Station Design Standards Policy (2018b)
- Climate Action and Adaptation Plan (CAAP) (2019)
- Moving Beyond Sustainability Strategic Plan (MBSSP) (2020)

Los Angeles County, the City of Los Angeles, and the City of West Hollywood have climate action plans, general plan policies, ordinances, and municipal codes pertaining to GHG emissions. All the climate action plans, including the Community Climate Action Plan (CCAP) of the Los Angeles County 2035 General Plan (soon to be replaced by the Los Angeles County Climate Action Plan, scheduled for adoption in March 2024), the City of Los Angeles' Sustainable City pLAn (2015) and LA's Green New Deal (the updated version of the pLAn, 2019), and the City of West Hollywood's WeHo Climate Action Plan (2021), identify initiatives and policies to reduce GHG emissions and encourage public transportation and transit, which would support GHG emission reductions.

3.9.3 METHODOLOGY

3.9.3.1 CEQA METHODOLOGY

The purpose of this analysis is to evaluate the project against CEQA thresholds of significance as the basis for determining the level of impacts related to GHG emissions.

3.9.3.1.1 CONSTRUCTION IMPACTS

3.9.3.1.1.1 EMISSION BURDEN ANALYSIS

An assessment of the GHG construction impacts of the project was conducted using staging information, estimated construction schedule, and construction equipment usage details. Major

construction activities for KNE would include surveys and preconstruction; tunnel construction; utility relocation and installation work; station, crossover, and connection box construction; storage track or MSF construction; street restoration; ventilation and emergency egress construction; systems installation and facilities, including trackbed, rail, third rail, conduit, electrical substation, and communications and signaling construction; and construction of other ancillary facilities. During each phase of construction, GHG emissions would be generated from heavy-duty construction equipment, worker travel to and from the project site, and material import and export using haul trucks, delivery trucks, and cement trucks.

This assessment used emission factors from the California Air Resources Board (CARB) model for off-road vehicle and equipment emissions (OFFROAD), as well as the CARB model for on-road vehicle emissions (EMission FACtor [EMFAC]). For off-road vehicles and equipment, South Coast Air Basin-specific OFFROAD2021 emission factors, along with project-specific information on pieces of equipment for each construction phase, were used. In addition, specific pieces of equipment are required to meet Tier 4 final emission standards, which are USEPA's most stringent emissions standards for engines. Tier 4 standards were modeled based on the procedures outlined in the California Emissions Estimator Model (CalEEMod) program. Types of project construction equipment required to meet USEPA's Tier 4 final emission standards when used for surface operations include:

- Crane
- Loader
- Excavator
- Telehandler
- Bore/drill rig
- Front end loader
- Welding plant
- Sweeper/scrubber

Equipment that would be used for specific subsurface operations was modeled as Tier 2. Higher-tiered equipment has not been approved for use by the Mining Safety and Health Administration for specific subsurface operations. This equipment includes:

- Excavator
- Loader
- Rubber-tired dozer
- Segment hauler

Tier-specific emission rates were obtained from CalEEMod. Fleet average emission rates from CARB's OFFROAD2021 model for the South Coast Air Basin were assumed to be representative for all other pieces of equipment. Emission rates for 2041, the first anticipated year of construction for any project element, were conservatively used to represent the fleet average equipment.

Worker commute, haul truck, delivery truck, and cement truck trip emissions factors were estimated using the EMFAC2021 (v.1.0.2) emission factor model for the Los Angeles County region, aggregated for all model years, all fuel types, and annual average for season in each of the calendar years from 2041 through 2050.

Using these various data sources, daily and annual construction emission levels were developed. Consistent with SCAQMD's Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans (SCAQMD 2008), construction emissions were amortized over 30 years and considered with operational emissions. As described in Section 3.9.3.2, SCAQMD's recommendations regarding quantification of GHG emissions have been followed for the project even though there are no quantitative GHG significance thresholds applicable to the project.

The MBSSP and updated Metro Green Construction Policy require the use of renewable diesel fuel if reasonably available in the vicinity of the project. Emissions benefits associated with this measure were not included in the analysis because renewable diesel emits air pollutants at the same rate as traditional diesel fuel.

3.9.3.1.2 OPERATIONAL IMPACTS

3.9.3.1.2.1 REGIONAL ROADWAY EMISSIONS ANALYSIS

The regional emission burden analysis determines a project's overall impact on GHG emissions. For KNE, an analysis was conducted based upon forecasted vehicle miles traveled (VMT) with and without the project. The regional emissions analysis was conducted for existing conditions, the 2045 without Project Conditions, and the 2045 with Project Conditions for the alignments. The year 2045 is used as the future year for analysis purposes in order to facilitate consistency with other regional planning processes. The Metro Corridor Based Model 2018c forecasts that the Hollywood Bowl Design Option would not contribute to a meaningful change in regional VMT, and no additional emissions analyses were conducted. Emission factors were obtained from CARB's EMFAC2021 using parameters set within the program for the SCAQMD, including the regional mix of vehicle type, vehicle age, and vehicle speeds.

3.9.3.1.2.2 LIGHT RAIL VEHICLE OPERATIONS EMISSIONS ANALYSIS

The project would require electrical power for vehicle propulsion, and the remote generation of this power would result in increased GHG emissions. To determine the increased GHG burden, CalEEMod program emission factors for the Southern California Edison (SCE) utility provider were multiplied by the estimated power demand for the project. CalEEMod uses SCE carbon intensity factors based on SCE's 2019 clean energy portfolio: 390.98 pounds per megawatt-hour (lb/MWhr) for CO_2, 0.033 lb/MWhr for CH_4, and 0.004 lb/MWhr for N_2O. Approximately 52 percent of SCE's total energy generation in 2019 was from renewable sources. The presented emissions from electricity production are conservative because it is expected that these levels will approach zero in the future due to the state's Renewables Portfolio Standard program, which requires all of the state's electricity to come from carbon-free resources by 2045.

3.9.3.1.2.3 STATION OPERATIONS EMISSIONS ANALYSIS

The project would require electrical power for station operation, and the remote generation of this power would result in increased GHG emissions. Estimates of GHG emissions that would be generated by sources involved in operation of the light rail stations were quantified using the CalEEMod Version 2020.4.0. Each station was represented by a 13,800-square-foot enclosed facility with an elevator and escalator access. CalEEMod uses default assumptions to estimate electricity use and applies the carbon intensity factors associated with SCE's 2019 clean energy portfolio. The presented emissions from electricity production are conservative because it is expected that these levels will approach zero in the future due to the state's Renewables Portfolio Standard program, which requires all of the state's electricity to come from carbon-free resources by 2045.

3.9.3.1.2.4 MSF OPERATIONS EMISSIONS ANALYSIS

Project activities associated with the MSF would occur in two parts, concurrent with Section 1 and Section 2 of each alignment.[1] Concurrently with Section 1 of the alignments, MSF facility construction would include the addition of four storage tracks to the existing Division 16 site to accommodate increased light rail vehicles (LRV) storage. Concurrently with Section 2 of the alignments, MSF facilities constructed would include expansion of the existing Division 16 MSF on the adjacent 16.5-acre site, comprising approximately 57,380 square feet of facility structures. No MSF construction would occur concurrently with Section 3 of the KNE San Vicente–Fairfax Alignment.

Operation of the MSF additions would result in GHG emissions associated with vehicle trips to and from the facility, electricity and natural gas usage, water and wastewater conveyance, and solid waste disposal. Estimates of GHG emissions that would be generated by sources involved in operation of the MSF additions were quantified using the CalEEMod Version 2020.4.0. CalEEMod uses default assumptions to estimate electricity, natural gas, water, and solid waste needs. The presented emissions from electricity production are conservative because it is expected that these levels will approach zero in the future due to the state's Renewables Portfolio Standard program, which requires all of the state's electricity to come from carbon-free resources by 2045. Non-electric sources of GHGs would not be affected by this requirement. Employee commute trips associated with the MSF are included in the regional VMT projections used to evaluate the change in regional vehicle emissions resulting from KNE.

[1] As discussed in Section 2.4.6, Construction Sections, of Chapter 2, KNE would be constructed in either two sections (for the KNE Fairfax and La Brea Alignments) or three sections (for the KNE San Vicente–Fairfax Alignment), referred to as Section 1, Section 2, and Section 3. Together these comprise KNE. This report provides an analysis of KNE (i.e., completion of Section 1, Section 2, and Section 3).

3.9.3.2 SIGNIFICANCE THRESHOLDS

In accordance with Appendix G of the 2022 CEQA Guidelines, the project would have a significant impact related to GHG emissions if it would:

- Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Section 15064.4 of the CEQA Guidelines requires the lead agency to make a good faith effort to describe, calculate, or estimate the GHG emissions resulting from a proposed project but leaves the methodology to the discretion of the lead agency as long as it is supported by substantial evidence. Per Section 15064.4, the following factors should be considered when determining the significance of impacts from GHG emissions on the environment:

- Increase or decrease in GHG emissions resulting from the proposed project compared to the existing setting
- Exceedance of any threshold of significance determined to apply to the proposed project
- Compliance with applicable plans, policies, or regulations

Additionally, Section 15064.4 of the CEQA Guidelines clarifies that the lead agency should consider whether a project's incremental contribution to the effects of climate change would be cumulatively considerable when determining significance. By nature, GHGs persist in the atmosphere for long periods and build up over time. Regional and global effects of climate change are a result of combined GHG concentrations in the atmosphere. As a result, individual project-level GHG emissions must be considered together and in conjunction with existing GHG levels and reasonably foreseeable future GHG emissions when assessing project-level GHG impacts.

