

Pemcor Commercial / Industrial Business Park Project

Energy and Greenhouse Gas Analysis Report

September 2024

CEQA Lead Agency:

City of Menifee
Community Development Department
29844 Haun Road
Menifee, CA 92586

Project Applicant:

PEMCOR Investment Group
Vancouver, BC Canada

Prepared by:



1650 Spruce Street, Suite 106
Riverside, California 92507

This page intentionally left blank.

Table of Contents

EXECUTIVE SUMMARY	1
1 INTRODUCTION	1-1
1.1 Report Organization.....	1-1
2 PROPOSED PROJECT DESCRIPTION	2-1
2.1 Project Location	2-1
2.1.1 Site Land Use and Zoning	2-1
2.1.2 Surrounding Land Uses	2-1
2.2 Existing Site Description and Operations	2-3
2.3 Proposed Site Development and Operations	2-3
2.3.1 Site Layout and Building Description.....	2-3
2.3.2 Site Access and Parking	2-3
2.3.3 Project Operations.....	2-5
2.4 Project Construction	2-7
3 ENERGY SETTING AND REGULATORY FRAMEWORK.....	3-1
3.1 Environmental Setting	3-1
3.1.1 Defining Energy: Sources, Units, and Means of Production	3-1
3.1.2 Historical and Current Energy Production and Consumption habits.....	3-4
3.2 Energy Regulatory Setting	3-11
3.2.1 Federal Energy Regulations	3-11
3.2.2 State Energy Regulations	3-12
3.2.3 City of Menifee General Plan.....	3-20
4 GREENHOUSE GAS SETTING AND REGULATORY FRAMEWORK.....	4-1
4.1 Defining Climate Change	4-1
4.1.1 Greenhouse Gases	4-1
4.1.2 Climate Change and California.....	4-3
4.1.3 Carbon Sequestration	4-6
4.2 Existing State GHG Emissions Levels.....	4-7
4.3 Federal, State, and Local Climate Change Regulations.....	4-8
4.3.1 Federal GHG Regulations.....	4-8
4.3.2 State Climate Change Regulations	4-9
4.3.3 City of Menifee General Plan.....	4-13
5 ENERGY IMPACT ANALYSIS	5-1
5.1 Thresholds of Significance	5-1
5.2 Energy Quantification Methodology.....	5-1
5.2.1 Construction.....	5-1
5.2.2 Operational	5-2
5.3 Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources	5-2
5.3.1 Construction.....	5-3
5.3.2 Operation	5-3
5.4 Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency.....	5-5
6 GREENHOUSE GAS IMPACT ANALYSIS	6-1
6.1 Thresholds Of Significance	6-1
6.2 GHG Emissions Quantification Methodology	6-2

6.2.1	Construction Emissions.....	6-2
6.2.2	Operational Emissions	6-2
6.3	GHG Emissions	6-3
6.4	Consistency With GHG Reduction Plans	6-10
6.4.1	CARB Scoping Plan	6-10
6.4.2	Sustainable Freight Plan and ACT Program	6-11
6.4.3	Southern California Association of Governments RTP/SCS	6-11
6.4.4	Menifee General Plan	6-12
7	REPORT PREPARERS AND REFERENCES.....	7-1
7.1	References.....	7-1

List of Tables

Table 2-1:	Project Trip Generation Rates	2-6
Table 2-2:	Construction Activity, Duration, and Typical Equipment.....	2-8
Table 3-1:	Renewable Sources of Electricity Production	3-2
Table 3-2:	Non-Renewable Sources of Electricity Production	3-3
Table 3-3:	United States Electricity Generation (2016 to 2022)	3-5
Table 3-4:	California Electricity Generation (2016 to 2022)	3-7
Table 3-5:	California Transportation Fuels by Vehicle Type (2022)	3-10
Table 4-1:	Global Warming Potential (GWP) of Common Greenhouse Gases (GHG)	4-3
Table 4-2:	2010 – 2021 Statewide GHG Emissions (Million MTCO ₂ e).....	4-7
Table 5-1:	Summary of Energy Quantification Methodologies	5-1
Table 6-1:	Summary of Emissions Quantification Methodologies	6-2
Table 6-2:	Project Construction GHG Emissions	6-4
Table 6-3:	Unmitigated Project Operational GHG Emissions	6-5
Table 6-4:	Mitigated Project Operational GHG Emissions	6-9

List of Figures

Figure 2-1	Aerial View of the Project Site	2-2
Figure 2-2:	Site Plan	2-4
Figure 2-3:	Truck Trip Distribution.....	2-7
Figure 3-1:	United States Energy Sources for Electricity Generation (2016 to 2022)	3-5
Figure 3-2:	California Energy Sources for Electricity Generation (2015 to 2021)	3-8

Appendices

- Appendix A: CalEEMod Emissions Outputs
- Appendix B: Fuel Consumption Spreadsheets

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	Full Phrase or Description
§	Section
°C	Degrees Celsius
°F	Degrees Fahrenheit
AB	Assembly Bill
ACC	Advanced Clean Cars
ACT	Advanced Clean Trucks
APN	Assessor Parcel Number
BAU	Business As Usual
BOE	Board of Equalization
Btu	British Thermal Unit
CalEEMod	California Emissions Estimator Model
Cal-EPA	California Environmental Protection Agency
CalGreen Code	California Green Building Standards Code
CARB	California Air Resources Board
CAFE	Corporate Average Fuel Economy
CAT	Climate Action Team
CBSC	California Building Standards Commission
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH ₄	Methane
CI	Carbon Intensity
CNRA	California Natural Resources Agency
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
EISA	Energy Independency and Security Act
GHG	Greenhouse Gas
GW	Gigawatt
GWh	Gigawatt-hours
GWP	Global Warming Potential
HFC	Hydrofluorocarbon
HHDT	Heavy Heavy-Duty Trucks
HQTA	High Quality Transit Area

