

4.8 GREENHOUSE GAS EMISSIONS

4.8.1 Introduction

This section has been prepared for the proposed Menifee Valley Specific Plan Project (proposed Project) using methodologies and assumptions recommended in the air quality impact assessment guidelines of the South Coast Air Quality Management District. This section summarizes existing greenhouse gas (GHG) emissions and discusses global climate change, its causes, and the contribution of human activities. This section also estimates the likely GHG emissions that would result from construction and operational activities associated with development of the proposed Project, including vehicular traffic, energy consumption, and other emission sources.

4.8.2 Scoping Process

The City of Menifee (City) received 10 comment letters during the public review period of the Notice of Preparation (NOP). For copies of the NOP comment letters, refer to **Appendix A-1** of this Draft Environmental Impact Report (EIR). Three comment letters included comments related to greenhouse gas emissions and air quality. Those comment letters are summarized as follows:

- Mitchell M. Tsai commented that the City should consider utilizing skilled and trained workforce policies and requirements to benefit the local area economically and mitigate greenhouse gas, air quality, and transportation impacts.
- The SCAQMD recommended identification of potential adverse air quality impacts associated with construction and operation of the Project. The comment letter also recommended the preparation of a health risk assessment if the Project would generate diesel emissions from construction or would attract diesel-fueled vehicular trips.
- David Cordero from the Southwest Regional Council of Carpenters (SWRCC) commented that local skilled and trained workforce requirements can boost economic development and mitigate transportation and greenhouse gas impacts by minimizing vehicle miles traveled.

4.8.3 Methodology

The proposed Project would result in GHG emissions from construction and operational sources. Construction activities would generate emissions from off-road construction equipment and on roadways as a result of construction-related truck hauling, vendor deliveries, and worker commuting. Operational GHG emissions are typically associated with mobile sources (e.g., vehicle trips), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). This analysis uses the California Emissions Estimator Model version 2020.4.0 (CalEEMod) to quantify GHG emissions for both construction and operation associated with build out of the proposed Project. This analysis includes six model runs, one for each of the three phases of the on-site improvements, a model run for build out of the on-site improvements, a model run for the off-site improvements, and a model run for the off-site roadway improvements. CalEEMod output is contained in **Appendix C**.

4.8.4 Existing Environmental Setting

The following describes existing GHG emissions in Menifee, beginning with typical GHG types and sources, impacts of global climate change, the regulatory framework surrounding these issues, and current emission levels.

4.8.4.1 Background

The following section provides background information on GHGs and global climate change.

Global Climate Change. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2 degrees Celsius ($^{\circ}\text{C}$) or 1.1 ± 0.4 degrees Fahrenheit ($^{\circ}\text{F}$) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.¹

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are the following:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. While man-made GHGs include naturally occurring GHGs such as CO_2 , CH_4 , and N_2O , some gases, such as HFCs, PFCs, and SF_6 , are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic

¹ The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse allows heat from sunlight in and reduces the heat escaping, GHGs such as carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of GHGs results in global warming, the *naturally occurring* greenhouse effect is necessary to keep the planet at a comfortable temperature.

evaporation. For the purposes of this analysis, the term “GHGs” will refer collectively only to the six gases listed above.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO₂ over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO₂ equivalents” (CO₂e). **Table 4.8.A** shows the GWP for each type of GHG. For example, sulfur hexafluoride is 23,900 times more potent at contributing to global warming than carbon dioxide.

Table 4.8.A: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide (CO ₂)	50–200	1
Methane (CH ₄)	12	21
Nitrous Oxide (N ₂ O)	114	310
HFC-32	270	11,700
HFC-134a	14	140
HFC-152a	1.4	140
PFC: Tetrafluoromethane (CF ₄)	50,000	6,500
PFC: Hexafluoromethane (C ₂ F ₆)	10,000	9,200
Sulfur Hexafluoride (SF ₆)	3,200	23,900

Source: *Second Update to the Climate Change Scoping Plan: Building on the Framework* (CARB 2017). Website: www.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2017-scoping-plan-documents (accessed December 2022).

The following summarizes the characteristics of the six GHGs and black carbon. Black carbon also contributes to climate change and is therefore discussed below.

Carbon Dioxide. In the atmosphere, carbon generally exists in its oxidized form, as CO₂. Natural sources of CO₂ include the respiration (breathing) of humans, animals, and plants, volcanic out gassing, decomposition of organic matter, and evaporation from the oceans. Human-caused sources of CO₂ include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO₂ each year, far outweighing the 7 billion tons of man-made emissions of CO₂ each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO₂, and consequently, the gas is building up in the atmosphere.

In 2020, total annual CO₂ accounted for approximately 80.2 percent of California's overall GHG emissions.² Transportation is the single largest source of CO₂ in California, which is primarily comprised of on-road travel. Electricity production, industrial, and residential sources also make important contributions to CO₂ emissions in California.

Methane. CH₄ is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH₄ emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation in dairy cows, manure management, and rice cultivation are also significant sources of CH₄ in California. Total annual emissions of CH₄ accounted for approximately 10.5 percent of GHG emissions in California in 2020.

Nitrous Oxide. N₂O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N₂O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N₂O emissions in California. Nitrous oxide emissions accounted for approximately 3.5 percent of GHG emissions in California in 2020.

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride. HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.³ PFCs and SF₆ are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry has resulted in greater use of PFCs. HFCs, PFCs, and SF₆ accounted for about 5.5 percent of GHG emissions in California in 2020.⁴

Black Carbon. Black carbon is the most strongly light-absorbing component of particulate matter (PM) formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the atmosphere in the form of particulate matter less than 2.5 microns in size (PM_{2.5}) and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb one million times more energy than CO₂.⁵

² California Air Resources Board (CARB). 2022a. GHGs Descriptions & Sources in California. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed November 2022).

³ The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

⁴ CARB. 2022a. Op. cit.

⁵ United States Environmental Protection Agency (USEPA). 2017. Black Carbon, Basic Information. February 14, 2017. Website: 19january2017snapshot.epa.gov/www3/airquality/blackcarbon/basic.html (accessed September 2022).

Black carbon contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel fueled vehicles.⁶ The other major source of black carbon is open biomass burning, including wildfires, although residential heating and industry also contribute. The California Air Resources Board (CARB) estimates that the annual black carbon emissions in California will be reduced approximately 50 percent below 2013 levels by 2030.⁷

Effects of Global Climate Change. Effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme weather events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global climate change may also result in impacts to local air quality from increased ground-level ozone and particulate matter.⁸

Additionally, according to the 2006 California Climate Action Team (CAT) Report,⁹ the following climate change effects, which are based on trends established by the United Nations Intergovernmental Panel on Climate Change (IPCC), can be expected in California over the course of the next century:

- The loss of sea ice and mountain snowpack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;¹⁰
- Rise in global average sea level, primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets;¹¹

⁶ Ibid.

⁷ CARB. 2017. *Short-Lived Climate Pollutant Reduction Strategy*. March. Website: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf (accessed September 2022).

⁸ USEPA. 2020. Air Quality and Climate Change Research. Website: <https://www.epa.gov/air-research/air-quality-and-climate-change-research> (accessed September 2022).

⁹ California Environmental Protection Agency (CalEPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

¹⁰ Ibid.

¹¹ Ibid.

- Changes in weather that include widespread changes in precipitation, ocean salinity, wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;¹²
- Decline of the Sierra snowpack, which accounts for approximately one-half of the surface water storage in California by 70 percent to as much as 90 percent over the next 100 years;¹³
- Increase in the number of days conducive to ozone (O₃) formation by 25 to 85 percent (depending on the future temperature scenario) in high O₃ areas of Los Angeles and the San Joaquin Valley by the end of the 21st century;¹⁴ and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.¹⁵

A summary of these potential effects is provided in **Table 4.8.B**, below.

Emissions Inventories. An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, and California GHG emission inventories.

Global Emissions. Worldwide emissions of GHGs in 2018 totaled 25.6 billion metric tons (MT) of CO₂e. Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change.¹⁶

United States Emissions. In 2020, the year for which the most recent data are available, the United States emitted about 5,222 million metric tons of CO₂e (MMT CO₂e). Overall, emissions in 2020 decreased by 11 percent since 2019 and were 21 percent lower than 2005 levels. The primary driver for the decrease was an 11 percent decrease in CO₂ emissions from fossil fuel combustion. This decrease was primarily due to a 13 percent decrease in transportation emissions driven by decreased demand due to the ongoing COVID-19 pandemic. Electric power sector emissions also decreased 10 percent, reflecting both a slight decrease in demand from the COVID-19 pandemic and a continued shift from coal to less carbon intensive natural gas and renewables. Of the five major sectors – residential and commercial, agricultural, industry, transportation, and electricity generation – transportation accounted for the highest amount of

¹² Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*. February.

¹³ CalEPA. 2006. Op. cit.