In a CEQA analysis, project-related impacts are typically compared to existing (without project) conditions. However, pursuant to CEQA Guidelines Section 15125(a)(2), a lead agency may 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 2019 existing conditions baseline year and the 2045 horizon year for the travel demand forecasting (i.e., the 2019 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 an accurate and meaningful representation of project-related impacts). The consideration of regional background growth is critical when determining future effects for transit projects designed to reduce traffic congestion and associated GHG impacts over time. Isolating the project's impacts from other regional changes in the environment would result in a misleading analysis. Therefore, for the quantification of GHG emissions, project emissions will be defined as the difference between the project (2045) and the existing conditions in 2019 adjusted for regional

growth (i.e., the projected future conditions baseline) that would occur by 2045. In this case, the projected future conditions baseline is the 2045 without Project Conditions.

SCAQMD adopted its Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans on December 5, 2008 (SCAQMD 2008). SCAQMD's interim guidance recommends a tiered approach to determining significance for GHG emissions, and states that the GHG emissions analysis should include direct, indirect, and if possible, life-cycle emissions during construction and operation. A significance threshold for stationary source/industrial projects, which includes construction emissions amortized over 30 years and added to operational GHG emissions, is included in the guidance. SCAQMD has not established a transportation-specific threshold of significance for GHG emissions. As a result, SCAQMD's recommendations regarding quantification of emissions have been followed for the project, but a quantitative threshold was not used to analyze GHG emission impacts. GHG emissions are presented in units of carbon dioxide equivalent (CO_2e).

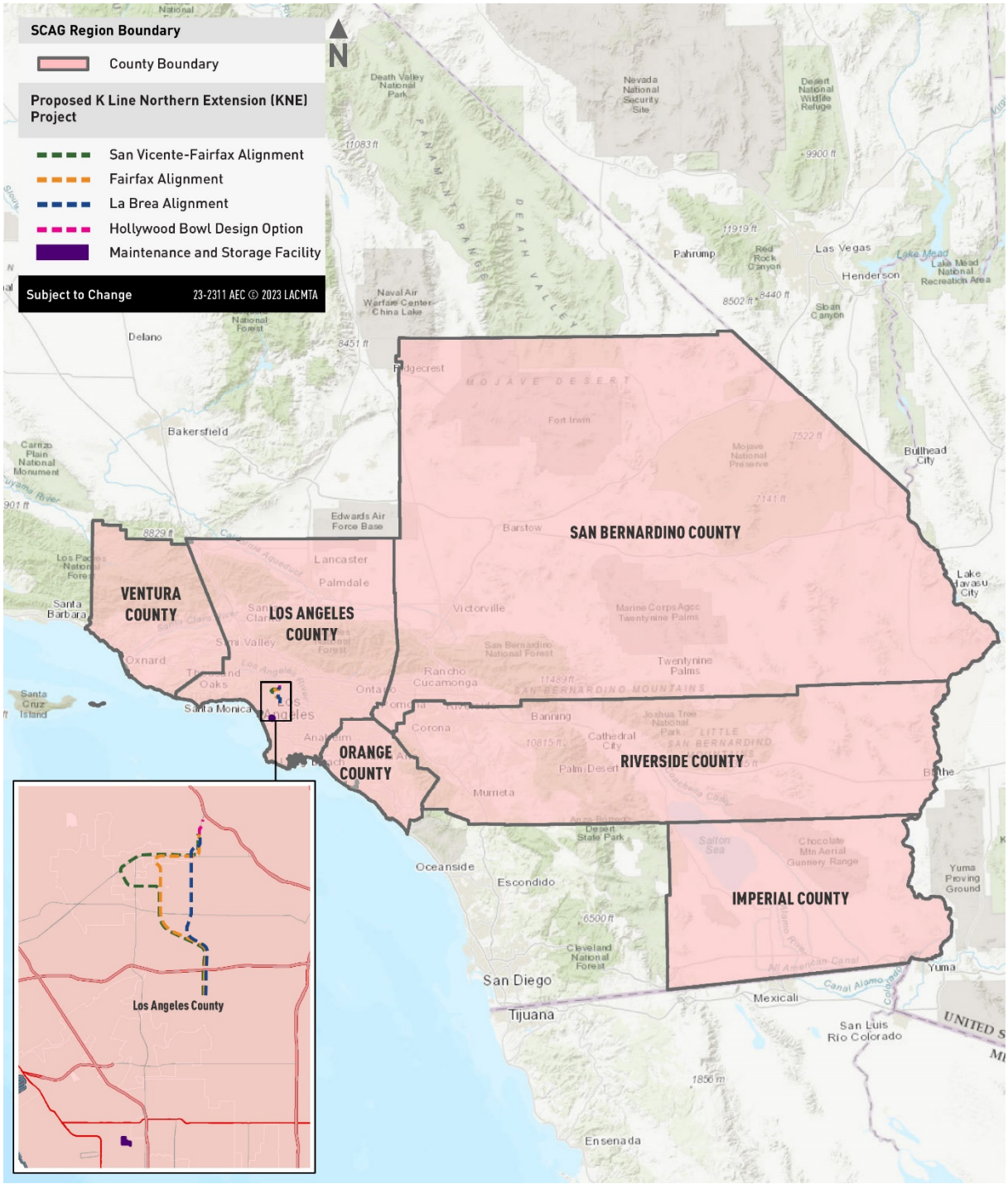
The Governor's Office of Planning and Research (OPR) released technical advisories for the streamlined review of transportation projects under CEQA in 2018 and 2021 (OPR 2018, 2021). In these advisories, OPR acknowledges the benefits of certain types of transportation projects (including light rail projects) that would reduce VMT and recommends the streamlining of GHG emissions impact analyses for these projects because they would reduce GHG emissions, improve and increase multimodal transportation networks, and facilitate mixed-use development. OPR does not propose a quantitative threshold for determining significance under CEQA, but OPR's recommendations will be considered when assessing significance for the project.

As recommended in the CEQA Guidelines and SCAQMD's interim guidance, estimated GHG emissions associated with construction and operation of the project were quantified and considered in impact determinations. Since no applicable quantitative GHG significance thresholds have been established, estimated GHG emissions associated with the project were assessed qualitatively in accordance with the referenced guidance.

3.9.4 RESOURCE STUDY AREA

As shown in Figure 3.9-1, the resource study area (RSA) for GHG emissions impacts is defined as the SCAG region, which encompasses Los Angeles, Orange, Riverside, Ventura, San Bernardino, and Imperial Counties. The RSA was defined by the GHG emission sources that would affect or would be affected by the project. Specifically, this report analyzes impacts within the SCAG region to capture the changes in traffic-related VMT that could occur as a direct result of the alignments as determined by the project traffic analysis (refer to Appendix 3.16-A, KNE Transportation Technical Report). The RSA applies to all alignments and stations, the design option, and the MSF.

FIGURE 3.9-1. RESOURCE STUDY AREA



Source: Connect Los Angeles Partners 2024

3.9.5 EXISTING SETTING

This existing setting discussion summarizes current conditions related to GHGs within and near the KNE RSA.

3.9.5.1 REGIONAL SETTING

GHGs include any gases that absorb infrared radiation in the atmosphere. GHGs trap heat in the atmosphere, keeping the earth's surface warmer than it otherwise would be. GHGs include, but are not limited to, water vapor, CO_2, CH_4, N_2O, hydrochlorofluorocarbons, ozone, HFCs, perfluorocarbons, and sulfur hexafluoride. GHGs contribute to the global warming trend, a regional and ultimately worldwide concern. What was once a natural phenomenon of climate has been changing because of human activities, resulting in an increase in CO_2. According to National Oceanic and Atmospheric Administration (NOAA) and National Aeronautics and Space Administration data, the earth's average surface (land and ocean) temperature has increased by an average of 0.14° Fahrenheit (0.08° Celsius) per decade since 1880, or about 2° Fahrenheit in total. 2022 was the sixth-warmest year on record based on NOAA's temperature data, and the 10 warmest years in the historical record have all occurred since 2010 (NOAA 2023). Most of the warming in recent decades is likely the result of human activities. Other aspects of the climate are also changing, such as rainfall patterns, snow and ice cover, and sea level.

Some GHGs, such as CO_2, occur naturally and are emitted to the atmosphere through both natural processes and human activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities. GHGs differ in their ability to trap heat. For example, 1 ton of CO_2 emissions has a different effect than 1 ton of CH_4 emissions. To compare emissions of different GHGs, inventory compilers use a weighting factor called a global warming potential (GWP). To use a GWP, the heat-trapping ability of 1 metric ton (1,000 kilograms) of CO_2 is taken as the standard, and emissions are expressed in terms of CO_2 equivalents, but can also be expressed in terms of carbon equivalents. Therefore, the GWP of CO_2 is one, and the GWP of CH_4 is 25, whereas the GWP of N_2O is 298.