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	Full Phrase or Description
IPCC	Intergovernmental Panel on Climate Change
kW	Kilowatt
kWh	Kilowatthour
LCFS	Low Carbon Fuel Standard
LDA	Light Duty Auto
LDT1 / LDT2	Light Duty Trucks
LEV	Low-Emissions Vehicle
LHDT	Light Heavy-Duty Truck
MHDT	Medium Heavy-Duty Truck
MPO	Metropolitan Planning Organization
MT	Metric Ton
MTCO _{2e}	Metric Ton of Carbon Dioxide Equivalent
MW	Megawatt
NHTSA	National Highway Safety Administration
N ₂ O	Nitrous Oxide
NMA	Neighborhood Mobility Area
NREL	National Renewable Energy Laboratory
PDA	Priority Development Area
PFC	Perfluorocarbon
PGA	Priority Growth Area
ppm	Parts Per Million
PRC	Public Resources Code
PSI	Pounds Per Square Inch
PV	Photovoltaic
Report	Energy and Greenhouse Gas Impact Analysis Report
RFS	Renewable Fuel Standards
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient Vehicles Rule
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	Full Phrase or Description
SF ₆	Sulfur Hexafluoride
SoCalGas	Southern California Gas Company
SOI	Sphere of Influence
TPA	Transit Priority Area
U.S.	United States
U.S. EIA	United State Energy Information Administration
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

This page intentionally left blank.

EXECUTIVE SUMMARY

This Energy and Greenhouse Gas Impact Analysis Report (Report) evaluates and documents the potential energy and greenhouse gas (GHG) impacts associated with the construction and operation of the proposed Pemcor Commercial / Industrial Business Park Project (proposed Project) located at 33521 Zeiders Road in the southern part of the City of Menifee, in Riverside County.

This Report is consistent with the guidance and recommendations contained in the South Coast Air Quality Management District's (SCAQMD) California Environmental Quality Act (CEQA) Air Quality Handbook, as amended and supplemented. This Report is intended to assist the CEQA Lead Agency (County of San Bernardino) with its review of potential project-related GHG and energy impacts in compliance with the State CEQA Statutes and Guidelines, particularly in respect to the energy and GHG issues identified in Appendix G of the State CEQA Guidelines.

S.1 PROPOSED PROJECT DESCRIPTION

Pemcor Investment Corporation is proposing to demolish an existing, single-family home and construct a new commercial/industrial business park development consisting of eleven single-story buildings at 33521 Zeiders Road in the southern portion of the City of Menifee. The project site is approximately 0.25 miles west of Interstate 215 (I-215) and approximately 0.5 miles south of Scott Road. The business park complex would be located on approximately 20.03 acres and be comprised of approximately 337,770 square feet of building space, with each building ranging from approximately 23,100 square feet to 37,840 square feet. The buildings would be massed into five primary groupings:

- Two of the groupings would be located on the on the eastern portion of the site, comprised of one building each, and front Zeiders Road.
- Two of the groupings would be located on the interior of the site, oriented in a west-east direction, and comprised of three buildings each.
- The final grouping would be located on the western portion of the site, oriented in a north-south orientation, comprised of three buildings, and located adjacent to Howard Way.

Site access would be provided via two (2) driveways along Zeiders Road. The northern driveway would be for automobiles only, while the southern driveway would be for both automobiles and trucks.

The proposed complex would feature a total of approximately 22 truck dock doors. Each building would feature two truck docks inset into the building and oriented toward the center of the site. Truck access would be provided along the site's southern driveway that ties into Zeiders Road. Onsite truck movements would occur along the interior of the site (i.e., main drive isle). Parking spaces for commuter vehicles (e.g., cars and pick-up trucks) would be present on all sides of the buildings, except for those facing the interior of the site (i.e., the same side truck docks would be located), and along the perimeter of the site.

The proposed Project would involve construction and operational activities that would generate emissions of regulated air pollutants from construction equipment, area sources, energy use and consumption, and mobile sources (including trucks). Construction activities are anticipated to last approximately 18 months and begin in early 2025. The proposed Project is a speculative development, meaning that no tenants have signed lease agreements for any of the buildings; however, end users are anticipated to provide a wide range of services ranging from industrial and manufacturing uses to service-commercial and office uses. Hours of operation for the complex are planned to be 6 AM to PM, daily.

S.2 POTENTIAL ENERGY IMPACTS

The proposed Project would result in electricity, gasoline, and diesel fuel consumption during construction activities, and electricity, natural gas, gasoline, diesel, and natural gas consumption during operation. Energy consumption during construction would not be wasteful, unnecessary, or inefficient since these energy demands are necessary components of development activities. The proposed Project would be subject to 2022 CalGreen Code energy efficiency standards, which would help reduce the project's operation energy consumption. The proposed Project would not conflict with or obstruct a state or local plan adopted for the purposes of reducing energy consumption. The proposed Project would not result in a significant energy impact.

S.3 POTENTIAL GHG EMISSION IMPACTS

The proposed Project's GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod). The project's GHG emissions were found to exceed the SCAQMD's SCAQMD GHG interim threshold of 3,000 MTCO₂e per year after the incorporation of Recommended Mitigation Measures GHG-1, GHG-2, GHG-3, and GHG-4 (See Section S.5 below). The proposed Project would result in a significant and unavoidable impact.

S.4 CONSISTENCY WITH APPLICABLE PLANS

The proposed Project would not result in population or employment growth or associated emissions that conflict with the SCAQMD's 2022 Air Quality Management Plan; California Air Resources Board (CARB) 2022 Climate Change Scoping Plan; CARB Sustainable Freight Plan, CARB Advanced Clean Trucks Program; or Connect SoCal, the Southern California Association of Government's (SCAG) Regional Transportation Plan/Sustainable Communities Strategy for 2020-2045. These plans generally call on state, regional, and local government entities to establish state, regional, community wide, and municipal programs to promote energy efficiency, reduce vehicle trips and/or reduce air pollutant emissions, including GHG emissions. The proposed Project would not interfere with any state, regional, or local planning processes or the implementation of any state, regional, or local policies intended to promote energy efficiency and reduce vehicle trips and/or emissions.

S.5 RECOMMENDED MITIGATION MEASURES

MIG recommends the City require the incorporation of the following mitigation measure into the project's CEQA environmental documentation to reduce operational GHG emissions associated with the proposed Project that would have the potential to exceed applicable SCAQMD regional criteria air pollutant thresholds.

Recommended Mitigation Measure GHG-1: Reduce Vehicle Trips through Transportation Demand Management. To reduce potential GHG emissions from mobile sources, the proposed Project would comply with the following Transportation Demand Management (TDM) measures to reduce mobile source trips consistent with the recommendations in the Project's TDM Assessment (Ganddini 2025):

- Implement Commute Trip Reduction Program: This measure will implement a voluntary commute trip reduction (CTR) program with employers. CTR programs discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions.