¹⁴ CalEPA. 2006. Op. cit.

¹⁵ Ibid.

¹⁶ United Nations Framework Convention on Climate Change (UNFCCC). 2021. GHG Data from UNFCCC. Website: unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc (accessed September 2022).

Table 4.8.A: Potential Impacts of Global Warming and Expected Consequences for California

Potential Water Resource Impacts	Anticipated Consequences Statewide
Reduction of the State’s average annual snowpack	<ul style="list-style-type: none"> ● The decline of the Sierra snowpack would lead to a loss in half of the surface water storage in California by 70% to 90% over the next 100 years ● Potential loss of 5 million acre-feet or more of average annual water storage in the State’s snowpack ● Increased challenges for reservoir management and balancing the competing concerns of flood protection and water supply ● Higher surface evaporation rates with a corresponding increase in tropospheric water vapor
Rise in average sea level	<ul style="list-style-type: none"> ● Potential economic impacts related to coastal tourism, commercial fisheries, coastal agriculture, and ports ● Increased risk of flooding, coastal erosion along the State’s coastline, seawater intrusion into the Sacramento-San Joaquin River Delta (Delta) and levee systems
Changes in weather	<ul style="list-style-type: none"> ● Changes in precipitation, ocean salinity, and wind patterns ● Increased likelihood for extreme weather events, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones
Changes in the timing, intensity, location, amount, and variability of precipitation	<ul style="list-style-type: none"> ● Potential increased storm intensity and increased potential for flooding ● Possible increased potential for droughts ● Long-term changes in vegetation and increased incidence of wildfires ● Changes in the intensity and timing of runoff ● Possible increased incidence of flooding and increased sedimentation ● Sea level rise and inundation of coastal marshes and estuaries ● Increased salinity intrusion into the Delta ● Increased potential for Delta levee failure ● Increased potential for salinity intrusion into coastal aquifers (groundwater) ● Increased potential for flooding near the mouths of rivers due to backwater effects
Increased water temperatures	<ul style="list-style-type: none"> ● Increased environmental water demand for temperature control ● Possible increased problems with foreign invasive species in aquatic ecosystems ● Potential adverse changes in water quality, including the reduction of dissolved oxygen levels ● Possible critical effects on listed and endangered aquatic species
Changes in urban and agricultural water demand	<ul style="list-style-type: none"> ● Changes in demand patterns and evapotranspiration
Increase in the number of days conducive to O ₃ formation	<ul style="list-style-type: none"> ● Increased temperatures ● Potential health effects, including adverse impacts to respiratory systems

Source: *Environmental Water Account Draft Supplemental EIS/EIR to the Environmental Water Account Final EIS/EIR, Bureau of Reclamation Mid-Pacific Region*, Sacramento, California (U.S. Department of the Interior, October 2007).

EIR = Environmental Impact Report

EIS = Environmental Impact Statement

O₃ = ozone

GHG emissions in 2020 (approximately 27 percent), with electricity generation second at 27 percent and emissions from industry third at 24 percent.¹⁷

State of California Emissions. The State emitted approximately 369.2 MMT CO₂e emissions in 2020, 35.3 MMT CO₂e lower than 2019 levels and 61.8 MMT CO₂e below the 2020 GHG limit of 431 MMT CO₂e.¹⁸ The CARB estimates that transportation was the source of approximately 37 percent of the State's GHG emissions in 2020, which is a smaller share than recent years, as the transportation sector saw a significant decrease of 26.6 MMT CO₂e in 2020, likely due in large part to the impact of the COVID-19 pandemic. The next largest sources included industrial sources at approximately 20 percent and electricity generation at 16 percent. The remaining sources of GHG emissions were commercial and residential activities at 10 percent, agriculture at 9 percent, high GWP at 6 percent, and waste at 2 percent.¹⁹

4.8.5 Regulatory Setting

The applicable federal, State, regional, and local regulatory framework is discussed below.

4.8.5.1 Federal Regulations

Federal Clean Air Act. The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the United States Environmental Protection Agency (USEPA) has the authority to regulate CO₂ emissions under the Federal Clean Air Act. While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the USEPA commenced several actions in 2009 to implement a regulatory approach to global climate change.

This includes the 2009 USEPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the USEPA Administrator signed an endangerment finding action in 2009 under the Federal Clean Air Act, finding that six GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

In October 2012, the USEPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions and improve Corporate Average Fuel Economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 *Federal Register* 62624). The NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would

¹⁷ USEPA. 2022. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020. Website: <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> (accessed November 2022).

¹⁸ CARB. 2022a. *California Greenhouse Gas Emissions for 2000 to 2020, Trends of Emissions and Other Indicators Report*. Website: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf (accessed November 2022).

¹⁹ Ibid.

increase fuel economy to the equivalent of 54.5 miles per gallon (mpg), limiting vehicle emissions to 163 grams of CO₂ per mile for the fleet of cars and light-duty trucks by model year 2025 (77 *Federal Register* 62630).

On March 31, 2022, the NHTSA finalized the CAFE standards for Model Years 2024–2026 Passenger Cars and Light Trucks. The amended CAFE standards would require an industry wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, by increasing fuel efficiency by 8 percent annually for model years 2024–2025, and 10 percent annually for model year 2026. The final standards are estimated to save about 234 billion gallons of gasoline between model years 2030 to 2050.

4.8.5.2 State Regulations

The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California’s air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002). In a response to the transportation sector’s significant contribution to California CO₂ emissions, Assembly Bill (AB) 1493 was enacted on July 22, 2002. AB 1493 requires the CARB to set GHG emission standards for passenger vehicles and light-duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of Clean Air Act Preemption was not granted by the USEPA until June 30, 2009. The CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025. The Trump administration revoked California’s waiver in 2019, but the Biden administration restored California’s waiver in 2021.

Executive Order S-3-05 (2005). Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California’s GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010
- GHG emissions should be reduced to 1990 levels by 2020
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California’s water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads this CAT made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in the executive order and further defined under AB 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and the Legislature was released in March 2006, which laid out 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the Executive Order. The most recent report was released in December 2020.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is AB 32, passed by the State Legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 MMT of CO₂e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by the CARB on December 11, 2008 and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT CO₂e, or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT CO₂e under a business-as-usual scenario (this is a reduction of 42 MMT CO₂e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO₂e);
- The Low-Carbon Fuel Standard (15.0 MMT CO₂e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO₂e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO₂e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reaproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust California Environmental Quality Act (CEQA) equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

The CARB has not yet determined what amount of GHG reductions it recommends from local government operations and local land use decisions; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, the CARB is also developing an additional protocol for community emissions). The CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO₂e reduction due to implementation of Senate Bill (SB) 375.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the CARB and the CAT to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed EO S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard (LCFS). This executive order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the CARB to consider the LCFS as a discrete early action measure. In 2011, U.S. District Court Judge Lawrence O'Neil issued an injunction preventing implementation of the LCFS, ruling that it is unconstitutional. In 2012, the Ninth Circuit Court of Appeals stayed the District Court's injunction, allowing implementation of the LCFS. The Ninth Circuit decided to uphold the LCFS.

In June 2007, the CARB approved a list of 37 early action measures, including three discrete early action measures (LCFS, Restrictions on GWP Refrigerants, and Landfill CH₄ Capture).²⁰ Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF₆ reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide GHG emissions by nearly 16 MMT.²¹

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020 and also sets the groundwork to reach long-term goals set forth in EOs S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State

²⁰ CARB. 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

²¹ CARB. 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

policy priorities for water, waste, natural resources, clean energy, transportation, and land use. The CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,²² to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

The 2022 Scoping Plan²³ was approved in December 2022 and assesses progress toward achieving the SB 32 2030 target and laying out a path to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code [PRC], Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the *State CEQA Guidelines* in November 2018, which went into effect in December 2018. The amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008). SB 375, the Sustainable Communities and Climate Protection Act, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, the CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the Metropolitan Planning Organizations (MPOs); the targets require a 6 to 15 percent reduction by 2020 and between 13 to 19 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs will work with local jurisdictions in the development of a Sustainable Communities Strategy (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. Pursuant to SB 375, the Los Angeles/Southern California reduction targets for per capita vehicular emissions were 8 percent by 2020 and are 19 percent by 2035 as shown in **Table 4.8.C**.

²² CARB. 2017. *California's 2017 Climate Change Scoping Plan*. November.

²³ CARB. 2022. *2022 Scoping Plan*. November 16. Website: <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf> (accessed December 2022).

Table 4.8.C: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets

Metropolitan Planning Organization	By 2020 (%)	By 2035 (%)
San Francisco Bay Area	10	19
San Diego	15	19
Sacramento	7	19
Central Valley/San Joaquin	6–13	13–16
Los Angeles/Southern California	8	19

Source: SB 375 Regional Plan Climate Targets (California Air Resources Board 2018b).