The principal GHGs that enter the atmosphere because of human activities are described below:

- **CO_2:** CO_2 enters the atmosphere via the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- **CH_4:** CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal solid waste landfills.
- **N_2O:** N_2O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

- Fluorinated Gases: Fluorinated gases are synthetic, powerful GHGs that are emitted from a variety of household, commercial, and industrial applications and processes. Fluorinated gases (including HFCs, perfluorocarbons, and sulfur hexafluoride) are sometimes used as substitutes for ozone-depleting substances (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high-3 gases.

3.9.5.1.1 EMISSIONS INVENTORY

As a requirement of AB 32, CARB constructed a GHG emissions inventory to determine the 1990 emission level and 2020 emission limit, then later updated it using the Intergovernmental Panel on Climate Change (IPCC) fourth assessment report for GWPs (IPCC 2007). GHGs are inventoried on a statewide basis because their effects are not localized or regional; this is due to their rapid dispersion into the global atmosphere. Since climate change is a global and not a regional issue, specific inventories have not been prepared for the individual air basins. The original statewide 2020 limit of 427 million metric tons (MMT) CO_2e was approved on December 6, 2007, and was not sector-specific (CARB 2007). A revised statewide 2020 limit of 431 MMT CO_2e was approved on May 22, 2014, and was also not sector-specific (CARB 2014). Since development of the 1990 emissions inventory, CARB has prepared a statewide inventory for years 2000 through 2020. A summary of the 2020 statewide GHG emissions is included in Table 3.9-1.

TABLE 3.9-1. 2020 CALIFORNIA STATEWIDE GHG EMISSIONS INVENTORY

GHG EMISSIONS CATEGORY	2020 (MMT CO_2e)	PERCENTAGE OF TOTAL[1]
Transportation	135.8	37%
Electric Power	59.5	16%
Commercial and Residential	38.7	10%
Industrial	73.3	20%
Recycling and Waste	8.9	2%
High GWP[2]	21.3	6%
Agriculture	31.6	9%
Total California Emissions	***369.2***	**–**

Source: CARB 2022a
[1] Rounded to the nearest percentage. Category percentages do not sum to 100 percent due to rounding.
[2] High GWP refers to a set of refrigerants with high global warming potential.
GHG = greenhouse gases; GWP = global warming potential; MMT CO_2e = million metric tons of carbon dioxide equivalent

3.9.5.1.2 REGIONAL HIGHWAY TRAFFIC EMISSIONS

Emissions were estimated for 2019 regional traffic and for the 2045 without Project Conditions. Data on VMT in the region and emission factors from the EMFAC2021 model were used to estimate the GHG emissions. The emissions calculations were based on the total VMT in the region and the average speed on the roadway network. Table 3.9-2 summarizes the results of the GHG emissions from existing conditions.

TABLE 3.9-2. EXISTING AND 2045 WITHOUT PROJECT CONDITIONS ANNUAL REGIONAL ROADWAY TRAFFIC GHG EMISSIONS

EMISSION SOURCE	EMISSIONS (METRIC TONS PER YEAR)			
	CO_2	CH_4	N_2O	CO_2e[1]
2019 Existing Conditions Regional Traffic	69,457,283	58,843	967,800	70,483,927
2045 without Project Conditions Regional Traffic	60,307,723	16,270	783,883	61,107,876

Source: Connect Los Angeles Partners 2023
[1] CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; CH_4 = methane; GHG = greenhouse gases; GWP = global warming potential; N_2O = nitrous oxide

3.9.6 PROJECT MEASURES

Project measures are design features, best management practices, or other commitments that Metro would implement as part of all proposed alignments and stations, the design option, and the MSF to reduce or avoid environmental effects associated with project construction and operation. Project measures are not the same as mitigation measures, which are used to reduce an environmental impact's significance level. Where applicable, project measures are also discussed in Section 3.9.7 as part of the evaluation of environmental impacts.

Construction and operation of the project would result in the release of criteria pollutants and GHG emissions. Appendix 3.3-A, KNE Air Quality Technical Report, describes project measures to limit release of these emissions and ensure all equipment operates at optimal manufacturer specifications. While project measures were not developed specifically for GHG emissions, the following air quality project measures are relevant to GHG emissions.

3.9.6.1 PM AQ-1: METRO GREEN CONSTRUCTION POLICY

Established by formal adoption of the Green Construction Policy in 2011, Metro commits to the following construction equipment requirements, construction best management practices (BMPs), and implementation strategies for all construction projects performed on Metro properties or rights-of-way (Metro 2011):

- Construction equipment shall incorporate, where feasible, emissions-reducing technology such as hybrid drives and specific fuel economy standards.

- Equipment shall be maintained according to manufacturer specifications.
- Idling of construction equipment and heavy-duty trucks shall be restricted to a maximum of five minutes when not in use (certain exceptions apply based on CARB exemptions).
- Traffic speeds shall be limited on all unpaved roads to 15 miles per hour or less.
- All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier 4 off-road emission standards at a minimum.
- All on-road heavy-duty trucks with a gross vehicle weight rating greater than or equal to 14,000 pounds shall have engines meeting U.S. 2010 on-road emission standards.
- Where applicable and feasible, coordination shall occur with local jurisdictions to improve traffic flow by signal synchronization during construction activities.
- Electric power shall be used in lieu of diesel power where available.
- Generators: Every effort shall be made to use grid-based electric power at any construction site, where feasible. Where access to the power grid is not available, on-site generators must:
  - Meet a 0.01 gram per brake-horsepower-hour standard for particulate matter; or
  - Be equipped with Best Available Control Technology for particulate matter emissions reductions.
- Inspections: Metro shall conduct inspections of construction sites and affected off-road and on-road equipment and generators as well as compliance with air quality rules.
- Records: Prior to Notice to Proceed to commence construction and to be verified afterward consistent with project contract requirements and through enforcement provisions above, the Contractor shall submit to Metro the following information for all construction equipment to be used on Metro properties or rights-of-way:
  - A certified statement that all construction equipment used conforms to the requirements specified above;
  - A list of all the equipment and vehicles (i.e., off-road equipment, include the CARB-issued Equipment Identification Number) to be used; and
  - A copy of each Contractor's certified U.S. Environmental Protection Agency rating and applicable paperwork issued either by CARB, SCAQMD, and any other jurisdiction that has oversight over the equipment.

3.9.6.2 PM AQ-3: METRO 2020 MOVING BEYOND SUSTAINABILITY STRATEGIC PLAN

Construction and operation of the project will adhere to the commitments established by the MBSSP 2020 including, but not limited to, the application of renewable diesel requirements for contractors, the implementation of the Construction and Demolition Debris Policy, the identification of opportunities to decarbonize fuel sources at construction sites, the use of electric medium- and heavy-duty equipment during construction, and the design and build of capital projects to CalGreen Tier 2 standards (Metro 2020).

3.9.6.3 PM AQ-4: METRO DESIGN STANDARDS

The project will be designed in accordance with the Metro Rail Design Criteria and the Metro Systemwide Station Design Standards Policy, which includes the installation of high-efficiency LED lighting in all fixtures to reduce electricity consumption (Metro 2017, 2018b).

3.9.7 IMPACT EVALUATION AND MITIGATION MEASURES

This analysis presents the construction and operational impacts for GHG emissions, as well as any applicable mitigation measures associated with KNE. A summary of the impact conclusions and applicable mitigation measures is found in Table 3.9-18 in Section 3.9.7.1.

3.9.7.1 IMPACT GHG-1: EMISSION GENERATION

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

3.9.7.1.1 KNE SAN VICENTE–FAIRFAX ALIGNMENT

3.9.7.1.1.1 CONSTRUCTION IMPACTS

Less than Significant Impact. Construction emissions associated with the KNE San Vicente–Fairfax Alignment would be generated from heavy-duty construction equipment exhaust, exhaust from worker vehicle travel to and from the project site, and exhaust from haul trucks, delivery trucks, and cement trucks importing and exporting material to the project site. GHG emissions from construction were estimated following the methodology described in Section 3.9.3.1.1.1.

As noted above, the KNE San Vicente–Fairfax Alignment would be constructed in three sections. Section 1 would extend from the Expo/Crenshaw Station to the Wilshire/Fairfax Station. Section 2 would extend from the Section 1 terminus at the Wilshire/Fairfax Station to the San Vicente/Santa Monica Station. Section 3 would extend from the Section 2 terminus at the San Vicente/Santa Monica Station to the northern terminus at either the Hollywood/Highland Station or the optional Hollywood Bowl Station. This analysis assumes that each of the three sections of the alignment would be built sequentially, not concurrently. As a result of uncertainty in the timing for construction of each section, 2041 was used as a representative "Year 1" for all sections when calculating GHG emissions. Due to the inherently cumulative nature of GHG emissions and their influence on climate, GHG emissions from all three construction sections were considered together when determining impacts.

Table 3.9-3 presents the construction GHG emissions by source for each section of the alignment. In addition, the MSF is an essential element in supporting the reliable operation of a light rail transit (LRT) system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF construction are also presented in Table 3.9-3. Construction of the alignment and MSF would generate approximately 114,830 metric tons CO_2e.