- Implement Commute Trip Reduction Marketing: This measure will implement a marketing strategy to promote the project site employer's CTR program. Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond driving such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions.
- Provide Ridesharing Program: This measure will implement a ridesharing program and establish a permanent transportation management association with funding requirements for employers. Ridesharing encourages carpooled vehicle trips in place of single-occupied vehicle trips, thereby reducing the number of trips, VMT, and GHG emissions.
- Implement Subsidized or Discounted Transit Program: This measure will provide subsidized or discounted, or free transit passes for employees and/or residents. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving, increasing the total number of transit trips and decreasing vehicle trips. This decrease in vehicle trips results in reduced VMT and thus a reduction in GHG emissions.
- Provide End-of-Trip Bicycle Facilities: This measure will install and maintain end-of-trip facilities for employee use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers. The provision and maintenance of secure bike parking and related facilities encourages commuting by bicycle, thereby reducing VMT and GHG emissions.
- Provide Employer-Sponsored Vanpool: This measure will implement an employer-sponsored vanpool service. Vanpooling is a flexible form of public transportation that provides groups of 5 to 15 people with a cost-effective and convenient rideshare option for commuting. The mode shift from long-distance, single-occupied vehicles to shared vehicles reduces overall commute VMT, thereby reducing GHG emissions.
- Provide Electric Vehicle Charging Infrastructure: Install onsite electric vehicle chargers in an amount beyond what is required by the 2019 California Green Building Standards (CALGreen) at buildings with designated parking areas (e.g., commercial, educational, retail, multifamily). This will enable drivers of PHEVs to drive a larger share of miles in electric mode (eVMT), as opposed to gasoline-powered mode, thereby displacing GHG emissions from gasoline consumption with a lesser amount of indirect emissions from electricity. Most PHEVs owners charge their vehicles at home overnight. When making trips during the day, the vehicle will switch to gasoline mode if/when it reaches its maximum all-electric range.

Recommended Mitigation Measure GHG-2: Provide CALGreen Tier 2 EV Parking. To reduce potential GHG emissions from mobile sources, the proposed Project shall include EV parking spaces and infrastructure consistent with the Tier 2 provisions in the 2022 CALGreen Code, Appendix A5: Nonresidential Voluntary Measures, Section A5.106.5.1, Section A5.601.3.4(1)(a), and Section A5.601.3.4(1)(b). These provisions require the following:

- Provide a minimum of 50% of the parking capacity as designated parking for any combination of zero-emitting, high-efficiency, and carpool/vanpool vehicles. Comply with the provisions in CALGreen Code Section A5.106.5.1.4 for marking parking stalls as parking for clean air vehicles.
- EV charging that meets one of the two following provisions:

- Consistent with CALGreen Table A5.106.5.3.3, 45% of parking spaces are required to be EV capable spaces (with infrastructure capable of supporting EV charging), and 33% of EV capable spaces are required to have EV charging stations installed; or
- Consistent with CALGreen Table A5.106.5.3.4, the project is required to meet a power level determined by the following equation: Total required power (kVA) = Number of Parking Spaces x 0.45 x 6.6¹

Under either option, at least one Level 2 EV charging station would be required.

Recommended Mitigation Measure GHG-3: All-Electric Operation. To reduce potential GHG emissions from energy sources, the City shall require all building energy systems, equipment, and appliances be powered by electricity unless another form of energy is required, and a suitable all-electric alternative is technologically or economically infeasible for the tenant or the equipment is not commercially available. The proposed structures shall be dual-plumbed with electricity and natural gas, and tenants shall be able to use natural gas should they be able to demonstrate an all-electric alternative is unavailable or infeasible.

Recommended Mitigation Measure GHG-4: Provide PV Solar. To reduce GHG emissions associated with building energy, City shall require that the proposed buildings include PV solar panels on a minimum of 15% of the total roof area.

¹ A maximum of 75% of kVA can be allocated to EV capable spaces.

1 INTRODUCTION

Pemcor Investment Group, (the Applicant) has applied to the City of Menifee for a Land Use and Development Application for its proposed Pemcor Commercial / Industrial Business Park Project (proposed Project). The proposed Project would be located approximately 0.25 miles west of I-215 and 0.5 miles south of Scott Road, in the southern portion of the city. The project would involve developing 11 buildings that would collectively comprise approximately 337,770 square feet. Each building would have two truck dock doors (total of 22 truck doors for the site) that would be oriented toward the center of the site.

MIG, Inc. (MIG) has prepared this Energy and Greenhouse Gas Analysis Report (Report) to evaluate the potential construction- and operations-related energy and greenhouse gas (GHG) impacts of the proposed Project. MIG has prepared this Report using project-specific information contained in the Site Plan for the proposed Project, as well as the Traffic Impact Analysis prepared by Ganddini (Ganddini, 2024). Where necessary, MIG has supplemented available information with standardized sources of information, such as model assumptions pertaining to construction equipment activity levels. In general, this Report evaluates the potential “worst-case” conditions associated with the proposed Project’s construction and operational emissions levels to ensure a conservative (i.e., likely to overestimate) assessment of potential energy and GHG impacts are presented.

This Report is intended for use by the Lead Agency to assess the potential energy and GHG impacts of the proposed Project in compliance with the California Environmental Quality Act (CEQA; PRC §21000 et seq.) and the State CEQA Guidelines (14 CCR §15000 et seq.), particularly in respect to energy and GHG issues identified in Appendix G of the State CEQA Guidelines.

1.1 REPORT ORGANIZATION

This Report is organized as follows:

- **Chapter 1, Introduction**, explains the contents of this Report and its intended use.
- **Chapter 2, Proposed Project Description**, provides an overview of the construction and operational activities associated with the proposed Project.
- **Chapter 3, Energy Setting and Regulatory Framework**, provides pertinent background information on energy, describes the existing energy setting of the proposed Project, and provides information on the federal, state, and local regulations that govern the proposed Project’s energy setting and potential energy impacts.
- **Chapter 4, GHG Setting and Regulatory Framework**, provides pertinent background information on GHG and climate change, describes the existing GHG setting of the proposed Project, and provides information on the federal, state, and local regulations that govern the proposed Project’s GHG setting and potential GHG impacts.
- **Chapter 5, Energy Impact Assessment**, identifies the potential construction and operational energy impacts of the proposed Project and evaluates these effects in accordance with Appendix G of the State CEQA Guidelines.
- **Chapter 6, GHG Impact Assessment**, identifies the potential construction and operational GHG impacts of the proposed Project and evaluates these effects in accordance with Appendix G of the State CEQA Guidelines.