Executive Order B-30-15 (2015). Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. The CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target and therefore is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act. SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California’s renewable portfolio standard from 33 percent to 50 percent; and
- Increasing energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission for the private utilities and by the California Energy Commission for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to State energy agencies under existing law. The addition made by this legislation requires State energy agencies to plan for and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197. In the summer of 2016, the Legislature passed, and the Governor signed, SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown’s April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps California on the path toward achieving the State’s 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC

analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO₂e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by the CARB was posted in December 2016.

Senate Bill 100. On September 10, 2018, Governor Brown signed SB 100, which raises California's Renewables Portfolio Standard (RPS) requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18. EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs the CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO₂e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Title 24, Building Standards Code and CALGreen Code. The California Building Standards Code, or Title 24 of the California Code of Regulations (CCR), contains the regulations that govern the construction of buildings in California. Within the Building Standards Code, two parts pertain to the incorporation of both energy efficient and green building elements into land use development. Part 6 is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. The California Building Standards Commission established the California Green Building Standards Code (CALGreen Code), which sets performance standards for residential and non-residential development to reduce environmental impacts and encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code is updated every 3 years and was most recently updated in 2019 to include new mandatory measures for residential as well as non-residential uses; the new measures took effect on January 1, 2020. The next set of standards were adopted in 2022 and will apply to projects seeking building permits on or after January 1, 2023. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Cap and Trade. The development of a cap-and-trade program was included as a key reduction measure of the CARB AB 32 Climate Change Scoping Plan. The cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. The cap-and-trade emissions trading program developed by the CARB took effect on January 1, 2012, with enforceable

compliance obligations beginning on January 1, 2013. The cap-and-trade program aims to regulate GHG emissions from the largest producers in the State by setting a statewide firm limit, or cap, on allowable annual GHG emissions. The cap was set in 2013 at approximately 2 percent below the emissions forecast for 2020. In 2014, the cap declined approximately 2 percent. Beginning in 2015 and continuing through 2020, the cap has been declining approximately 3 percent annually. The CARB administered the first auction on November 14, 2012, with many of the qualified bidders representing corporations or organizations that produce large amounts of GHG emissions, including energy companies, agriculture and food industries, steel mills, cement companies, and universities. On January 1, 2015, compliance obligation began for distributors of transportation fuels, natural gas, and other fuels. The cap-and-trade program was initially slated to sunset in 2020, but the passage of SB 398 in 2017 extended the program through 2030.²⁴

Executive Order N-79-20. EO N-79-20, which was signed by the Governor on September 23, 2020, sets the following goals for the State: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the State shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the State shall be zero-emission by 2035, where feasible.

California Integrated Waste Management Act. To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Through other statutes and regulations, this 50 percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal. In 2011, AB 341 modified the California Integrated Waste Management Act and directed the California Department of Resources Recycling and Recovery (CalRecycle) to develop and adopt regulations for mandatory commercial recycling. The resulting 2012 Mandatory Commercial Recycling Regulation requires that on and after July 1, 2012, certain businesses that generate 4 cubic yards or more of commercial solid waste per week shall arrange recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a statewide recycling goal of 75 percent; the 50 percent disposal reduction mandate still applies for cities and counties under AB 939, the Integrated Waste Management Act. In April 2016, AB 1826 further modified the California Integrated Waste Management Act, requiring businesses that generate a specified amount of organic waste per week to arrange for recycling services for that organic waste in a specified manner. If CalRecycle determines that statewide disposal of organic waste has not been reduced by 50 percent below 2014 levels by 2020, businesses generating more than 2 cubic yards of organic waste per week would be subject to these waste collection requirements. Diverting organic waste from landfills reduces emissions of CH₄. This is equivalent to reducing anaerobic decomposition of

²⁴ CARB. 2014. Cap-and-Trade Program. Website: www.arb.ca.gov/cc/capandtrade/capandtrade.htm (accessed September 2022).

organic waste that would have otherwise occurred in landfills where organic waste is often buried with other inorganic waste.

Low Carbon Fuel Standard. In January 2007, EO S-01-07 established an LCFS. This executive order calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that an LCFS for transportation fuels be established for California. The LCFS applies to all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction equipment. In June 2007, the CARB adopted the LCFS under AB 32 pursuant to Health and Safety Code Section 38560.5, and, in April 2009, the CARB approved the new rules and carbon intensity reference values with new regulatory requirements taking effect in January 2011. The standards require providers of transportation fuels to report on the mix of fuels they provide and demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of "credits" earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the "deficits" earned from selling higher intensity fuels. In response to certain court rulings, the CARB re-adopted the LCFS regulation in September 2015, and the LCFS went into effect on January 1, 2016. In 2018, the CARB approved amendments to the regulation to readjust carbon intensity benchmarks to meet California's 2030 GHG reductions targets under SB 32. These amendments include opportunities to promote zero emission vehicle (ZEV) adoption, carbon capture and sequestration, and advanced technologies for decarbonization of the transportation sector.

Advanced Clean Cars Program. In January 2012, the CARB approved the Advanced Clean Cars program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of ZEVs, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's ZEV regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the State. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 40 percent fewer GHGs and 75 percent fewer smog-forming emissions than 2012 model year vehicles.

Executive Order B-48-18. In January 2018, Governor Brown signed EO B-48-18 requiring all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current fast chargers. This order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required

to participate in updating the 2016 Zero-Emissions Vehicle Action Plan to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential land uses, through the LCFS Program, and recommend how to ensure affordability and accessibility for all drivers.

4.8.5.3 Regional Regulations

Menifee is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the Southern California Association of Governments (SCAG) and the South Coast Air Quality Management District (SCAQMD). SCAG's 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted September 3, 2020, is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. A GHG consistency analysis was conducted to determine whether or not the proposed Project would be consistent with the RTP/SCS.

Southern California Association of Governments. SCAG is a regional council consisting of the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In total, the SCAG region encompasses 191 cities and over 38,000 square miles within Southern California. SCAG is the MPO serving the region under federal law and serves as the Joint Powers Authority, the Regional Transportation Planning Agency, and the Council of Governments under State law. As the Regional Transportation Planning Agency, SCAG prepares long-range transportation plans for the Southern California region, including the RTP/SCS and the 2008 Regional Comprehensive Plan (RCP).

On September 3, 2020, SCAG adopted Connect SoCal—The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (2020–2045 RTP/SCS).²⁵ In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled (VMT) from automobiles and light-duty trucks and thereby reduce GHG emissions from these sources. For the SCAG region, the CARB has set GHG reduction targets at 8 percent below 2005 per capita emissions levels by 2020, and 19 percent below 2005 per capita emissions levels by 2035. The RTP/SCS lays out a strategy for the region to meet these targets. Overall, the SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high-quality transit areas and livable corridors, and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles.²⁶ However, the SCS does not require that local General Plans,

²⁵ Southern California Association of Governments (SCAG). 2020. Connect SoCal: The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176 (accessed November 2021).

²⁶ SCAG. 2020. Connect SoCal: The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176 (accessed November 2021).

Specific Plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

South Coast Air Quality Management District. In 2008, the SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the Basin. The Working Group developed several different options that are contained in the SCAQMD 2008 draft guidance document titled Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans²⁷ that could be applied by lead agencies. On September 28, 2010, SCAQMD Working Group Meeting #15 provided further guidance, including a tiered approach for evaluating GHG emissions for development projects where the SCAQMD is not the lead agency. The SCAQMD has not presented a finalized version of these thresholds to the governing board.

The SCAQMD identifies the emissions level for which a project would not be expected to substantially conflict with any State legislation adopted to reduce statewide GHG emissions. As such, the utilization of a service population represents the rates of emissions needed to achieve a fair share of the State’s mandated emissions reductions. Overall, the SCAQMD identifies a GHG efficiency level that, when applied statewide or to a defined geographic area, would meet the post-2020 emissions targets as required by AB 32 and SB 32. If projects are able to achieve targeted rates of emissions per the service population, the State will be able to accommodate expected population growth and achieve economic development objectives, while also abiding by AB 32’s emissions target and future post-2020 targets.

4.8.5.4 Local Regulations

City of Menifee General Plan. The City of Menifee addresses GHG in the Open Space and Conservation Element of the City’s General Plan. The Open Space and Conservation Element contains goals, policies, and implementing actions that works toward achieving an environmentally aware community that is responsive to changing climate conditions and actively seeks to reduce local GHG emissions. The following goals, policies, and implementing actions related to GHG are presented in the Conservation Element²⁸ and are applicable to the proposed Project:

Policy OCS-10.1: Align the City’s local GHG reduction targets to be consistent with statewide GHG reduction target of AB 32.

Policy OCS-10.2: Align the City’s long term GH reduction goals consistent with the statewide GHG reduction goal of Executive Order S-03-05.

Policy OCS-10.3: Participate in regional greenhouse gas emission reduction initiatives.