TABLE 3.9-3. KNE SAN VICENTE–FAIRFAX ALIGNMENT CONSTRUCTION GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$)				
	SECTION 1	SECTION 2	SECTION 3	MSF	KNE SAN VICENTE–FAIRFAX ALIGNMENT TOTAL[1]
Off-Road Construction Equipment	25,014	19,034	21,370	4,657	70,076
Truck Trips (Hauling, Delivery, Cement)	12,091	8,712	13,216	1,242	35,261
Worker Commute Trips	3,313	2,542	2,987	651	9,493
Total Emissions	**40,418**	**30,288**	**37,573**	**6,550**	**114,830**
Amortized Construction (30 Years)[2]	1,347	1,010	1,252	218	3,828

Source: Connect Los Angeles Partners 2023
[1] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF construction have been included in the alignment total.
[2] Amortized Construction = Total Emissions divided by 30 years.
Note: The KNE San Vicente–Fairfax Alignment would be constructed in three sections, referred to as Section 1, Section 2, and Section 3.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

SCAQMD guidance for CEQA assessments states that construction-related GHG emissions that occur over a relatively short-term period should be amortized over a 30-year period and considered with operational emissions due to the inherently cumulative nature of GHG emissions and the persistence of GHGs in the atmosphere (SCAQMD 2008). The amortized GHG emissions rate during construction of the alignment and MSF would be approximately 3,828 $MTCO_2e$ annually. Amortized GHG construction emissions are considered in conjunction with operational GHG emissions from the alignment and MSF in Table 3.9-4.

All construction activities would be conducted in accordance with project measures PM AQ-1 and PM AQ-3 to avoid and minimize emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions as compared to 2045 without Project Conditions. Metro recognizes transportation mode shift to transit as the primary contributor to GHG-emissions displacement, and direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with operation of the alignment (see Table 3.9-4). Therefore, the KNE San Vicente–Fairfax Alignment would have a less than significant impact during construction.

TABLE 3.9-4. KNE SAN VICENTE–FAIRFAX ALIGNMENT OPERATIONAL GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$ PER YEAR)
Amortized Construction[1]	3,828
Regional Traffic	61,093,765
Light Rail Operations	784
Station Operation	120
MSF Operation	91
Total Emissions[2,3]	**61,098,588**
Emissions without Project	61,107,876
Change in Emissions due to Project	-9,288

Source: Connect Los Angeles Partners 2023
[1] Amortized Construction = Total Emissions divided by 30 years.
[2] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF operation have been included in the alignment total.
[3] Total Emissions in 2045 were calculated using 2019 carbon intensity factors. Actual emissions in 2045 from electricity generation are expected to approach zero, assuming a zero-carbon energy portfolio is achieved by 2045.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

3.9.7.1.1.2 OPERATIONAL IMPACTS

Less than Significant Impact. Operational emissions associated with the KNE San Vicente–Fairfax Alignment would include direct and indirect emissions after construction is completed and project operation has begun. Direct operational GHG emissions from regional roadway traffic were estimated using projected VMT in the SCAG region for each alignment, which reflects the increased transit use anticipated as a result of the project. Indirect operational GHG emissions would occur from the generation of electricity used to operate the LRVs, the lighting, and other functions of the stations. The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, direct emissions (natural gas use, water and wastewater use, and solid waste disposal) and indirect emissions (electricity generation) from operation of the MSF additions were included in the analysis. Total annual operational emissions from the alignment, including the LRVs, stations, and MSF, are summarized in Table 3.9-4.

The alignment would reduce roadway traffic VMT and the associated GHG emissions as compared to 2045 without Project Conditions; however, operation of the LRVs, stations, and MSF would increase demand for electricity. Overall, a net decrease in regional operational GHG emissions would be expected as compared to 2045 without Project Conditions. After accounting for amortized construction emissions, operation of the alignment would result in an estimated net GHG emissions reduction of 9,288 $MTCO_2e$ annually in 2045. GHG emissions presented for electricity use from LRV,

station, and MSF operation are expected to approach zero by 2045 because California's Renewables Portfolio Standard requires all of the state's electricity to come from renewable sources by 2045.

In addition to emissions decreases on the project level, KNE is a component of the RTP and would contribute to California's goal to increase mass transit under the AB 32 Scoping Plan. Implementation of the alignment would enhance regional transportation systems and contribute to planning efforts to reduce VMT and GHG emissions from transportation sources. Therefore, the KNE San Vicente–Fairfax Alignment would have a less than significant impact during operation.

3.9.7.1.2 KNE FAIRFAX ALIGNMENT

3.9.7.1.2.1 CONSTRUCTION IMPACTS

Less than Significant Impact. Construction emissions associated with the KNE Fairfax Alignment would be generated from heavy-duty construction equipment exhaust, exhaust from worker vehicle travel to and from the project site, and exhaust from haul trucks, delivery trucks, and cement trucks importing and exporting material to the project site. GHG emissions from construction were estimated following the methodology described in Section 3.9.3.1.1.1.

As noted above, the KNE Fairfax Alignment would be constructed in two sections. Section 1 would extend from the Expo/Crenshaw Station to the Wilshire/Fairfax Station. Section 2 would extend from the Section 1 terminus at the Wilshire/Fairfax Station to the northern terminus at either the Hollywood/Highland Station or the optional Hollywood Bowl Station. This analysis assumes that the two sections of the KNE Fairfax Alignment would be built sequentially, not concurrently. As a result of uncertainty in the timing for construction of each section, 2041 was used as a representative "Year 1" for all sections when calculating GHG emissions. Due to the inherently cumulative nature of GHG emissions and their influence on climate, GHG emissions from both construction sections were considered together when determining impacts.

Table 3.9-5 presents the construction GHG emissions by source for each section of the alignment and the MSF. In addition, the MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF construction are also presented in Table 3.9-5. Construction of the alignment and MSF would generate approximately 92,079 $MTCO_2e$.

TABLE 3.9-5. KNE FAIRFAX ALIGNMENT CONSTRUCTION GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$)			
	SECTION 1	SECTION 2	MSF	KNE FAIRFAX ALIGNMENT TOTAL[1]
Off-Road Construction Equipment	25,014	25,480	4,657	55,152
Truck Trips (Hauling, Delivery, Cement)	12,091	16,017	1,266	29,375
Worker Commute Trips	3,313	3,596	643	7,552
Total Emissions	**40,418**	**45,093**	**6,567**	**92,079**
Amortized Construction (30 Years)[2]	1,347	1,503	219	3,069

Source: Connect Los Angeles Partners 2023
[1] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF construction have been included in the alignment total.
[2] Amortized Construction = Total Emissions divided by 30 years.
Note: The KNE Fairfax Alignment would be constructed in two sections, referred to as Section 1 and Section 2.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

SCAQMD guidance for CEQA assessments states that construction-related GHG emissions that occur over a relatively short-term period should be amortized over a 30-year period and considered with operational emissions due to the inherently cumulative nature of GHG emissions and the persistence of GHGs in the atmosphere (SCAQMD 2008). Amortized GHG construction emissions are considered in conjunction with operational GHG emissions from the alignment and MSF in Table 3.9-6. As shown, direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with operation of the alignment.

TABLE 3.9-6. KNE FAIRFAX ALIGNMENT OPERATIONAL GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$ PER YEAR)[2]
Amortized Construction[1]	3,069
Regional Traffic	61,094,601
Light Rail Operations	630
Station Operation	94
MSF Operation	91
Total Emissions[2,3]	**61,098,485**
Emissions without Project	61,107,876
Change in Emissions due to Project	-9,391

Source: Connect Los Angeles Partners 2023
[1] Amortized Construction = Total Emissions divided by 30 years.
[2] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF operation have been included in the alignment total.
[3] Total Emissions in 2045 were calculated using 2019 carbon intensity factors. Actual emissions in 2045 from electricity generation are expected to approach zero, assuming a zero-carbon energy portfolio is achieved by 2045.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

All construction activities would be conducted in accordance with project measures PM AQ-1 and PM AQ-3 to avoid and minimize emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions as compared to 2045 without Project Conditions. Metro recognizes transportation mode shift to transit as the primary contributor to GHG-emissions displacement, and direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with operation of the KNE Fairfax Alignment. Therefore, the KNE Fairfax Alignment would have a less than significant impact during construction.

3.9.7.1.2.2 OPERATIONAL IMPACTS

Less than Significant Impact. Operational emissions associated with the KNE Fairfax Alignment would include direct and indirect emissions after construction is completed and project operation has begun. Direct operational GHG emissions from regional roadway traffic were estimated using projected VMT in the SCAG region for each alignment, which reflects the increased transit use anticipated as a result of the project. Indirect operational GHG emissions would occur from the generation of electricity used to operate the LRVs, the lighting, and other functions of the stations. The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, direct emissions (natural gas use, water and wastewater use, and solid waste disposal) and indirect emissions (electricity generation) from operation of the MSF additions were included in the analysis. Total annual operational emissions from the alignment, including the LRVs, stations, and MSF, are summarized in Table 3.9-6.

The alignment would reduce roadway traffic VMT and the associated GHG emissions as compared to 2045 without Project Conditions; however, operation of the LRVs, stations, and MSF would increase demand for electricity. Overall, a net decrease in regional operational GHG emissions would be expected as compared to 2045 without Project Conditions. After accounting for amortized construction emissions, operation of the alignment would result in an estimated net GHG emissions reduction of 9,391 $MTCO_2e$ annually in 2045. GHG emissions presented for electricity use from LRV, station, and MSF operation are expected to approach zero by 2045 because California's Renewables Portfolio Standard requires all of the state's electricity to come from renewable sources by 2045. As shown in Table 3.9-6 above, operation of the alignment would result in an estimated net GHG emissions reduction of 9,391 $MTCO_2e$ annually in 2045.