- **Chapter 7, Report Preparers and References**, list the individuals involved, and the references used, in the preparation of this Report.

2 PROPOSED PROJECT DESCRIPTION

Pemcor Investment Corporation (the Applicant) is proposing to develop the Pemcor Commercial / Industrial Business Park Project (proposed Project). The proposed Project would consist of demolishing an existing single-family residence and constructing a new 11 unit/building business park, totaling approximately 337,770 square feet of gross building space.

2.1 PROJECT LOCATION

The proposed Project would be located at 33521 Zeiders Road in the southern portion of the City of Menifee, in Riverside County. The project is a primarily undeveloped, approximately 20.03-acre (gross), rectangular-shaped parcel of land (Assessor's Parcel Number (APN) 384-150-001). The site is bound by rural residential land uses on the north, south, and west, and light industrial land uses to the east. Zeiders Road and Howard Way run along the eastern and western sides of the site, respectively (see Figure 2-1 Aerial View of the Project Site).

The project site is, at closest, approximately 0.25 miles west of Interstate 215 (I-215) and 0.5 miles south of Scott Road.²

2.1.1 SITE LAND USE AND ZONING

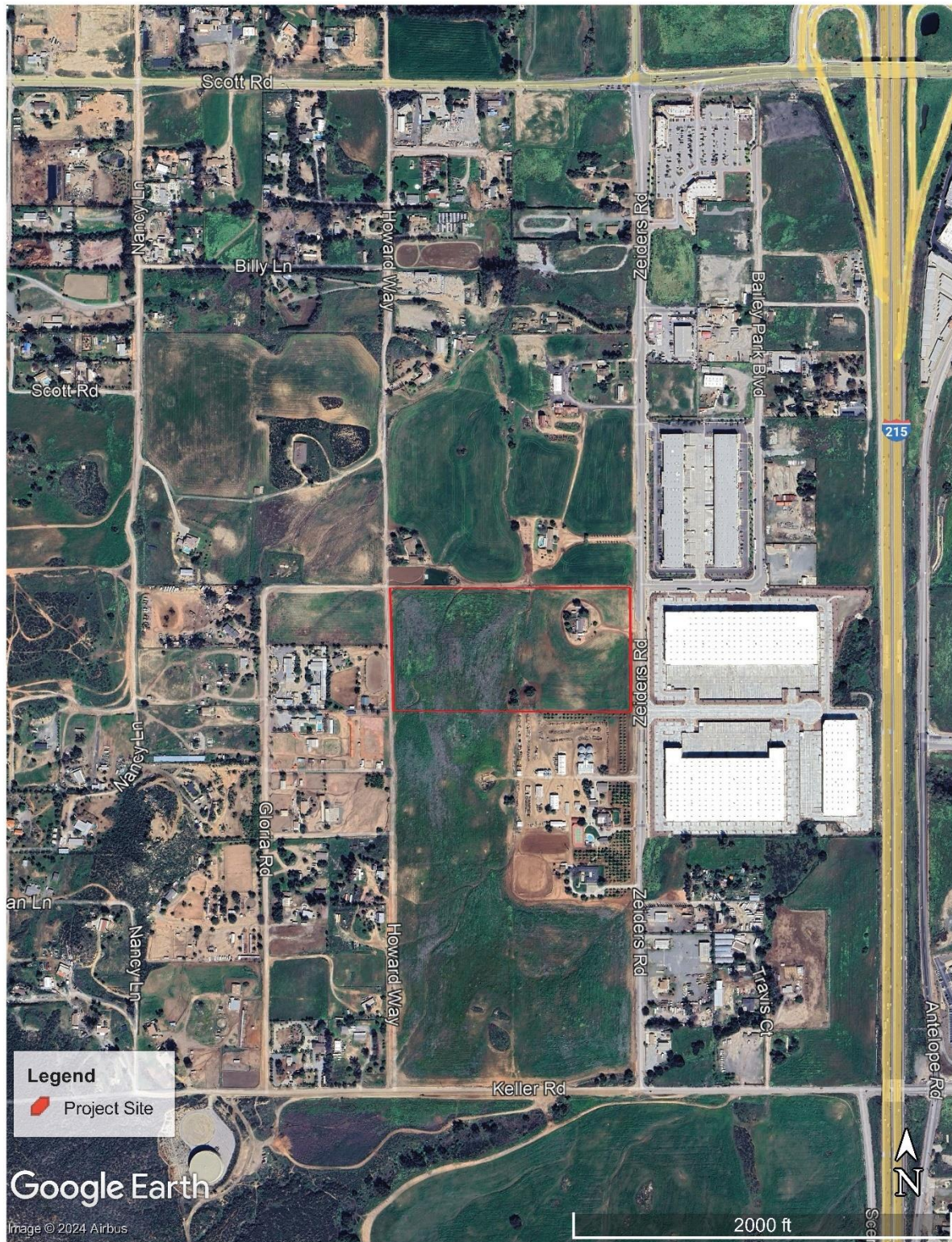
The site is designated by the City's General Plan and zoned by the City's zoning code as Economic Development Corridor – Southern Gateway (City of Menifee, 2013a and 2013b).

2.1.2 SURROUNDING LAND USES

The proposed Project site is surrounded by rural residences to the north, west, and south, and light industrial land uses to the west.

² Unless otherwise indicated, reported distances are measured between the edge of the listed feature (e.g., road or rail right-of-way, land use property boundary, etc.) and the Project's closest property line.

Figure 2-1 Aerial View of the Project Site



Source: MIG 2024

2.2 EXISTING SITE DESCRIPTION AND OPERATIONS

The project site is currently developed with a single-family residence and associated structures (e.g., garage). The majority of the site is comprised of vacant land.