Policy OCS-10.4: Consider impact to climate change as a factor in evaluation of policies, strategies, and projects.

²⁷ South Coast Air Quality Management District (SCAQMD). 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans.

²⁸ Menifee, City of. 2013. Menifee General Plan, Open Space and Conservation Element. Website: <https://www.cityofmenifee.us/250/Open-Space-Conservation-Element> (accessed September 2022).

4.8.6 Thresholds of Significance

The City has not established local CEQA significance thresholds as described in Section 15064.7 of the *State CEQA Guidelines*. Therefore, significance determinations utilized in this section are from Appendix G of the *State CEQA Guidelines*. According to Section VIII of Appendix G to the *State CEQA Guidelines*, the proposed Project would result in a significant impact associated with greenhouse gas emissions if the proposed Project or any proposed Project-related component would:

Threshold 4.8-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Threshold 4.8-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases.

4.8.6.1 Regional Emissions Thresholds

The SCAQMD has adopted a significance threshold of 10,000 MT CO₂e per year (MT CO₂e/year) for permitted (stationary) sources of GHG emissions for which SCAQMD is the designated lead agency. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting held in September 2010 (Meeting No. 15), SCAQMD proposed to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

- **Tier 1. Exemptions:** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- **Tier 2. Consistency with a locally adopted GHG Reduction Plan:** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.
- **Tier 3. Numerical Screening Threshold:** If GHG emissions are less than the numerical screening-level threshold, project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD, under Option 1, is proposing a "bright-line" screening-level threshold of 3,000 MT CO₂e/year for all land use types or, under Option 2, the following land-use-specific thresholds: 1,400 MT CO₂e for commercial projects, 3,500 MT CO₂e for residential projects, or 3,000 MT CO₂e for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on its review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal and therefore less than cumulatively considerable impact on GHG emissions.

- **Tier 4. Performance Standards:** If emissions exceed the numerical screening threshold, a more detailed review of the project's GHG emissions is warranted. SCAQMD has proposed an efficiency target for projects that exceed the bright-line threshold. The current recommended approach is per capita efficiency targets. SCAQMD is not recommending use of a percent emissions reduction target. Instead, SCAQMD proposes a 2020 efficiency target of 4.8 MT CO₂e per year per service population (MT CO₂e/year/SP) for project-level analyses and 6.6 MT CO₂e/year/SP for plan-level projects (e.g., program-level projects such as general plans). The GHG efficiency metric divides annualized GHG emissions by the service population, which is the sum of residents and employees, per the following equation:

$$\text{Rate of Emission: GHG Emissions (MT CO}_2\text{e/year)} \div \text{Service Population}$$

The efficiency evaluation consists of comparing the project's efficiency metric to efficiency targets. Efficiency targets represent the maximum quantity of emissions each resident and employee in the State of California could emit in various years based on emissions levels necessary to achieve the statewide GHG emissions reduction goals. A project that results in a lower rate of emissions would be more efficient than a project with a higher rate of emissions, based on the same service population. The metric considers GHG reduction measures integrated into a project's design and operation (or through mitigation). The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for the CARB's 2008 Scoping Plan.

However, the SCAQMD's thresholds are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan. Because the proposed Project would begin operations in the post-2020 timeframe, the 2020 numerical screening threshold of 3,000 MT CO₂e/year and the efficiency target of 4.8 MT CO₂e/year/SP would need to be adjusted to reflect the State's post-2020 GHG reduction goals.

SCAQMD has yet to publish a quantified GHG efficiency threshold for the 2030 or 2050 target. A scaled threshold consistent with State goals detailed in SB 32, Executive Order B-30-15, and Executive Order S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, respectively, was developed for 2031, when the build out would be complete.

Though the SCAQMD has not published a quantified threshold beyond 2020, this assessment uses a threshold of 975 MT CO₂e/year or 1.6 CO₂e/year/SP, which was calculated for the build out year of 2045 based on the GHG reduction goals of SB 32 and Executive Order B-30-15. These thresholds are therefore based on the SCAQMD thresholds using a Statewide 2020 target (achieve 1990 levels by 2020) regressed to fit the Statewide 2050 target (80 percent below 1990 levels of emissions).

The scaled thresholds were calculated as follows:

- Based on the current target of 80 percent below 1990 levels by 2050 – 80 percent below the 3,000 MT CO₂e/year or 4.8 MT CO₂e/year/SP 2020 target would represent the 2050 threshold (600 MT CO₂e/year or 1.0 MT CO₂e/year/SP).

- The threshold between 2020 and 2050 is therefore scaled at 2.7 percent per year (80 percent across the 30-year period).
- With an anticipated Project build out date of 2031, the proposed Project's target would be less than 2,109 MT CO₂e/year or 3.4 MT CO₂e/year/SP (or 29.7 percent below the 2020 target at 2.7 percent per year between the 11-year period of 2020 and 2031).

For the purpose of this analysis, the proposed Project will first be compared to the adjusted screening-level Tier 3 Numerical Screening Threshold of 2,109 MT CO₂e/year for all land use types. If it is determined that the proposed Project is estimated to exceed this screening threshold, it will then be compared to the efficiency-based threshold of 3.4 MT CO₂e/year/SP.

4.8.7 Project Impacts

The proposed Project proposes the approval of the Menifee Valley Specific Plan, which would facilitate the development of a 590.3-acre master planned community, consisting of 202.2 acres of residential uses, 44.5 acres of open space uses, 311.1 acres of commercial, business park, and public facility uses, and 32.4 acres of infrastructure.²⁹ Refer to **Section 3.3** for descriptions of the proposed number of residential units and the square footages of anticipated building space in the civic node, business/commercial park, and commercial planning areas.

In addition to certifying the EIR, the proposed Project includes a General Plan Amendment (GPA)³⁰ that proposes to change the existing SP 301 designation of the site to Menifee Valley Specific Plan; a Change of Zone (CZ)³¹ that proposes to change the existing SP 301 designation to its own Specific Plan zoning designation; a Specific Plan Amendment (SPA)³² that proposes to remove the project site from the existing SP 301 area; adoption of the Menifee Valley Specific Plan; approval of subdivision maps; and a Development Agreement.³³

The Project includes 59 acres of off-site improvements to support the operation and construction of the proposed Project. These improvements include roadway improvements and subsurface utility line installations and connections along Briggs Road, Menifee Road, and State Route 74 (SR-74); the installation of subsurface utility lines in the alignment of Matthews Road along segments of the Project site's southern boundary; and the installation of a nonvehicular bridge across Matthews Road and railroad tracks southwest of and parallel to Matthews Road to connect the Project site with the Heritage Lake community to the south.

²⁹ Refer to Table 3.A in Section 3.3 Project Characteristics.

³⁰ A GPA is an application that modifies the text, figures, or graphics contained within the General Plan. This may include, but is not limited to, changes from one General Plan designation to another designation for property within the city.

³¹ A CZ is a resolution that changes the zoning district classification of a particular parcel of land.

³² A SPA is like a GPA but for changing one Specific Plan designation to another designation for an area within the city.

³³ A Development Agreement executed between the City and the Specific Plan sponsor. The agreement refers to the proposed Specific Plan for the allowable land uses in the Specific Plan area and outlines other terms and conditions of approval associated with the Specific Plan's approval and implementation.

In addition, the Project includes off-site roadway improvements to address traffic impacts in conflict with the General Plan Circulation Element policies that strive to maintain desired LOS. These roadway improvements, which include widening and additional turn lanes as required, include Matthews Road/Case Road (between McLaughlin Road and Ethanac Road), McLaughlin Road (between Matthews Road/Case Road and Menifee Road), and McCall Boulevard (between Encanto Drive and Menifee Road).

4.8.7.1 Increase in Greenhouse Gas Emissions (Regional Construction and Operation)

Threshold 4.3-1: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

This section describes the proposed Project's construction- and operational-related GHG emissions and contribution to global climate change. SCAQMD has not addressed emissions thresholds for construction in its *CEQA Air Quality Handbook* (1993); however, SCAQMD requires quantification and disclosure. Thus, this section discusses construction emissions.

Construction. Construction activities associated with the proposed Project would produce combustion emissions from various sources. Construction would emit GHGs through the operation of construction equipment and from worker and builder supply vendor vehicles for the duration of the construction period. The combustion of fossil-based fuels creates GHGs such as CO₂, CH₄, and N₂O. Furthermore, the fueling of heavy equipment emits CH₄. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

As indicated above, SCAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are required to quantify and disclose GHG emissions that would occur during construction. The SCAQMD then requires the construction GHG emissions to be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the applicable interim GHG significance threshold tier. Since the proposed Project would be built over a 7-year period, the life of the Project would likely be longer than 30 years; however, to be conservative, this analysis still assumes a 30-year life.