In addition to emissions decreases on the project level, KNE is a component of the RTP and would contribute to California's goal to increase mass transit under the AB 32 Scoping Plan. Implementation of the alignment would enhance regional transportation systems and contribute to planning efforts to reduce VMT and GHG emissions from transportation sources. Therefore, the KNE Fairfax Alignment would have a less than significant impact during operation.

3.9.7.1.3 KNE LA BREA ALIGNMENT

3.9.7.1.3.1 CONSTRUCTION IMPACTS

Less than Significant Impact. Construction emissions associated with the KNE La Brea Alignment would be generated from heavy-duty construction equipment exhaust, exhaust from worker vehicle travel to and from the project site, and exhaust from haul trucks, delivery trucks, and cement trucks importing and exporting material to the project site. GHG emissions from construction were estimated following the methodology described in Section 3.9.3.1.1.1.

As noted above, the KNE La Brea Alignment would be constructed in two sections. Section 1 would extend from the Expo/Crenshaw Station to the Wilshire/La Brea Station. Section 2 would extend from the Section 1 terminus at the Wilshire/La Brea Station to the northern terminus at either the Hollywood/Highland Station or the optional Hollywood Bowl Station. This analysis assumes that the two sections of the KNE La Brea Alignment would be built sequentially, not concurrently. As a result of uncertainty in the timing for construction of each section, 2041 was used as a representative "Year 1" for all sections when calculating GHG emissions. Due to the inherently cumulative nature of GHG emissions and their influence on climate, GHG emissions from both construction sections were considered together when determining impacts.

Table 3.9-7 presents the construction GHG emissions by source for each section of the alignment and the MSF. In addition, the MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF construction are also presented in Table 3.9-7. Construction of the alignment and MSF would generate approximately 79,909 $MTCO_2e$.

TABLE 3.9-7. KNE LA BREA ALIGNMENT CONSTRUCTION GHG EMISSIONS

	EMISSIONS ($MTCO_2e$)			
EMISSION SOURCE	SECTION 1	SECTION 2	MSF	KNE LA BREA ALIGNMENT TOTAL[1]
Off-Road Construction Equipment	23,409	20,459	4,607	48,474
Truck Trips (Hauling, Delivery, Cement)	10,752	12,898	1,262	24,912
Worker Commute Trips	3,135	2,780	608	6,522
Total Emissions	**37,295**	**36,137**	**6,477**	**79,909**
Amortized Construction (30 Years)[2]	1,243	1,205	216	2,664

Source: Connect Los Angeles Partners 2023
[1] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF construction have been included in the alignment total.
[2] Amortized Construction = Total Emissions divided by 30 years.
Note: The KNE La Brea Alignment would be constructed in two sections, referred to as Section 1 and Section 2.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

SCAQMD guidance for CEQA assessments states that construction-related GHG emissions that occur over a relatively short-term period should be amortized over a 30-year period and considered with operational emissions due to the inherently cumulative nature of GHG emissions and the persistence of GHGs in the atmosphere (SCAQMD 2008). Amortized GHG construction emissions are considered in conjunction with operational GHG emissions from the alignment and MSF in Table 3.9-8. As shown, direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with operation of the alignment.

All construction activities would be conducted in accordance with project measures PM AQ-1 and PM AQ-3 to avoid and minimize emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions as compared to 2045 without Project Conditions. Metro recognizes transportation mode shift to transit as the primary contributor to GHG-emissions displacement, and direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with operation of the KNE La Brea Alignment. Therefore, the KNE La Brea Alignment would have a less than significant impact during construction.

TABLE 3.9-8. KNE LA BREA ALIGNMENT OPERATIONAL GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$ PER YEAR)
Amortized Construction[1]	2,664
Regional Traffic	61,093,763
Light Rail Operations	501
Station Operation	80
MSF Operation	91
Total Emissions[2, 3]	**61,097,099**
Emissions without Project	61,107,876
Change in Emissions due to Project	-10,777

Source: Connect Los Angeles Partners 2023
[1] Amortized Construction = Total Emissions divided by 30 years.
[2] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, GHG emissions associated with MSF operation have been included in the alignment total.
[3] Total Emissions in 2045 were calculated using 2019 carbon intensity factors. Actual emissions in 2045 from electricity generation are expected to approach zero, assuming a zero-carbon energy portfolio is achieved by 2045.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

3.9.7.1.3.2 OPERATIONAL IMPACTS

Less than Significant Impact. Operational emissions associated with the KNE La Brea Alignment would include direct and indirect emissions after construction is completed and project operation has begun. Direct operational GHG emissions from regional roadway traffic were estimated using projected VMT in the SCAG region for each alignment, which reflects the increased transit use anticipated as a result of the project. Indirect operational GHG emissions would occur from the generation of electricity used to operate the LRVs, the lighting, and other functions of the stations. The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment. As such, direct emissions (natural gas use, water and wastewater use, and solid waste disposal) and indirect emissions (electricity generation) from operation of the MSF additions were included in the analysis. Total annual operational emissions from the alignment, including the LRVs, stations, and MSF, are summarized in Table 3.9-8.

The alignment would reduce roadway traffic VMT and the associated GHG emissions as compared to 2045 without Project Conditions; however, operation of the LRVs, stations, and MSF would increase demand for electricity. Overall, a net decrease in regional operational GHG emissions would be expected as compared to 2045 without Project Conditions. After accounting for amortized construction emissions, operation of the alignment would result in an estimated net GHG emissions reduction of 10,777 $MTCO_2e$ annually in 2045. GHG emissions presented for electricity use from LRV, station, and MSF operation are expected to approach zero by 2045 because California's Renewables Portfolio Standard requires all of the state's electricity to come from renewable sources by 2045. As shown in Table 3.9-8, operation of the alignment would result in an estimated net GHG emissions reduction of 10,777 $MTCO_2e$ annually in 2045.

In addition to emissions decreases on the project level, KNE is a component of the RTP and would contribute to California's goal to increase mass transit under the AB 32 Scoping Plan. Implementation of the alignment would enhance regional transportation systems and contribute to planning efforts to reduce VMT and GHG emissions from transportation sources. Therefore, the KNE La Brea Alignment would have a less than significant impact during operation.

3.9.7.1.4 HOLLYWOOD BOWL DESIGN OPTION

3.9.7.1.4.1 CONSTRUCTION IMPACTS

Less than Significant Impact. The Hollywood Bowl Design Option changes the proposed Hollywood/Highland Station from a terminus station to an in-line station and adds a new Hollywood Bowl terminus station to the final section of each alignment. In order to capture these changes, GHG emissions were recalculated for the final section of each alignment to include concurrent construction of the Hollywood Bowl Design Option. Construction of earlier sections would not be affected by the addition of the Hollywood Bowl Design Option to the final section construction. As previously described, this analysis assumes that the sections of each alignment would be built sequentially, not concurrently. As a result of uncertainty in the timing for construction of each section, 2041 was used as a representative "Year 1" for all sections when calculating GHG emissions. Due to the inherently

cumulative nature of GHG emissions and their influence on climate, GHG emissions from all construction sections, including Hollywood Bowl Design Option construction concurrent with the final section of each alignment, were considered together when determining impacts for each alignment with the Hollywood Bowl Design Option.

Construction emissions associated with the Hollywood Bowl Design Option would be generated from heavy-duty construction equipment exhaust, exhaust from worker vehicle travel to and from the project site, and exhaust from haul trucks, delivery trucks, and cement trucks importing and exporting material to the project site.

Table 3.9-9, Table 3.9-10, and Table 3.9-11 present the construction GHG emissions by source for each section of the KNE San Vicente–Fairfax Alignment, KNE Fairfax Alignment, and KNE La Brea Alignment, respectively, including Hollywood Bowl Design Option construction concurrent with the final section of each, and the MSF. As shown in the tables, construction of the KNE San Vicente–Fairfax Alignment with the Hollywood Bowl Design Option and MSF would generate approximately 136,778 $MTCO_2e$; construction of the KNE Fairfax Alignment with the Hollywood Bowl Design Option and MSF would generate approximately 113,631 $MTCO_2e$; and construction of KNE La Brea Alignment with the Hollywood Bowl Design Option and MSF would generate approximately 102,165 $MTCO_2e$.