2.3 PROPOSED SITE DEVELOPMENT AND OPERATIONS

The proposed Project would involve the development of a new, approximately 337,770 square feet business park, which would be split across 11 buildings. The entire 20.03 acre would be graded; the portions of the site not developed with the business park would either be hardscaped (e.g., parking or sidewalks) or landscaped. The proposed Project site plan is shown in Figure 2-2.

2.3.1 SITE LAYOUT AND BUILDING DESCRIPTION

The rectangular project site would feature 11 buildings under proposed conditions, with the buildings being massed into five primary groupings.

- Two of the groupings would be located on the on the eastern portion of the site, fronting Zeiders Road, and be comprised of one building each.
- Two of the groupings would be located on the interior of the site, be oriented in an east-west direction, and be comprised of three buildings each.
- The final grouping would be located on the western portion of the site, oriented in a north-south direction, comprised of three buildings, and be located adjacent to Howard Way.

Each building would be between approximately 23,100 square feet to 37,840 square feet, and feature two (2) truck dock doors that would be oriented toward the center of the site (a total of 22 truck docks at the site). Building heights would range between 38 and 40 feet above ground level.

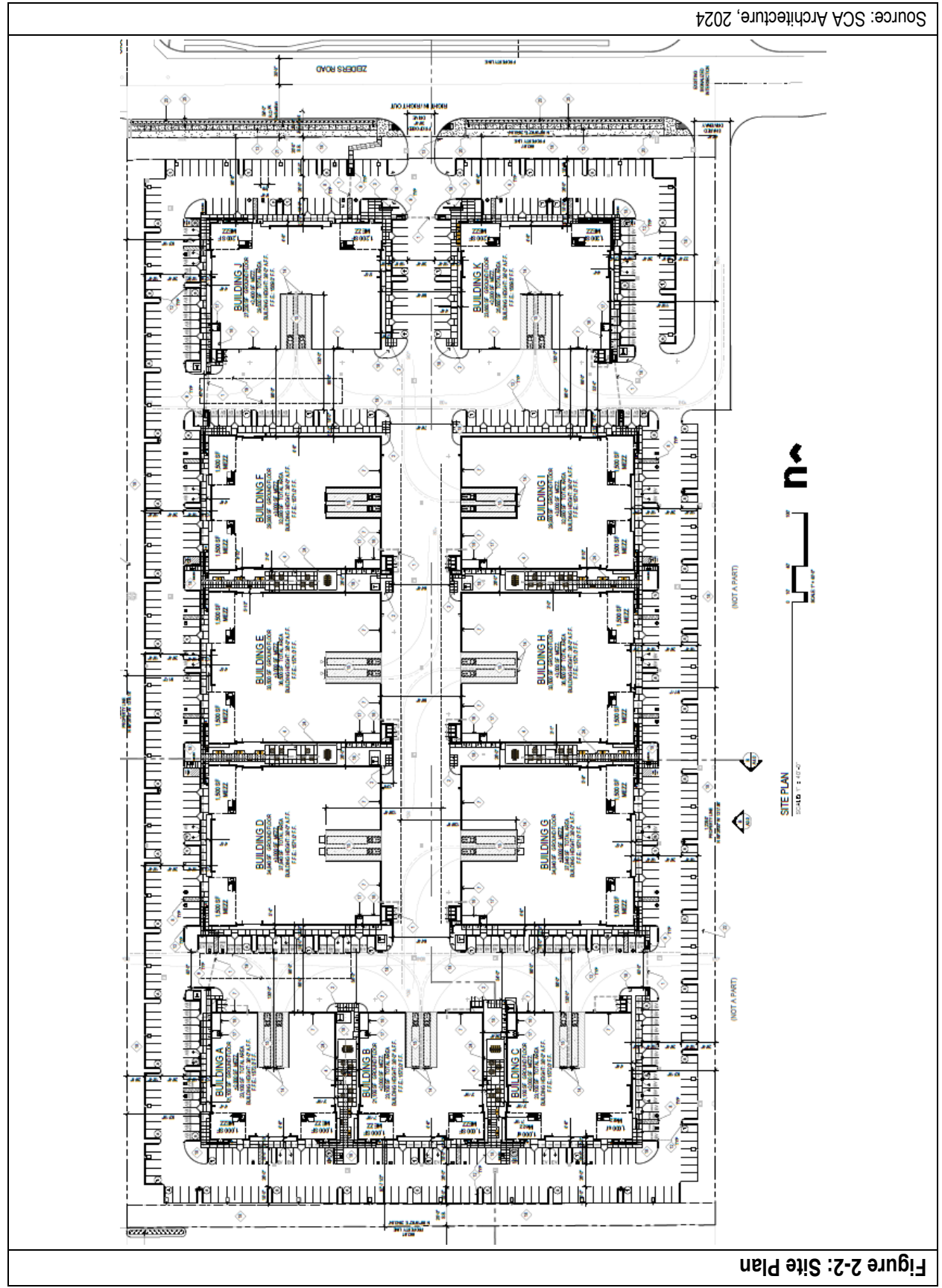
The buildings would be set back approximately 91 feet from the site's northern property line, approximately 97.5 feet from the western property line, approximately 93 feet from the southern property line, and approximately 96.5' from the eastern property line.

2.3.2 SITE ACCESS AND PARKING

Access to the site would be provided via two driveways on Zeiders Road. The southern driveway would provide truck and passenger car access to the site, while the northern/central driveway would only provide access to passenger vehicles. Once on site, passengers vehicles / trucks would navigate to their destination building. Due to site layout, trucks would traveling from the southern driveway, through the drive isle that runs through the middle of the site, to their building destination.

Approximately 667 passenger vehicle parking spaces would be provided on site. The site plan identifies these parking spaces as being located adjacent to the sides of the building that do not include truck docks, as well as on the perimeter of the site.