On-Site Improvements. As stated in **Section 4.3.3 Methodology** in **Section 4.3 Air Quality**, construction emissions were estimated for the Project using CalEEMod, consistent with SCAQMD recommendations. As discussed in **Chapter 3.0**, the Project site would be mass graded in one phase, with fine grading and implementing development to follow in three phases. This analysis assumes that Phase 1 would include the following: Planning Areas 1 and 2 (Residential); Planning Areas 7A, 7B, and 8A (Open Space-Recreation, Open Space-Conservation, and Greenbelts); Planning Area 11 (Business Park); Planning Area 12 (Commercial Business Park); Residential Spine Street; Briggs Road (along Planning Areas 1, 7A, and 7B); Menifee Road (along Planning Area 11); McLaughlin Road and Malaga Road (from SR-74 to McLaughlin Road); and Pedestrian and Bike-Only Bridge. In addition, this analysis assumes that Phase 2 would include the following: Planning Areas 3, 4, 5 (Residential); Planning Area 6 (School); Planning Area 8B (Open Space-Greenbelt); Planning Area 9 (Public Facilities); Planning Area 10 (Business Park); Briggs Road (along Planning Areas 3 and 5); and Menifee Road (along Planning Area 9 and 10). This analysis also assumes that Phase 3 would include the following: Planning Area 13 (Commercial Retail) and SR-74 (along Planning Area 13).

assumptions (e.g., construction worker and truck trips and fleet activities) from CalEEMod were used. Construction-related GHG emissions are presented in **Table 4.8.E**. CalEEMod output sheets are included in **Appendix C**.

Table 4.8.E: Off-Site Improvements Construction Greenhouse Gas Emissions

Construction Year	Annual Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
2024	94.5	<0.1	<0.1	95.3
2025	83.8	<0.1	<0.1	84.5
Total Construction GHG Emissions				179.8
Amortized Construction Emissions				6.0

Source: Compiled by LSA Associates, Inc. (December 2022).

CH₄ = methane CO₂e = carbon dioxide equivalent N₂O = nitrous oxide
CO₂ = carbon dioxide MT/yr = metric tons per year

Off-Site Roadway Improvements. Implementation of the Project would also result in off-site roadway improvements to address traffic impacts in conflict with the General Plan Circulation Element policies that strive to maintain desired LOS. These roadway improvements, which include widening and additional turn lanes as required, include Matthews Road/Case Road (between McLaughlin Road and Ethanac Road), McLaughlin Road (between Matthews Road/Case Road and Menifee Road), and McCall Boulevard (between Encanto Drive and Menifee Road) and would include a total of 84.16 acres of improvements. As discussed in **Section 4.3.3 Methodology** in **Section 4.3 Air Quality**, a separate CalEEMod analysis was used to evaluate construction emissions associated with the off-site roadway improvements. The construction schedule for the off-site roadway improvements was also based on information provided by the Project Applicant, which assumes that construction activities would occur from 2024 and occur for approximately 18 months. This analysis assumes construction activities associated with the off-site roadway improvements would include site preparation, grading, paving, and architectural coating activities. In addition, as described above, this analysis utilized default construction equipment in CalEEMod, except for removal of the building construction phase. This analysis assumes the use of Tier 2 construction equipment. In addition, this analysis assumes that there would be 12 construction workers per day. Other construction details are not yet known; therefore, default assumptions (e.g., construction worker and truck trips and fleet activities) from CalEEMod were used. Construction-related GHG emissions are presented in **Table 4.8.F**. CalEEMod output sheets are included in **Appendix C**.

Total Project Construction Emissions. When off-site improvements emissions are combined with the on-site improvements emissions, it is estimated that the proposed Project would generate approximately 45,159.3 MT CO₂e during construction of the Project. When amortized over the 30-year life of the Project, annual emissions would be 1,505.3 MT CO₂e. Construction emissions would be temporary in nature and would only occur for the duration of the construction period.

**Table 4.8.F: Off-Site Roadway Improvements Construction
Greenhouse Gas Emissions**

Construction Year	Annual Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
2024	174.9	0.1	<0.1	176.3
2025	426.4	0.1	<0.1	429.8
2026	9.0	<0.1	<0.1	9.0
Total Construction GHG Emissions				615.1
Amortized Construction Emissions				20.5

Source: Compiled by LSA Associates, Inc. (October 2023).

CH₄ = methane

MT/yr = metric tons per year

CO₂ = carbon dioxide

N₂O = nitrous oxide

CO₂e = carbon dioxide equivalent

Operation. Long-term GHG emissions are typically generated from mobile sources (e.g., vehicle trips), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include Project-generated vehicle trips to and from the Project. Area-source emissions would be associated with activities such as landscaping and maintenance on the Project site. Energy source emissions would be generated at off-site utility providers because of increased electricity demand generated by the Project. Waste source emissions generated by the proposed Project include energy generated by land filling and other methods of disposal related to transporting and managing Project-generated waste. In addition, water source emissions associated with the proposed Project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment.

On-Site Improvements. Long-term operational emissions associated with the on-site improvements were calculated using CalEEMod. Trip generation rates used in CalEEMod for the Project were based on the Project’s trip generation estimates, which assume that Phase 1 would typically generate approximately 19,094 average daily trips, Phase 2 would typically generate approximately 20,750 average daily trips, and Phase 3 would typically generate approximately 20,726 average daily trips (refer to **Appendix K-1** for trip generation and trip length estimates). As such, build out of the proposed Project would generate a total of approximately 60,570 average daily trips. In addition, trip lengths in CalEEMod were based on information provided in **Section 4.17**. This analysis also assumes that the proposed Project would utilize low volatile organic compound (VOC) paint as required by SCAQMD Rule 113, would only include natural gas hearths, and would include drought-tolerant plants, efficient irrigation systems, and low-flow fixtures. When Project-specific data were not available, default assumptions (e.g., energy usage, water usage, and solid waste generation) from CalEEMod were used to estimate Project GHG emissions. **Table 4.8.G** shows the calculated GHG emissions for the on-site improvements. CalEEMod output sheets are included in **Appendix C**.

Table 4.8.G: Unmitigated On-Site Improvements Operational GHG Emissions

Emission Type	Operational Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Phase 1				
Phase 1 Area Emissions	242.8	0.2	<0.1	250.6
Phase 1 Energy Emissions	7,987.3	0.6	0.1	8,029.9
Phase 1 Mobile Emissions	16,501.3	0.8	1.1	16,856.9
Phase 1 Waste Emissions	985.2	58.2	0.0	2,440.7
Phase 1 Water Emissions	2,215.8	25.9	0.6	3,051.3
Total Phase 1 Emissions				30,629.5
Phase 2				
Phase 2 Area Emissions	319.4	0.3	<0.1	329.6
Phase 2 Energy Emissions	6,779.6	0.5	0.1	6,815.9
Phase 2 Mobile Emissions	16,091.6	0.8	1.0	16,412.2
Phase 2 Waste Emissions	921.6	54.5	0.0	2,283.2
Phase 2 Water Emissions	1,765.3	20.4	0.5	2,421.7
Total Phase 2 Emissions				28,262.6
Phase 3				
Phase 3 Area Emissions	<0.1	<0.1	0.0	<0.1
Phase 3 Energy Emissions	1,271.4	0.1	<0.1	1,278.0
Phase 3 Mobile Emissions	7,280.9	0.5	0.5	7,431.1
Phase 3 Waste Emissions	119.4	7.1	0.0	295.7
Phase 3 Water Emissions	134.2	1.1	<0.1	169.5
Total Phase 3 Emissions				9,174.3
Total Project Emissions				
Total Project Area Emissions	400.4	<0.1	<0.1	403.3
Total Project Energy Emissions	16,038.4	1.1	0.2	16,123.8
Total Project Mobile Emissions	40,241.1	2.1	2.6	41,064.0
Total Project Waste Emissions	2,026.2	119.7	0.0	5,019.8
Total Project Water Emissions	3,364.9	38.1	0.9	4,594.0
Total Project Emissions				67,205.0
Amortized Construction Emissions				1,478.8
Total Annual Emissions				68,683.8
SCAQMD Scaled 2031 Threshold				2,109
Exceeds Threshold?				Yes
Service Population Emissions				6.1
SCAQMD Scaled 2031 Service Population Threshold				3.4
Exceeds Threshold?				Yes

Source: Compiled by LSA Associates, Inc. (November 2022).

CH₄ = methane
CO₂ = carbon dioxide
CO₂e = carbon dioxide equivalent
MT/yr = metric tons per year
N₂O = nitrous oxide

As discussed above, according to SCAQMD, a project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than 2,109.0 MT CO₂e per year. Based on the analysis results, the proposed Project would result in 68,683.8 MT CO₂e per year, which would exceed the scaled SCAQMD threshold of 2,109.0 MT CO₂e per year. Therefore, the following discussion compares the proposed Project to the efficiency-based threshold.