TABLE 3.9-9. KNE SAN VICENTE–FAIRFAX ALIGNMENT WITH HOLLYWOOD BOWL DESIGN OPTION CONSTRUCTION GHG EMISSIONS

	EMISSIONS ($MTCO_2e$)				
EMISSION SOURCE	SECTION 1	SECTION 2	SECTION 3 WITH HOLLYWOOD BOWL DESIGN OPTION	MSF	KNE SAN VICENTE–FAIRFAX ALIGNMENT WITH DESIGN OPTION TOTAL[1]
Off-Road Construction Equipment	25,014	19,034	41,428	4,657	90,133
Truck Trips (Hauling, Delivery, Cement)	12,091	8,712	13,375	1,242	35,420
Worker Commute Trips	3,313	2,542	4,718	651	11,225
Total Emissions	**40,418**	**30,288**	**59,521**	**6,550**	**136,778**
Amortized Construction (30 Years)[2]	1,347	1,010	1,984	218	4,559

Source: Connect Los Angeles Partners 2023
[1] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment with the Hollywood Bowl Design Option. As such, GHG emissions associated with MSF construction have been included in the alignment total.
[2] Amortized Construction = Total Emissions divided by 30 years.
Note: The KNE San Vicente–Fairfax Alignment would be constructed in three sections, referred to as Section 1, Section 2, and Section 3 (Section 3 would include the Hollywood Bowl Design Option under the KNE San Vicente–Fairfax Alignment).
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

TABLE 3.9-10. KNE FAIRFAX ALIGNMENT WITH HOLLYWOOD BOWL DESIGN OPTION CONSTRUCTION GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$) SECTION 1	SECTION 2 WITH HOLLYWOOD BOWL DESIGN OPTION	MSF	KNE FAIRFAX ALIGNMENT WITH DESIGN OPTION TOTAL[1]
Off-Road Construction Equipment	25,014	45,186	4,657	74,858
Truck Trips (Hauling, Delivery, Cement)	12,091	16,177	1,253	29,522
Worker Commute Trips	3,313	5,307	631	9,251
Total Emissions	**40,418**	**66,671**	**6,541**	**113,631**
Amortized Construction (30 Years)[2]	1,347	2,222	218	3,788

Source: Connect Los Angeles Partners 2023
[1] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment with the Hollywood Bowl Design Option. As such, GHG emissions associated with MSF construction have been included in the alignment total.
[2] Amortized Construction = Total Emissions divided by 30 years.
Note: The KNE Fairfax Alignment would be constructed in two sections, referred to as Section 1 and Section 2 (Section 2 would include the Hollywood Bowl Design Option under the KNE Fairfax and La Brea Alignments).
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

TABLE 3.9-11. KNE LA BREA ALIGNMENT WITH HOLLYWOOD BOWL DESIGN OPTION CONSTRUCTION GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$) SECTION 1	SECTION 2 WITH HOLLYWOOD BOWL DESIGN OPTION	MSF	KNE LA BREA ALIGNMENT WITH DESIGN OPTION TOTAL[1]
Off-Road Construction Equipment	23,409	40,668	4,607	68,683
Truck Trips (Hauling, Delivery, Cement)	10,752	13,069	1,249	25,069
Worker Commute Trips	3,135	4,649	629	8,412
Total Emissions	**37,295**	**58,386**	**6,485**	**102,165**
Amortized Construction (30 Years) [2]	1,243	1,946	216	3,406

Source: Connect Los Angeles Partners 2023
[1] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignment with the Hollywood Bowl Design Option. As such, GHG emissions associated with MSF construction have been included in the alignment total.
[2] Amortized Construction = Total Emissions divided by 30 years.
Note: The KNE La Brea Alignment would be constructed in two sections, referred to as Section 1 and Section 2 (Section 2 would include the Hollywood Bowl Design Option under the KNE Fairfax and La Brea Alignments).
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

SCAQMD guidance for CEQA assessments states that construction-related GHG emissions that occur over a relatively short-term period should be amortized over a 30-year period and considered with operational emissions due to the inherently cumulative nature of GHG emissions and the persistence of GHGs in the atmosphere (SCAQMD 2008). Amortized GHG construction emissions are considered in conjunction with operational GHG emissions from the alignments, Hollywood Bowl Design Option, and MSF in Table 3.9-12. As shown, direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with operation of the Hollywood Bowl Design Option in conjunction with any alignment.

All construction activities would be conducted in accordance with project measures PM AQ-1 and PM AQ-3 to avoid and minimize emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions as compared to 2045 without Project Conditions. Metro recognizes transportation mode shift to transit as the primary contributor to GHG-emissions displacement, and direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with operation of the alignments with the Hollywood Bowl Design Option. Therefore, the Hollywood Bowl Design Option would have a less than significant impact during construction.

TABLE 3.9-12. KNE ALIGNMENTS WITH HOLLYWOOD BOWL DESIGN OPTION OPERATIONAL GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$ PER YEAR)		
	KNE SAN VICENTE–FAIRFAX ALIGNMENT WITH DESIGN OPTION	KNE FAIRFAX ALIGNMENT WITH DESIGN OPTION	KNE LA BREA ALIGNMENT WITH DESIGN OPTION
Amortized Construction[1]	4,559	3,788	3,406
Regional Traffic	61,093,765	61,094,601	61,093,763
Light Rail Operations	865	711	582
Station Operation	134	107	94
MSF Operation	91	91	91
Total Emissions[2,3]	**61,099,414**	**61,099,298**	**61,097,935**
Emissions without Project	61,107,876	61,107,876	61,107,876
Change in Emissions due to Project	-8,463	-8,578	-9,941

Source: Connect Los Angeles Partners 2023
[1] Amortized Construction = Total Emissions divided by 30 years.
[2] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of any alignment. As such, GHG emissions associated with MSF operation have been included in the alignment totals.
[3] Total emissions in 2045 were calculated using 2019 carbon intensity factors. Actual emissions in 2045 from electricity generation are expected to approach zero, assuming a zero-carbon energy portfolio is achieved by 2045.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

3.9.7.1.4.2 OPERATIONAL IMPACTS

Less than Significant Impact. As demonstrated above, operation of all evaluated alignments would result in a decrease in GHG emissions at the project level. The Hollywood Bowl Design Option would slightly alter the configuration of the light rail alignment and add one underground station. The Metro Corridor Based Model 2018c forecasts that the Hollywood Bowl Design Option would not appreciably increase or decrease ridership of the light rail system, nor would it be expected to appreciably increase or decrease VMT in the SCAG region relative to the alignments; therefore, there was no change to regional traffic emissions estimates as a result of operation of the Hollywood Bowl Design Option. As shown in Table 3.9-12, operation of the Hollywood Bowl Design Option in conjunction with any alignment would result in an estimated net reduction of GHG emissions annually in 2045. GHG emissions presented for electricity use from LRV, station, and MSF operation are expected to approach zero by 2045 because California's Renewables Portfolio Standard requires all of the state's electricity to come from renewable sources by 2045.

In addition to emissions decreases on the project level, KNE is a component of the RTP and would contribute to California's goal to increase mass transit under the AB 32 Scoping Plan. Implementation of any alignment with the Hollywood Bowl Design Option would enhance regional transportation systems and contribute to planning efforts to reduce VMT and GHG emissions from transportation sources. Therefore, the Hollywood Bowl Design Option would have a less than significant impact during operation.

3.9.7.1.5 MAINTENANCE AND STORAGE FACILITY

3.9.7.1.5.1 CONSTRUCTION IMPACTS

Less Than Significant Impact. Construction emissions associated with the MSF would be generated from heavy-duty construction equipment exhaust, exhaust from worker vehicle travel to and from the project site, and exhaust from haul trucks and delivery trucks importing and exporting material to the project site. GHG emissions from construction were estimated following the methodology described in Section 3.9.3.1.1.1.

Project activities associated with the MSF would occur in two parts, concurrent with Section 1 and Section 2 of each alignment. Concurrently with Section 1 of the alignments, MSF facility construction would include the addition of four storage tracks to the existing Division 16 site to accommodate increased LRV storage. Concurrently with Section 2 of the alignments, MSF facilities constructed would include expansion of the existing Division 16 MSF on the adjacent 16.5-acre site and comprise approximately 57,380 square feet of facility structures. No MSF construction would occur concurrently with Section 3 of the KNE San Vicente–Fairfax Alignment.

As a result of uncertainty in the timing for construction of each section, 2041 was used as a representative "Year 1" for all sections when calculating GHG emissions. The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignments. As such, GHG emissions associated with MSF construction have been presented with GHG emissions from construction of each alignment.

Table 3.9-13 presents the construction GHG emissions by source for each alignment with the MSF. As shown in the table, construction of the MSF with the KNE San Vicente–Fairfax Alignment would generate approximately 114,830 $MTCO_2e$; construction of the MSF with the KNE Fairfax Alignment would generate approximately 92,079 $MTCO_2e$; and construction of the MSF with the KNE La Brea Alignment would generate approximately 79,909 $MTCO_2e$.

SCAQMD guidance for CEQA assessments states that construction-related GHG emissions that occur over a relatively short-term period should be amortized over a 30-year period and considered with operational emissions due to the inherently cumulative nature of GHG emissions and the persistence of GHGs in the atmosphere (SCAQMD 2008). The amortized GHG emissions rate during construction would be approximately 3,828 $MTCO_2e$ annually for the MSF with the KNE San Vicente–Fairfax Alignment, approximately 3,069 $MTCO_2e$ annually for the MSF with the KNE Fairfax Alignment, and approximately 2,664 $MTCO_2e$ annually for the MSF with the KNE La Brea Alignment.

All construction activities would be conducted in accordance with project measures PM AQ-1 and PM AQ-3 to avoid and minimize emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions as compared to 2045 without Project Conditions. Metro recognizes transportation mode shift to transit as the primary contributor to GHG emissions displacement, and direct emissions generated through construction activities would be more than offset by the future benefits of transportation mode shift that would occur with implementation of any of the proposed alignments and the MSF, which provides services essential to operation of the project. Therefore, the MSF would have a less than significant impact during construction.