A total of 22 truck docks would be provided by the proposed business park complex. Each building would feature two dock doors, which would be oriented toward the center of the site. The site does not include a trailer parking area



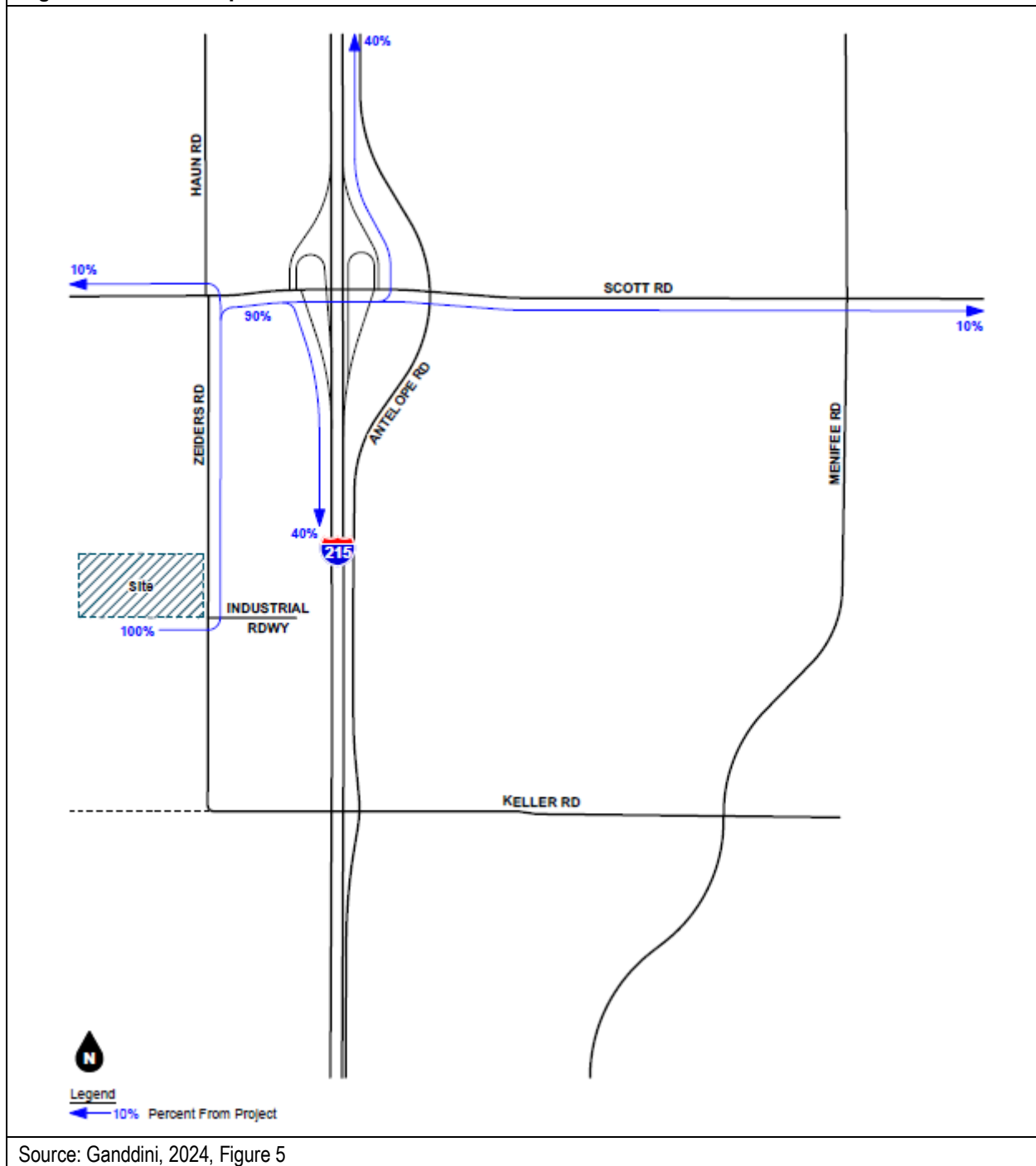
2.3.3 PROJECT OPERATIONS

The proposed Project is considered a speculative development, because tenants/end users have not been identified. Although project-specific details are not known, the Applicant anticipates that tenants of the business park would provide a wide range of services ranging from industrial and manufacturing uses to service-commercial and office uses, and employ approximately 553 individuals (PEMCOR, 2024). These types of uses generally generate emissions from sources such as on- and off-site vehicle trips, on-site truck maneuvering, loading, and unloading activities, on-site parking, and other on-site operations. With regards to potential project operations that could generate emission, this Report assumes:

- **Hours of Operation:** The project would operate from approximately 6 AM to 11 PM, daily (PEMCOR Investment Group, 2024).
- **Vehicle Trip Generation:** The proposed Project's trip generation potential, as provided in the Traffic Scoping Agreement prepared for the project and modified as necessary for the purposes of this Report, is summarized in Table 2-1 (Ganddini Group, 2024).³ As shown in Table 2-1, the proposed Project would result in 911 total vehicle trips per day, including 757 passenger vehicle trips and 154 truck trips. The closest highway / freeway to the project site is I-215, which can be accessed via Scott Road on- and off-ramps located north of the site. Consistent with the truck trip distribution identified in the Traffic Scoping Agreement, 100% of the truck trips would travel north on Zeiders Road, 10% would travel on Scott Road west of the site, and 90% would travel on Scott Road east of the site (see Figure 2-3 for truck trip distribution; Ganddini 2024). All trucks would enter and exit via the southern driveway.

³ The Traffic Scoping Agreement only includes a breakdown of the number of trucks for the Industrial Park Land Use; does not include a breakdown of trucks for the Business Park Land Use. Therefore, CalEEMod's default fleet mix was used to estimate the number of 2-, 3-, and 4-axle trucks that could be generated by the proposed Project.

Table 2-1: Project Trip Generation Rates				
Vehicle Type	AM Peak Hour	PM Peak Hour	Average Daily Trips	
			Number	Percent
Industrial Park (IP)				
Passenger Cars	81	81	757	83.1%
Truck Trips				
2-axle	1	1	12	1.3%
3-axle	1	1	11	1.2%
4-axle	9	10	131	14.4%
Subtotal ^(A)	11	12	154	16.9%
IP Subtotal	92	93	911	100%
Business Park (BP)				
Passenger Cars	83	83	780	92.9%
Truck Trips				
2-axle	3	3	34	4.0%
3-axle	1	1	12	1.5%
4-axle	1	1	14	1.6%
Subtotal ^(A)	5	5	60	7.1%
BP Subtotal	88	88	840	100.0%
Proposed Project				
Passenger Cars	164	164	1,537	87.8%
Truck Trips				
2-axle	4	4	46	2.6%
3-axle	2	2	23	1.3%
4-axle	10	11	145	8.3%
Subtotal ^(A)	16	17	214	12.2%
Total	180	181	1,751	100.0%
Source: Ganddini, 2024, Tables 1 and 2; EMFAC2021				
(A) Totals may not equal due to rounding.				