As discussed further in **Section 4.14**, the Specific Plan uses on the Project site would result in direct population growth in the city through development of up to 1,718 units. Using a rate of 3.12 persons per single-family residential household and 2.48 persons per multi-family household, as determined by the California Government Code Section 66477 (a) and as stated in the City Municipal Code, American Community Survey 2015–2019 5-Year Estimates,³⁴ the proposed single-family and multi-family residential units have the potential to increase the population in Menifee by up to approximately 5,220 persons.³⁵ In addition, as described in **Section 4.14**, commercial, business park, commercial business park, and public facility uses on the Project site would provide employment to 6,225 people at Specific Plan build out. Therefore, the total service population (residents plus employees) associated with the proposed Project would be 11,445 people. Therefore, the proposed Project would result in per service population emission of 6.0 MT CO₂e per year per service population, which exceeds the SCAQMD’s scaled screening threshold of 3.4 MT CO₂e per year per service population. As such, implementation of **Mitigation Measures AIR-2** (see **Section 4.3**) and **GHG-1** would require the implementation of feasible GHG reduction measures to reduce GHG emissions.

While **Mitigation Measures AIR-2** and **GHG-1** would serve to reduce GHG emissions associated with build out of the proposed Project, GHG emission impacts would remain significant and unavoidable because compliance with future efficiency targets cannot be ensured. As such, impacts would be *significant and unavoidable*.

Off-Site Improvements. As discussed above, the proposed Project also includes 59 acres of off-site improvement areas along Menifee Road, SR-74, Matthews Road, and Briggs Road. As discussed in **Section 4.3.3 Methodology** in **Section 4.3 Air Quality**, a separate CalEEMod analysis was used to evaluate construction emissions associated with the off-site improvements. The off-site improvements model run assumed 59 acres of *Other Asphalt Surfaces* and assumed that the off-site improvements would not generate any vehicle trips. When Project-specific data were not available, default assumptions (e.g., energy usage, water usage, and solid waste generation) from CalEEMod were used to estimate Project GHG emissions. Operational off-site improvements GHG emissions are presented in **Table 4.8.H**. CalEEMod output sheets are included in **Appendix C**.

As such, implementation of **Mitigation Measures AIR-2** and **GHG-1** would require the implementation of feasible GHG reduction measures to reduce GHG emissions.

³⁴ United States Census Bureau. 2019. 2015–2019 5-Year Estimates. Table DP02. Website: <https://data.census.gov/cedsci/table?q=persons%20per%20household&t=Family%20Size%20and%20Type%3AHousehold%20and%20Family&g=1600000US0646842&tid=ACSDP1Y2019.DP02&moe=false> (accessed August 3, 2022).

³⁵ 87.2 percent of residential development is single-family; 12.8 percent of residential development is multi-family (per the MVSP).

- ♦ $87.2\% * 1,718 = 1,498$ single-family units; $12.8\% * 1,718 = 220$ multi-family units
- ♦ 3.12 persons per unit * $1,498$ units = $4,674$ persons (single-family households)
- ♦ 2.48 persons per unit * 220 units = 546 persons (multi-family households)
- ♦ $4,674 + 546 = 5,220$ persons

Table 4.8.H: Unmitigated Off-Site Improvements Operational Emissions

Emission Type	Operational Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Total Off-Site Emissions	<0.1	0.0	0.0	<0.1
Amortized Construction Emissions				6.0
	Total Annual Emissions			6.0
	SCAQMD Scaled 2031 Threshold			2,109
	Exceeds Threshold?			No

Source: Compiled by LSA Associates, Inc. (December 2022).

CH₄ = methane MT/yr = metric tons per year

CO₂ = carbon dioxide N₂O = nitrous oxide

CO₂e = carbon dioxide equivalent

While **Mitigation Measures AIR-2** and **GHG-1** would serve to reduce GHG emissions associated with build out of the proposed Project, GHG emission impacts would remain significant and unavoidable because compliance with future efficiency targets cannot be ensured. As such, impacts would be *significant and unavoidable*.

Off-Site Roadway Improvements. Implementation of the Project would also result in off-site roadway improvements to address traffic impacts in conflict with the General Plan Circulation Element policies that strive to maintain desired LOS. These roadway improvements, which include widening and additional turn lanes as required, include Matthews Road/Case Road (between McLaughlin Road and Ethanac Road), McLaughlin Road (between Matthews Road/Case Road and Menifee Road), and McCall Boulevard (between Encanto Drive and Menifee Road). As discussed in **Section 4.3.3 Methodology** in **Section 4.3 Air Quality**, a separate CalEEMod analysis was used to evaluate construction emissions associated with the off-site improvements. The off-site roadway improvements model run assumed 84.16 acres of *Other Asphalt Surfaces* and assumed that the off-site roadway improvements would not themselves generate any vehicle trips. When Project-specific data were not available, default assumptions (e.g., energy usage, water usage, and solid waste generation) from CalEEMod were used to estimate Project emissions. Operational off-site improvements GHG emissions are presented in **Table 4.8.I**. CalEEMod output sheets are included in **Appendix C**.

As shown in **Table 4.8.I**, GHG emissions associated with the off-site roadway improvements would be minimal. However, similar to the off-site improvements along Menifee Road, SR-74, Matthews Road, and Briggs Road, implementation of **Mitigation Measures AIR-2 and GHG-1** would require the implementation of feasible GHG reduction measures to reduce GHG emissions.

While **Mitigation Measures AIR-2** and **GHG-1** would serve to reduce GHG emissions associated with buildout of the proposed Project, GHG emission impacts would remain significant and unavoidable because compliance with future efficiency targets cannot be ensured. As such, impacts would remain *significant and unavoidable*.

**Table 4.8.I: Unmitigated Off-Site Roadway Improvements
Operational Emissions**

Emission Type	Operational Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Total Off-Site Emissions	<0.1	0.0	0.0	<0.1
Amortized Construction Emissions				20.5
Total Annual Emissions				20.5
SCAQMD Scaled 2031 Threshold				2,109
Exceeds Threshold?				No

Source: Compiled by LSA Associates, Inc. (October 2023).
 CH₄ = methane MT/yr = metric tons per year
 CO₂ = carbon dioxide N₂O = nitrous oxide
 CO₂e = carbon dioxide equivalent

Total Project Operational Emissions. Table 4.8.J below shows the total Project GHG emissions.

Table 4.8.J: Unmitigated Total Project Operational GHG Emissions

Emission Type	CO ₂ e Emissions (MT/yr)
Total On-Site Operational Emissions	67,205.0
Amortized On-Site Construction Emissions	1,478.8
Total Off-Site Emissions	<0.1
Amortized Off-Site Construction Emissions	6.0
Total Off-Site Roadway Emissions	<0.1
Amortized Off-Site Roadway Construction Emissions	20.5
Total Project Annual Emissions	
	68,710.3

Source: Compiled by LSA Associates, Inc. (October 2023).
 CO₂e = carbon dioxide equivalent
 MT/yr = metric tons per year

As identified above, according to SCAQMD, a project would have less than significant GHG emissions if it would result in operational-related GHG emissions of less than 2,109.0 MT CO₂e per year or 3.4 MT CO₂e per year per service population. Based on the analysis results, the proposed Project would result in a total of 68,710.3 MT CO₂e per year, which would exceed the scaled SCAQMD threshold of 2,109.0 MT CO₂e per year. In addition, based on a total service population of 11,445 people, the proposed Project would result in per service population emission of 6.0 MT CO₂e per year per service population, which exceeds the SCAQMD’s scaled screening threshold of 3.4 MT CO₂e per year per service population. As such, implementation of **Mitigation Measures AIR-2** and **GHG-1** would require the implementation of feasible GHG reduction measures to reduce GHG emissions.

While **Mitigation Measures AIR-2** and **GHG-1** would serve to reduce GHG emissions associated with build out of the proposed Project, GHG emission impacts would remain significant and unavoidable because compliance with future efficiency targets cannot be ensured. As such, impacts would be **significant and unavoidable**.

Significance Determination Prior to Mitigation: Potentially Significant Impact

Regulatory Compliance Measures and Mitigation Measures: The following mitigation measures would be required for the proposed Project.

Mitigation Measure AIR-2

Prior to issuance of building permits, the City of Menifee shall identify Project design details and specifications, where feasible, to document implementation and compliance with the following emission reduction measures. Implementation of the following measures is considered to be applicable, feasible, and effective in reducing criteria pollutant emissions generated by the Project:

- All Project Applicants shall consider all feasible alternatives to minimize emissions from diesel equipment (e.g., trucks, construction equipment, and generators).
- For high density and mixed-use developments, Project Applicants shall consult with the local transit agency and incorporate all appropriate and feasible transit amenities into the plans.
- All Project Applicants shall incorporate fuel-efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces, boiler units, and low or zero-emitting architectural coatings. Utilize only Energy Star heating, cooling, and lighting devices, and appliances.
- All Project Applicants shall utilize energy-efficient design features, including appropriate site orientation, use of lighter color roofing and building materials, and use of deciduous shade trees and windbreak trees to reduce fuel consumption for heating and cooling.
- All Project Applicants shall provide bicycle parking/storage facilities on site. Bicycle parking facilities should be near destination points and easy to find. At least one bicycle parking space for every 20 vehicle parking spaces should be provided.
- All Project Applicants shall provide building access and paths which are physically separated from street parking lot traffic and that eliminate physical barriers such as walls, berms, landscaping and slopes that impede the use of pedestrians, bicycle facilities, or public transportation vehicles.