TABLE 3.9-13. MSF AND ALIGNMENT CONSTRUCTION GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$)								
	KNE SAN VICENTE–FAIRFAX ALIGNMENT			KNE FAIRFAX ALIGNMENT			KNE LA BREA ALIGNMENT		
	SECTION 1 MSF FACILITIES[1]	SECTION 2 MSF EXPANSION[2]	ALIGNMENT WITH MSF[3]	SECTION 1 MSF FACILITIES[1]	SECTION 2 MSF EXPANSION[2]	ALIGNMENT WITH MSF[3]	SECTION 1 MSF FACILITIES[1]	SECTION 2 MSF EXPANSION[2]	ALIGNMENT WITH MSF[3]
Off-Road Construction Equipment	542	4,115	70,076	542	4,115	55,152	492	4,115	48,474
Truck Trips (Hauling, Delivery, Cement)	128	1,114	35,261	128	1,138	29,375	124	1,138	24,912
Worker Commute Trips	120	530	9,493	120	523	7,552	96	512	6,522
Total Emissions	**791**	**5,759**	**114,830**	**791**	**5,776**	**92,079**	**712**	**5,765**	**79,909**
Amortized Construction (30 Years) [4]	26	192	3,828	26	193	3,069	24	192	2,664

Source: Connect Los Angeles Partners 2023
[1] Section 1 MSF Facilities = the additional four storage tracks required to support operation of Section 1 of the alignment
[2] Section 2 MSF Expansion = full expansion of the Division 16 site
[3] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of any alignment. As such, GHG emissions associated with MSF construction have been presented with alignment emissions totals.
[4] Amortized Construction = Total Emissions divided by 30 years.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

3.9.7.1.5.2 OPERATIONAL IMPACTS

Less than Significant Impact. Operation of the MSF would result in emissions from electricity use, natural gas use, water and wastewater use, solid waste disposal, and vehicle trips to and from the site. It was assumed that emissions from additional activity associated with the four storage tracks to accommodate Section 1 of the alignments at the existing Division 16 MSF would be minimal since that facility is already in operation. Therefore, emissions specific to the additional four storage tracks for Section 1 are estimated to be similar to existing conditions and are not included as a separate line item in Table 3.9-14.

TABLE 3.9-14. MAINTENANCE AND STORAGE FACILITY OPERATIONAL GHG EMISSIONS

EMISSION SOURCE	EMISSIONS ($MTCO_2e$ PER YEAR)		
	KNE SAN VICENTE–FAIRFAX ALIGNMENT WITH MSF	KNE FAIRFAX ALIGNMENT WITH MSF	KNE LA BREA ALIGNMENT WITH MSF
Amortized Construction[1]	3,828	3,069	2,664
Regional Traffic[2]	61,093,765	61,094,601	61,093,763
Light Rail Operations	784	630	501
Station Operation	120	94	80
MSF Operation	91	91	91
Total Emissions[3,4]	**61,098,588**	**61,098,485**	**61,097,099**
Emissions without Project	61,107,876	61,107,876	61,107,876
Change in Emissions due to Project	-9,288	-9,391	-10,777

Source: Connect Los Angeles Partners 2023
[1] Amortized Construction = Total emissions divided by 30 years.
[2] Regional Traffic emissions include worker commute trips to the MSF as part of regional background growth.
[3] The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of any alignment. As such, GHG emissions associated with MSF construction have been presented with alignment emissions totals.
[4] Total emissions in 2045 were calculated using 2019 carbon intensity factors. Actual emissions in 2045 from electricity generation are expected to approach zero, assuming a zero-carbon energy portfolio is achieved by 2045.
GHG = greenhouse gases; MSF = maintenance and storage facility; $MTCO_2e$ = metric tons carbon dioxide equivalent

The MSF is considered a component of all of the alignments. Operation of the MSF expansion at Metro's Division 16 would generate approximately 91 $MTCO_2e$ per year. As shown below, when the additional MSF emissions are added, all alignments result in a decrease in total annual emissions as compared to 2045 without Project Conditions. Therefore, the MSF would have a less than significant impact during operation.

3.9.7.2 IMPACT GHG-2: CONFLICTS WITH GHG-REDUCING PLANS, POLICIES, AND REGULATIONS

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?

At the state level, the primary transportation-related plans and regulations that address GHG emissions include SB 375, AB 32, the 2022 AB 32 Scoping Plan (CARB 2022b), and the 2021 CalSTA CAPTI (CalSTA

2021). The primary regional GHG emissions reduction plan is contained within the SCS portion of the SCAG Connect SoCal 2020 RTP/SCS (SCAG 2020). The project was identified as a Strategic Project in the 2020 RTP/SCS, and was incorporated into its regional growth projections and transportation strategies. Metro will prioritize and ensure consistency with its own 2019 CAAP (Metro 2019), 2020 MBSSP, and Green Construction Policy for all projects being implemented. At the local level, applicable climate action plans include the CCAP of the Los Angeles County 2035 General Plan, the City of Los Angeles' Sustainable City pLAn (2015) and Green New Deal (2019), and the City of West Hollywood's WeHo Climate Action Plan (2021).

Decreasing GHG emissions through the reduction of fossil fuel use in transportation, and specifically by lowering passenger vehicle VMT, is a universal focus of the 2022 AB 32 Scoping Plan, 2020 RTP/SCS, 2021 CalSTA CAPTI, Metro 2019 CAAP, Los Angeles County CCAP, City of Los Angeles Sustainable City pLAn and Green New Deal, and City of West Hollywood WeHo Climate Action Plan. The 2017 AB 32 Scoping Plan identified three key means of reducing these emissions: increasing vehicle efficiency; reducing fuel carbon content; and reducing VMT (CARB 2017). CARB has specifically identified VMT reduction as a key measure in ensuring the SB 375 targets are achieved, acknowledging that state emission targets would be unachievable without limiting statewide VMT growth. The 2022 AB 32 Scoping Plan builds on these concepts by focusing on making active transportation and clean transit options cheaper and more convenient than driving. The Los Angeles County, City of Los Angeles, and City of West Hollywood climate action plans all include initiatives to promote reduced vehicle travel through expansion of sustainable forms of transportation and improvements to the efficiency, safety, and convenience of transit services.

3.9.7.2.1 KNE SAN VICENTE–FAIRFAX ALIGNMENT

3.9.7.2.1.1 CONSTRUCTION IMPACTS

Less than Significant Impact. Construction of the KNE San Vicente–Fairfax Alignment would temporarily generate GHG emissions. In accordance with Metro policies adopted to reduce GHG emissions during construction of Metro projects, project measures PM AQ-1 and PM AQ-3 would be implemented throughout construction to avoid and minimize GHG emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions, directly contributing to statewide and regional efforts to reduce fossil fuel use in transportation, decrease passenger vehicle VMT, and improve the convenience of clean transit. Construction of the alignment would not conflict with GHG-reduction plans, policies, or regulations. Therefore, the KNE San Vicente–Fairfax Alignment would have a less than significant impact during construction.

3.9.7.2.1.2 OPERATIONAL IMPACTS

Less than Significant Impact. Operation of the KNE San Vicente–Fairfax Alignment would directly contribute to statewide, regional, and local efforts to reduce GHG emissions by reducing fossil fuel use in transportation, decreasing passenger vehicle VMT, and improving the convenience of clean transit. In 2045, operation of the alignment would reduce annual on-road VMT by approximately 49 million (Table 3.9-15). Metro identifies transportation mode shift as the primary mechanism of GHG-emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide, regional, and local GHG emissions-reduction strategies within long-range planning objectives.

TABLE 3.9-15. KNE SAN VICENTE–FAIRFAX ALIGNMENT VEHICLE MILES TRAVELED

CONDITION	ANNUAL VEHICLE MILES TRAVELED
KNE San Vicente–Fairfax Alignment	214,090,029,819
Conditions without Project	214,139,478,194
Change in VMT due to Project	-49,448,375

Source: Connect Los Angeles Partners 2023
VMT = vehicle miles traveled

The alignment would be consistent with the AB 32 Scoping Plan, 2020 RTP/SCS, 2021 CalSTA CAPTI, Metro 2019 CAAP, Los County Angeles CCAP, City of Los Angeles Sustainable City pLAn and Green New Deal, and City of West Hollywood WeHo Climate Action Plan through achieving a net reduction in emissions, as analyzed in Table 3.9-4, thereby enhancing the Metro transit system's net displacement of GHG emissions and increasing access to clean transit. Operation of the alignment would not conflict with GHG-reduction plans, policies, or regulations. Therefore, the KNE San Vicente–Fairfax Alignment would have a less than significant impact during operation.

3.9.7.2.2 KNE FAIRFAX ALIGNMENT

3.9.7.2.2.1 CONSTRUCTION IMPACTS

Less than Significant Impact. Construction of the KNE Fairfax Alignment would temporarily generate GHG emissions. In accordance with Metro policies adopted to reduce GHG emissions during construction of Metro projects, project measures PM AQ-1 and PM AQ-3 would be implemented throughout construction to avoid and minimize GHG emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions, directly contributing to statewide and regional efforts to reduce fossil fuel use in transportation, decrease passenger vehicle VMT, and improve the convenience of clean transit. Construction of the alignment would not conflict with GHG-reduction plans, policies, or regulations. Therefore, the KNE Fairfax Alignment would have a less than significant impact during construction.

3.9.7.2.2.2 OPERATIONAL IMPACTS

Less than Significant Impact. Operation of the KNE Fairfax Alignment would directly contribute to statewide, regional, and local efforts to reduce GHG emissions by reducing fossil fuel use in transportation, decreasing passenger vehicle VMT, and improving the convenience of clean transit. As shown in Table 3.9-16, the regional passenger vehicle VMT is forecasted to be reduced by approximately 47 million under the alignment as compared to the 2045 without Project Conditions. Metro identifies transportation mode shift as the primary mechanism of GHG-emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide, regional, and local GHG emissions-reduction strategies within long-range planning objectives.