Figure 2-3: Truck Trip Distribution

Source: Ganddini, 2024, Figure 5

2.4 PROJECT CONSTRUCTION

Construction of the proposed Project is anticipated to begin in early 2025 and take approximately 18 months to complete. The development of the approximately 20.03-acre site and the construction of the approximately 337,770 square foot business park complex would require (minor) demolition, site preparation, grading, building construction, paving, and architectural coating phases/activities. The project

is anticipated to require 2,000 cubic yards of soil off haul. The proposed Project is anticipated to require varying types of equipment throughout the different construction phases including, but not limited to, bulldozers, backhoes, loaders, graders, cranes and forklifts. Table 2-2 summarizes the proposed Project's construction phasing and the typical pieces of heavy-duty, off-road construction equipment that would be required during each phase.

Table 2-2: Construction Activity, Duration, and Typical Equipment		
Construction Activity	Duration (Days)^(A)	Typical Equipment Used^(B)
Demolition	20	Saws, Excavator, Dozer
Site Preparation	10	Dozer, Tractor/Loader/Backhoe
Grading	35	Excavator, Scraper, Grader, Dozer, Backhoe
Building Construction	282	Crane, Generator, Forklift, Backhoe, Welder
Paving	20	Paver, Paving Equipment, Roller
Architectural Coating	20	Air Compressor
Source: See Appendix A.		
(A) Days refers to total active workdays in the construction phase, not calendar days. There would not be any overlapping days between construction phases.		
(B) The typical equipment list does not reflect all equipment that would be used during the construction phase. Not all equipment would operate eight hours per day each workday.		

3 ENERGY SETTING AND REGULATORY FRAMEWORK

This chapter provides information on the environmental and regulatory energy setting of the proposed Project. Information on existing energy conditions, and federal, state, and local energy standards and goals was obtained from the United States Environmental Protection Agency (U.S. EPA), United States Energy Information Administration (U.S. EIA) the California Energy Commission (CEC), Southern California Edison (SCE), and Southern California Gas (SoCal Gas).

3.1 ENVIRONMENTAL SETTING

3.1.1 DEFINING ENERGY: SOURCES, UNITS, AND MEANS OF PRODUCTION

For the purposes of this Report, energy resources are categorized into three areas: electricity, natural gas, and fuels used for transportation.

3.1.1.1 Electricity

Electricity is the flow of electrical power or charge (i.e., the movement of electrons between atoms). It is produced by converting sources of primary energy such as coal, natural gas, nuclear, hydropower, wind, and solar, into electrical power through various means.

Generators and solar photovoltaic (PV) cells are two of the primary pieces of equipment used to produce and supply electricity to the grid. The following describes the processes through which electricity is generated by these pieces of equipment.

- **Generators.** Turbine generators convert mechanical or chemical energy into electricity. At its simplest form, an electrical generator is an electromagnet, moving wire near a magnet to direct the flow of electricity. Turbine generators do this by using a moving fluid (e.g., water, steam, combustion gases, or air) to push rotator blades that are attached to a generator. The rotation of magnets and wires within the generator produce an electromagnetic current, directing electrical flow.
- **Solar Photovoltaic Cells.** Solar photovoltaic (PV) cells convert solar energy directly into electricity. They are made up of semiconductor material that absorb sunlight and generate an electrical current. This current is captured and transferred to wires so that it can be utilized at a different location.

Electricity production can be grouped into two main categories; electricity that is generated from renewable sources (e.g., solar and wind) and electricity that is generated from non-renewable sources (e.g., fossil fuel combustion). Table 3-1 and Table 3-2 summarize the primary renewable and non-renewable sources of electricity, respectively, as well as how the energy from the various sources is converted into electricity.

Table 3-1: Renewable Sources of Electricity Production	
Source	Electricity Production Process
Wind	Wind can be converted to electricity through the use of a wind turbine (historically referred to as "windmills"). Electricity from this source is produced when wind causes the turbine's blades to turn. The amount of electricity generated by a wind turbine is dependent on a number of factors, but is primarily related to how much wind energy can be collected at a given time. Wind turbines with longer blades have the capacity to generate more electricity than those with smaller blades, because they can collect more of the wind's energy. A small wind turbine could generate a similar output as a larger one, but the smaller one would need to be subject to higher wind speeds. Wind power plants, or wind farms, are composed of multiple wind turbines spread out over a large area.
Solar	The sun's energy can be converted into electricity by using solar PV cells, which produce electricity when photons from the solar energy are absorbed by the semiconductor material in the PV cell. Electrons are dislodged from the semiconductor material and absorbed by electrical conductors, which are connected in an electrical circuit. Electricity flows through the electrical circuit to an external device, such as a battery or an inverter. ^(A) Solar energy production can be increased with additional PV cells. PV cells can be connected in solar panels, and groups of solar panels can be connected into a solar array. One PV cell may power small devices such as calculators, small solar arrays may power individual residential or commercial buildings, and large arrays may produce power for utilities.
Hydroelectric	Hydroelectric energy is produced by using a naturally-flowing water source (e.g., from a river or dam) to spin the blades of a turbine, which is typically located on or adjacent to the body of water. Water is piped from a location upstream of the facility, through the turbine, and released back into the environment on the downstream side of the facility. The amount of electricity produced by a hydroelectric generator can be regulated by controlling the amount of water flowing through the turbine at a given time (e.g., greater water flow would produce more electricity).
Geothermal	Geothermal energy is produced by utilizing underground high-temperature hydrothermal resources to create steam (or superheat evaporate and other working fluid) that turns a turbine. Hot water is piped in one side of the system, used to turn the turbine, then piped back to a cooling tower before being piped underground. These power plants can pipe steam or hot water from wells that reach up to two miles into the earth.