- All Project Applicants shall provide continuous sidewalks separated from the roadway by landscaping and on-street parking where provided.
- All Project Applicants shall link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel.
- All Project Applicants shall provide traffic reduction modifications to residential roads, such as: narrower streets, speed platforms, bulb-outs, and intersection modifications designed to reduce vehicle speeds and to encourage pedestrian and bicycle travel.
- For all parking lots, Project Applicants shall provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.
- All Project Applicants shall provide pedestrian access between bus service and major transportation points and to destination points within the Project.
- For all high-density residential, mixed-use, business/commercial park, and commercial uses, Project Applicants shall provide a display case or kiosk displaying transportation information, such as bike route maps, bus schedules, and carpooling and car sharing in a prominent area accessible to employees, residents, or visitors.
- All Project Applicants shall design street block patterns consistent with the Menifee Valley Specific Plan and City of Menifee Standards and Ordinances.
- For all mixed-use, business/commercial park, and commercial uses, Project Applicants shall provide preferential parking spaces near the entrance of buildings for those who carpool/vanpool/rideshare and provide signage.
- All Project Applicants shall improve the thermal integrity/efficiency of buildings and reduce the thermal load with automated and timed temperature controls or occupant sensors.
- Project Applicants for manufacturing and light industrial uses that require refrigerated vehicles, shall install an adequate number of electrical service connections at loading docks for

plugging in the anticipated number of refrigerated trailers to reduce idling time and emissions.

- Project Applicants for manufacturing and light industrial uses shall consider energy storage and combined heat and power in appropriate applications to optimize renewable energy generation systems and avoid peak energy use.
- Project Applicants for manufacturing and light industrial uses with truck delivery and loading areas and truck parking spaces shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with CARB Rule 2845 (13 California Code of Regulations [CCR] Chapter 10, Section 2485).
- Project Applicants shall install 240-volt electrical outlets or Level 3 chargers in parking lots that would enable charging of neighborhood electric vehicles (NEVs) and/or battery powered vehicles.
- Project Applicants shall maximize use of solar energy including solar panels, including installing the maximum possible number of solar energy arrays on the building roofs to generate solar energy.
- Project Applicants shall maximize the planting of trees in landscaping and parking lots.
- Project Applicants shall use light-colored paving and roofing materials.
- Project Applicants shall install outdoor electrical outlets to promote the use of electric lawn mowers and leaf blowers.

Mitigation Measure GHG-1

Prior to issuance of a building permit, the City of Menifee shall identify Project design details and specifications to document implementation and compliance with the following emission reduction measures. Implementation of the following measures will be required prior to building permits and is considered to be applicable, feasible, and effective in reducing greenhouse gas emissions generated by the Project:

- Exceed Title 24 standards by 20 percent.
- Install programmable thermostat timers and smart meters.

- Develop Basis of Design (BOD) documents, commissioning plans, and commissioning reports for heating, ventilation, and air conditioning (HVAC) systems. Perform functional performance testing and system operations training.
- Install energy efficient appliances and high-efficiency electric hot water heaters.
- Provide electric vehicle (EV) chargers in parking lots.
- Provide necessary infrastructure to allow use of 50 percent recycled water for outdoor irrigation.
- Adopt a water conservation strategy.
- Use water-efficient landscape irrigation systems, reduce turf in landscapes and lawns, and plant native or drought-resistant trees.
- Use low VOC architectural coatings.
- Require cool roof materials (albedo ≥ 30).
- Maximize interior day light.
- Install rainwater collection systems.
- Restrict the use of water for cleaning outdoor surfaces/prohibit systems that apply water to non-vegetated surfaces.
- Plant shade trees within 40 feet of the south side or within 60 feet of the west sides of buildings, consistent with the Meniffee Valley Specific Plan Section 5, Landscape Standards.
- Create new vegetated open space.
- Institute or extend recycling and composting services.

Level of Significance After Mitigation: Significant and Unavoidable

4.8.7.2 Consistency with Greenhouse Gas Reduction Plans

Threshold 4.3-2: Would the proposed Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases?

Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and SCAG's 2020–2045 RTP/SCS. A consistency analysis with these plans for the proposed Project is presented below.

On-Site Improvements. This section describes the on-site improvements associated with the proposed Project and evaluates the Project consistency with the applicable plans.

CARB Scoping Plan. The CARB Scoping Plan is applicable to State agencies but is not directly applicable to cities/counties and individual projects (i.e., the Scoping Plan does not require the City to adopt policies, programs, or regulations to reduce GHG emissions). However, new regulations adopted by the State agencies outlined in the Scoping Plan result in GHG emissions reductions at the local level. As a result, local jurisdictions benefit from reductions in transportation emissions rates, increases in water efficiency in the building and landscape codes, and other statewide actions that would affect a local jurisdiction's emissions inventory from the top down. Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard and changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley California Advanced Clean Cars program). Although measures in the Scoping Plan apply to State agencies and not the proposed Project, the Project's GHG emissions would be reduced by compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore, the proposed Project was analyzed for consistency with the goals of the 2022 Scoping Plan, EO B-30-15, SB 32, and AB 197.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. The CARB released the 2017 Scoping Plan,³⁶ to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 builds on AB 32 and keeps California on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by the CARB was posted in December 2016.

The 2022 Scoping Plan³⁷ assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

The 2022 Scoping Plan focuses on building clean energy production and distribution infrastructure for a carbon-neutral future, including transitioning existing energy production and transmission infrastructure to produce zero-carbon electricity and hydrogen, and utilizing biogas resulting from wildfire management or landfill and dairy operations, among other substitutes. The 2022 Scoping Plan states that in almost all sectors, electrification will play an important role. The 2022 Scoping Plan evaluates clean energy and technology options and the transition away from fossil fuels, including adding four times the solar and wind capacity by 2045 and about 1,700 times the amount of current hydrogen supply. As discussed in the 2022 Scoping Plan, EO N-79-20 requires that all new passenger vehicles sold in California will be zero-emission by 2035,

³⁶ CARB. 2017a. *California's 2017 Climate Change Scoping Plan*. November.

³⁷ CARB. 2021. Op. cit.

and all other fleets will have transitioned to zero-emission as fully possible by 2045, which will reduce the percentage of fossil fuel combustion vehicles.

Energy measures are intended to increase renewable energy generation sources. Future projects would be required to comply with the latest Title 24 and CALGreen Code standards, regarding water efficiency and energy conservation requirements. In addition, electricity would be provided by Southern California Edison (SCE), which is required to increase its renewable energy sources to meet the Renewable Portfolio Standards mandate of 60 percent renewable supplies by 2030. In addition, SCE plans to continue to provide reliable service to its customers and upgrade its distribution systems as necessary to meet future demand. Therefore, the proposed Project would not conflict with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, future projects would be required to comply with the latest Title 24 and CALGreen Code standards, which include a variety of different measures, including reduction of wastewater and water use. In addition, the future projects would be required to comply with the California Model Water Efficient Landscape Ordinance. Therefore, the proposed Project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to increase zero emission vehicles and decrease VMT. As described in **Chapter 3.0**, the proposed Project is envisioned as a higher density housing development adjacent to commercial and employment opportunities to encourage pedestrian access and provide a consumer base for commercial uses and to help meet the existing and future housing needs of Menifee residents. The proposed Project would also provide pedestrian connections to adjacent parcels to provide connectivity and convenient access to the nearby existing and future commercial and retail uses. In addition, the proposed development would be located within an area of the city that is planned as a mixed-use, sustainable community and would include green spaces and recreational areas, as well as greenbelts and the preservation of Granite Hill. The Land Use Districts established in the Specific Plan area are organized such that residential uses are located in close proximity to employment centers and retail uses, thereby promoting alternative forms of transportation (e.g., walking and cycling) and reducing vehicle miles traveled. Overall, the nearby transit facilities and proposed improvements to the pedestrian network would support public transit use and walking and bicycling, which would reduce vehicle trips and VMT. As such, the proposed Project would not conflict with the identified transportation and motor vehicle measures.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy. SCAG's 2020–2045 RTP/SCS was adopted September 3, 2020. SCAG's RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The core vision in the 2020–2045 RTP/SCS is to better manage the existing transportation system through design management strategies, integrate land use decisions and technological advancements, create complete streets that are safe to all roadway users, preserve the transportation system, and expand transit and foster

development in transit-oriented communities. The 2020–2045 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as a forecast development that is generally consistent with regional-level general plan data. The forecasted development pattern, when integrated with the financially constrained transportation investments identified in the 2020–2045 RTP/SCS, would reach the regional target of reducing GHG emissions from autos and light-duty trucks by 19 percent by 2035 (compared to 2005 levels). The 2020–2045 RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the 2020–2045 RTP/SCS but provides incentives for consistency for governments and developers.