TABLE 3.9-16. KNE FAIRFAX ALIGNMENT VEHICLE MILES TRAVELED

CONDITION	ANNUAL VEHICLE MILES TRAVELED
KNE Fairfax Alignment	214,092,959,309
Conditions without Project	214,139,478,194
Change in VMT due to Project	-46,518,885

Source: Connect Los Angeles Partners 2023
VMT = vehicle miles traveled

The alignment would be consistent with the AB 32 Scoping Plan, 2020 RTP/SCS, 2021 CalSTA CAPTI, Metro 2019 CAAP, Los County Angeles CCAP, City of Los Angeles Sustainable City pLAn and Green New Deal, and City of West Hollywood WeHo Climate Action Plan through achieving a net reduction in emissions, as analyzed in Table 3.9-6, thereby enhancing the Metro transit system's net displacement of GHG emissions and increasing access to clean transit. Therefore, the KNE Fairfax Alignment would have a less than significant impact during operation.

3.9.7.2.3 KNE LA BREA ALIGNMENT

3.9.7.2.3.1 CONSTRUCTION IMPACTS

Less than Significant Impact. Construction of the KNE La Brea Alignment would temporarily generate GHG emissions. In accordance with Metro policies adopted to reduce GHG emissions during construction of Metro projects, project measures PM AQ-1 and PM AQ-3 would be implemented throughout construction to avoid and minimize GHG emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions, directly contributing to statewide and regional efforts to reduce fossil fuel use in transportation, decrease passenger vehicle VMT, and improve the convenience of clean transit. Construction of the alignment would not conflict with GHG-reduction plans, policies, or regulations. Therefore, the KNE La Brea Alignment would have a less than significant impact during construction.

3.9.7.2.3.2 OPERATIONAL IMPACTS

Less than Significant Impact. Operation of the KNE La Brea Alignment would directly contribute to statewide, regional, and local efforts to reduce GHG emissions by reducing fossil fuel use in transportation, decreasing passenger vehicle VMT, and improving the convenience of clean transit. As shown in Table 3.9-17, the regional passenger vehicle VMT is forecasted to be reduced by approximately 49 million under the alignment as compared to the 2045 without Project Conditions. Metro identifies transportation mode shift as the primary mechanism of GHG-emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide, regional, and local GHG emissions-reduction strategies within long-range planning objectives.

TABLE 3.9-17. KNE LA BREA ALIGNMENT VEHICLE MILES TRAVELED

CONDITION	ANNUAL VEHICLE MILES TRAVELED
KNE La Brea Alignment	214,090,021,424
Conditions without Project	214,139,478,194
Change in VMT due to Project	-49,456,770

Source: Connect Los Angeles Partners 2023
VMT = vehicle miles traveled

The alignment would be consistent with the AB 32 Scoping Plan, 2020 RTP/SCS, 2021 CalSTA CAPTI, Metro 2019 CAAP, Los County Angeles CCAP, City of Los Angeles Sustainable City pLAn and Green New Deal, and City of West Hollywood WeHo Climate Action Plan through achieving a net reduction in emissions, as analyzed in Table 3.9-8, thereby enhancing the Metro transit system's net displacement of GHG emissions and increasing access to clean transit. Therefore, the KNE La Brea Alignment would have a less than significant impact during operation.

3.9.7.2.4 HOLLYWOOD BOWL DESIGN OPTION

3.9.7.2.4.1 CONSTRUCTION IMPACTS

Less than Significant Impact. Construction of the Hollywood Bowl Design Option would temporarily generate GHG emissions, which would cease upon completion of the LRT corridor. In accordance with Metro policies adopted to reduce GHG emissions during construction of Metro projects, project measures PM AQ-1 and PM AQ-3 would be implemented throughout construction to avoid and minimize GHG emissions by following equipment and fuel requirements. GHG emissions would be temporarily generated to construct an energy-efficient mass transit system that would reduce long-term regional GHG emissions, directly contributing to statewide and regional efforts to reduce fossil fuel use in transportation, decrease passenger vehicle VMT, and improve the convenience of clean transit. Therefore, the Hollywood Bowl Design Option would have a less than significant impact during construction.

3.9.7.2.4.2 OPERATIONAL IMPACTS

Less than Significant Impact. Operation of the Hollywood Bowl Design Option would directly contribute to statewide, regional, and local efforts to reduce GHG emissions by improving the convenience of clean transit. The Metro Corridor Based Model 2018c forecasts that the addition of the Hollywood Bowl Design Option would not appreciably increase or decrease ridership of the light rail system, nor would it be expected to appreciably increase or decrease VMT relative to the alignments. The annual VMT would be reduced for all alignments as compared to 2045 without Project Conditions, as described for the alignments and design option. Metro identifies transportation mode shift as the primary mechanism of GHG-emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide, regional, and local GHG emissions-reduction strategies within long-range planning objectives.

Operations of all alignments with the Hollywood Bowl Design Option would be consistent with the AB 32 Scoping Plan, 2020 RTP/SCS, 2021 CalSTA CAPTI, Metro 2019 CAAP, County of Los Angeles CCAP, City of Los Angeles Sustainable City pLAn and Green New Deal, and City of West Hollywood WeHo Climate Action Plan through achieving a net reduction in emissions as analyzed in Table 3.9-12, enhancing the Metro transit system's net displacement of GHG emissions and increasing access to clean transit. Therefore, the Hollywood Bowl Design Option would have a less than significant impact during operation.

3.9.7.2.5 MAINTENANCE AND STORAGE FACILITY

3.9.7.2.5.1 CONSTRUCTION IMPACTS

Less than Significant Impact. Construction of the MSF would temporarily generate GHG emissions, which would cease upon completion of the MSF. In accordance with Metro policies adopted to reduce GHG emissions during construction of Metro projects, project measures PM AQ-1 and PM AQ-3 would be implemented throughout construction to avoid and minimize GHG emissions by following equipment and fuel requirements. The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignments. As such, GHG emissions associated with MSF construction would be temporarily generated in service of an energy-efficient mass transit system that would reduce long-term regional GHG emissions, directly contributing to statewide and regional efforts to reduce fossil fuel use in transportation, decrease passenger vehicle VMT, and improve the convenience of clean transit. Therefore, the MSF would have a less than significant impact during construction.

3.9.7.2.5.2 OPERATIONAL IMPACTS

Less than Significant Impact. The MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the alignments. Operation of the MSF would not increase or decrease ridership of the light rail system, nor would it be expected to appreciably increase or decrease VMT relative to the alignments. The annual VMT would be reduced for all alignments as compared to 2045 without Project Conditions, as described for the alignments and design option. Metro identifies transportation mode shift as the primary mechanism of GHG-emissions displacement, and the expansion of public transit infrastructure is an essential element of statewide, regional, and local GHG emissions-reduction strategies within long-range planning objectives. Increases of

emissions from MSF operational activities would be more than offset by the decrease in emissions from roadway vehicles resulting from operations.

Operation of all alignments with the MSF would be consistent with the AB 32 Scoping Plan, 2020 RTP/SCS, 2021 CalSTA CAPTI, Metro 2019 CAAP, County of Los Angeles CCAP, City of Los Angeles Sustainable City pLAn and Green New Deal, and City of West Hollywood WeHo Climate Action Plan through achieving a net reduction in emissions, as analyzed above in Impact GHG-1, enhancing the Metro transit system's net displacement of GHG emissions and increasing access to clean transit. Therefore, the MSF would have a less than significant impact during operation.

3.9.7.3 MITIGATION MEASURES

As the impact analysis above demonstrates, construction and operation of any of the KNE alignments and stations, the design option, and the MSF would result in a less than significant impact related to GHG emissions. Therefore, no mitigation is required under CEQA.

3.9.7.1 SUMMARY OF IMPACT SIGNIFICANCE CONCLUSIONS AND MITIGATION MEASURES

Table 3.9-18 summarizes the GHG emissions impact significance conclusions and applicable mitigation measures. As indicated above, there are no significant GHG emissions impacts that would require mitigation.

TABLE 3.9-18. KNE SUMMARY OF IMPACT SIGNIFICANCE CONCLUSIONS AND MITIGATION MEASURES

IMPACT		IMPACT SIGNIFICANCE CONCLUSIONS AND MITIGATION MEASURES				
		KNE SAN VICENTE–FAIRFAX ALIGNMENT	KNE FAIRFAX ALIGNMENT	KNE LA BREA ALIGNMENT	HOLLYWOOD BOWL DESIGN OPTION	MAINTENANCE AND STORAGE FACILITY
Impact GHG-1: Emission Generation	Impact Before Mitigation	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS
	Mitigation Measures	None Required	None Required	None Required	None Required	None Required
	Impact After Mitigation	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS
Impact GHG-2: Conflicts with GHG-Reducing Plans, Policies, and Regulations	Impact Before Mitigation	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS
	Mitigation Measures	None Required	None Required	None Required	None Required	None Required
	Impact After Mitigation	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS	Construction: LTS Operation: LTS

Source: Connect Los Angeles Partners 2024
LTS = less than significant