According to SCAG’s 2020–2045 RTP/SCS, the city’s population, households, and employment are forecast to increase by approximately 40,200 residents, 29,600 households, and 15,400 jobs, respectively, between 2016 and 2045.³⁸

The Project proposes the approval of the Menifee Valley Specific Plan (MVSP), which would facilitate the development of the Project site as a mixed-use, master planned community. The MVSP would establish guidelines for the future development of the planned community, which would consist of a residential area for single-family and multi-family residential units as well as green spaces and a potential elementary school site, recreation areas including a public sports park, greenbelts, and the preservation of Granite Hill, an area for public facilities which may include a fire station, transit stop, and other civic uses, a commercial area, business park, and commercial business park to provide commercial and retail uses as well as provide opportunities for employment.

As discussed further in **Section 4.14**, the Specific Plan uses on the Project site would result in direct population growth in the city through development of up to 1,718 units. Using a rate of 3.12 persons per single-family residential household and 2.48 persons per multi-family household, as determined by the California Government Code Section 66477 (a) and as stated in the City Municipal Code, American Community Survey 2015–2019 5-Year Estimates,³⁹ the proposed single-family and multi-family residential units have the potential to increase the population in Menifee by up to approximately 5,220 persons.⁴⁰ The currently proposed amendment to SP 301 would remove the Project site from SP 301, thereby creating a new Specific Plan which encompasses the Project site. As detailed in **Chapter 3.0**, SP 301 was

³⁸ Southern California Association of Governments (SCAG). 2020. *Connect SoCal 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy*. Website: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176 (accessed December 2022).

³⁹ United States Census Bureau. 2019. 2015–2019 5-Year Estimates. Table DP02. Website: <https://data.census.gov/cedsci/table?q=persons%20per%20household&t=Family%20Size%20and%20Type%3AHousehold%20and%20Family&g=1600000US0646842&tid=ACSDP1Y2019.DP02&moe=false> (accessed December 2022).

⁴⁰ 87.2 percent of residential development is single-family; 12.8 percent of residential development is multi-family (per the MVSP).

- ♦ $87.2\% * 1,718 = 1,498$ single-family units; $12.8\% * 1,718 = 220$ multi-family units
- ♦ 3.12 persons per unit * $1,498$ units = $4,674$ persons (single-family households)
- ♦ 2.48 persons per unit * 220 units = 546 persons (multi-family households)
- ♦ $4,674 + 546 = 5,220$ persons

approved for an overall development of 4,407 dwelling units, with 1,718 of those units within the boundary of the Project site. The Project proposes the development of up to 1,718 units; therefore, the Project would not reduce the intensity of residential land uses on the Project site in accordance with SB 330. Additionally, the Project would not induce unplanned population growth from residential uses on the Project site.

In addition, as described in **Section 4.14**, commercial, business park, commercial business park, and public facility uses on the Project site would provide employment to 6,225 people at Specific Plan build out. As of June 2022, the city had a labor force of 42,700, and the county had a labor force of 1,146,300, with approximately 1,700 and 45,300 people unemployed, respectively.⁴¹ The June 2022 unemployment rate was 4.0 percent for the city and 4.0 percent for the county.⁴² These elevated unemployment figures reflect the economic slowdown associated with the widespread shelter-in-place orders in effect throughout much of 2020 and 2021 due to the ongoing COVID-19 pandemic. Although there is a great deal of uncertainty regarding the pandemic's effect on the economy, it has resulted in reduced business activity and related higher unemployment in the area. This suggests an ample available local and regional labor pool to serve the long-term employment opportunities offered by the Project site and makes it unlikely that the Project's labor demand would need to draw a substantial number of employees from outside the region to meet the need for employees resulting from development of the Project site. The Project would provide jobs close to home for current and future city residents, and thus the Project would serve to improve the housing-jobs balance in the northeastern portion of the city.

As such, future development allowed under the proposed Project would accommodate planned regional housing and employment growth. The proposed Project is intended to provide economic development and jobs to the city and improve the ratio of jobs to housing in Menifee while delivering a mix of uses that would establish a sense of place for the community. Thus, the proposed Project would not substantially increase population, households, or employment in the city. As such, since the purpose of the proposed Project is to accommodate planned regional housing and employment growth in the city, the proposed Project would not exceed the growth assumptions in the SCAG's RTP/SCS.

Implementing SCAG's RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emissions reduction targets. Before development can occur, each discretionary development project is required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and State requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits. As such, future development associated with the proposed Project would be evaluated for the potential to interfere with SCAG's ability to achieve the region's GHG reduction target of 19

⁴¹ California Employment Development Department, Labor Market Information Division, Monthly Labor Force Data for Cities and Census Designated Places June 2022. <https://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html> (accessed July 31, 2022).

⁴² Ibid.

percent below 2005 per capita emissions levels by 2035, and whether regional mobile emissions would decrease in line with the goals of the RTP/SCS.

Based on the nature of the proposed Project, it is anticipated that implementation of the proposed Project would not interfere with SCAG’s ability to implement the regional strategies outlined in the RTP/SCS. Therefore, the proposed Project would not conflict with an adopted plan, policy, or regulation pertaining to GHG emissions, and impacts are considered less than significant. No mitigation is required.

Off-Site Improvements. The proposed Project also includes 59 acres of off-site improvement areas along Menifee Road, SR-74, Matthews Road, and Briggs Road. Off-site improvements include widening public roadways in conformance with the City’s General Plan Circulation Element. Therefore, roadway improvements within SR-74, Menifee, and Briggs Roads are consistent with the City’s planned roadway network and would not result in indirect unplanned growth within the city. The proposed roadway improvements and utility connections would not include housing or employment growth that would exceed growth assumptions in the SCAG’s RTP/SCS; therefore, impacts would be *less than significant*.

Off-Site Roadway Improvements. Implementation of the Project would also result in off-site roadway improvements to address traffic impacts in conflict with the General Plan Circulation Element policies that strive to maintain desired LOS. These roadway improvements, which include widening and additional turn lanes as required, include Matthews Road/Case Road (between McLaughlin Road and Ethanac Road), McLaughlin Road (between Matthews Road/Case Road and Menifee Road), and McCall Boulevard (between Encanto Drive and Menifee Road). These roadway improvements were identified in the General Plan Circulation Element and included in the Final General Plan Environmental Impact Report (EIR) certified by the City on December 18, 2013 (Certified 2013 EIR). Similar to the off-site improvements along Menifee Road, SR-74, Matthews Road, and Briggs Road, the widening of these public roadways would be in conformance with the City’s General Plan Circulation Element. In addition, the roadway improvements along Matthews Road (Case Road), McCall Boulevard, and McLaughlin Road were included in the General Plan and analyzed in the Certified 2013 EIR. Therefore, roadway improvements along Matthews Road (Case Road), McCall Boulevard, and McLaughlin Road are consistent with the City’s planned roadway network and would not result in indirect unplanned growth within the city. The proposed roadway improvements and utility connections would not include housing or employment growth that would exceed growth assumptions in the SCAG’s RTP/SCS; therefore, impacts would be *less than significant*.

Level of Significance Prior to Mitigation: Less Than Significant Impact

Regulatory Compliance Measures and Mitigation Measures: No compliance measures or mitigation measures are required.

Level of Significance After Mitigation: Less Than Significant Impact

4.8.8 Cumulative Impacts

Cumulative impacts are the collective impacts of one or more past, present, or future projects, that when combined, result in adverse changes to the environment. Climate change is a global environmental problem in which: (a) any given development project contributes only a small portion of any net increase in GHGs, and (b) global growth is continuing to contribute large amounts of GHGs across the world. Land use projects may contribute to the phenomenon of global climate change in ways that would be experienced worldwide, and with some specific effects felt in California. However, no scientific study has established a direct causal link between individual land use project impacts and global warming.

The analysis of impacts related to GHG emissions is inherently cumulative. As previously stated, GHG emissions associated with the build out under the proposed Project would exceed SCAQMD thresholds. Since GHG is a global issue, it is unlikely that the proposed Project would generate enough GHG emissions to influence GHG emissions on its own; however, because Project-related CO₂e emissions would exceed the scaled SCAQMD thresholds, the proposed Project would have a significant contribution to cumulatively considerable GHG emission impacts, even with implementation of proposed mitigation. Impacts would be ***significant and unavoidable***.

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