Table 3-2: Non-Renewable Sources of Electricity Production	
Source	Electricity Production Process
Fossil Fuels	Combusting fossil fuels releases energy that can be harnessed and turned into electricity. The change in air pressure as a result of burning the material can be used to create a mechanical process that rotates a generator (e.g., using the hot air from the combusted material to move rotator blades within a generator or pistons within an internal combustion engine). Fossil fuels are hydrocarbons formed from plant and animal remains that were placed under heat and pressure from layers of sand, silt, and rock. Fossil fuels can include coal, crude oil, and natural gas. Petroleum products such as gasoline and diesel are produced from refining fossil fuels.
Nuclear	Nuclear reactors convert energy to electricity by using the heat from a nuclear reactor to evaporate water (i.e., producing steam) that rotates a turbine. Although nuclear energy is not renewable, it is often considered “green” and considered alongside renewable sources because it is a carbon-free source of electricity.
Source: U.S. EIA 2022a	
(A) An inverter is a device that converts the type of electricity that is produced by PV cells (direct current, or DC, electricity) to the type of electricity that is used in appliances or in an electrical grid (alternating current, or AC electricity).	

Electricity production relies on different energy sources and technologies. A combination of the renewable and nonrenewable energy sources described above are used to generate electricity.

Electricity is measured in watts, a unit of power. Watts may be described in various quantities using kilo-, mega-, and giga-, prefixes, which correspond to one-thousand, one-million, and one-billion of something, respectively. For context, these prefixes are typically used in the following contexts when describing electricity production and consumption.

- **Watts** are used as a measurement for small devices. For example, the solar powered calculator may use 1 Watt. A lightbulb may use 50 Watts.
- **Kilowatts (kW)**, or 1,000 Watts, are typically used to describe large appliance and building-scale electricity consumption. For example, the average Californian household consumed 6,174 kWh of electricity in 2019 (CEC 2021a).
- **Megawatts (MW)**, are 1,000 kW, or one million Watts. Megawatts may be used when discussing utility systems.
- **Gigawatts (GW)**, are 1,000 MW, one million kW, or one billion watts. Gigawatts may be used when discussing statewide electricity generation. For example, in 2021, California generated 194,127 GWh of electricity in-state (U.S. EIA 2022b).

Electricity use over time can be measured in watt-hours (Wh), where, for example, one kWh is the equivalent of one kW generated or consumed over the course of one hour. For example, if a 50 W lightbulb was on for one hour it would consume 5 Wh (or 0.05 kWh) of electricity. If it was on for 100 hours, it would consume 5 kWh of electricity.

3.1.1.2 Natural Gas

Natural gas is a fossil fuel-based energy source that is typically found between layers of rock or with deposits of crude oil. Natural gas can be extracted by drilling in wells or fracking. After extraction, natural gas is sent to a processing facility and then to storage or to natural gas companies.

Biomethane, also known as renewable natural gas, can be used as a substitute for fossil natural gas. Biomethane is a gas formed from the decomposition of organic matter, composed primarily of methane and carbon dioxide. It can be produced from solid waste landfills, wastewater treatment plants, food waste, organic waste, and livestock farms. Biomethane is then treated to remove contaminants and gases such as carbon dioxide until the methane content is greater than 90% (U.S. EPA 2022a).

Natural gas can be measured in units such as therms or British thermal units (Btu), which are quantities of heat, or cubic feet, which is a volume. The U.S. EIA defines a Btu as the quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit) (U.S. EIA 2023a). One therm is the equivalent of 100,000 Btu. Since heat quantity and volume cannot be converted directly, there is not one conversion rate between therms and cubic feet. However, the units can be converted if the heat content per volume is known. The average heat content of natural gas in 2020 was approximately 1,037 Btu per cubic foot (U.S. EIA 2021).

3.1.1.3 Fuels Used for Transportation

Fuels used for transportation may include diesel, gasoline, natural gas, electricity, and hydrogen. Diesel, gasoline, and natural gas fuels have traditionally been refined from crude oil. Combusting these fuel sources in an engine releases energy that can be transferred into making an object move (e.g., rotating a vehicle's driveshaft or a boat's propeller). Diesel, which can also be biomass based,⁴ is typically used in larger pieces of equipment, such as trucks, trains boats, buses, farm equipment, and construction equipment. Gasoline (which may be blended with other liquids, such as ethanol), electricity, and hydrogen fuel cells⁵ are primarily used to power passenger vehicles.

3.1.2 HISTORICAL AND CURRENT ENERGY PRODUCTION AND CONSUMPTION HABITS

3.1.2.1 National

Total U.S. energy consumption has increased in recent decades; however, per capita energy consumption has generally decreased since the year 2000. This is due to factors such as greater energy efficiency in appliances, vehicles, and utility scale electricity generation and a reduction in energy-intensive manufacturing (U.S. EIA 2022c). The following describes historical energy production and consumption trends in the U.S.

Electricity

The mix of energy sources for U.S. electricity generation has shifted in recent decades, but has primarily consisted of electricity generated from natural gas, coal, nuclear, hydroelectric, wind, and solar energy sources. Table 3-3 and Figure 3-1 depict the overall quantity and make-up of electricity of electricity production in the U.S. over the last seven years.

⁴ Biodiesel and renewable diesel are both produced from non-petroleum sources such as vegetable oil and animal fat. Biodiesel is consumed after it is blended with petroleum diesel. While renewable diesel may also be blended with petroleum diesel, renewable diesel can be transported and consumed directly without needing to be blended with petroleum.

⁵ Hydrogen fuel cells can produce electricity by combining hydrogen and oxygen atoms.

Table 3-3: United States Electricity Generation (2016 to 2022)

Energy Source	Electricity Produced Per Calendar Year (Million GWh)						
	2016	2017	2018	2019	2020	2021	2022
Natural Gas	1,379	1,298	1,472	1,589	1,627	1,579	1,687
Coal	1,239	1,206	1,149	965	773	898	832
Nuclear	806	805	807	809	790	778	772
Hydroelectric	268	300	293	288	285	252	255
Wind	227	254	273	296	338	378	434
Solar	55	77	93	107	131	164	205
Other ^(A)	104	95	94	77	66	59	46
Total Electricity	4,078	4,035	4,181	4,131	4,010	4,108	4,231
Fossil Fuels ^(B)	2,618	2,504	2,621	2,553	2,400	2,477	2,519
Non-Hydroelectric Renewables ^(C)	282	332	366	403	469	543	639
Total Carbon Free Electricity ^(D)	1,355	1,437	1,466	1,500	1,544	1,572	1,666

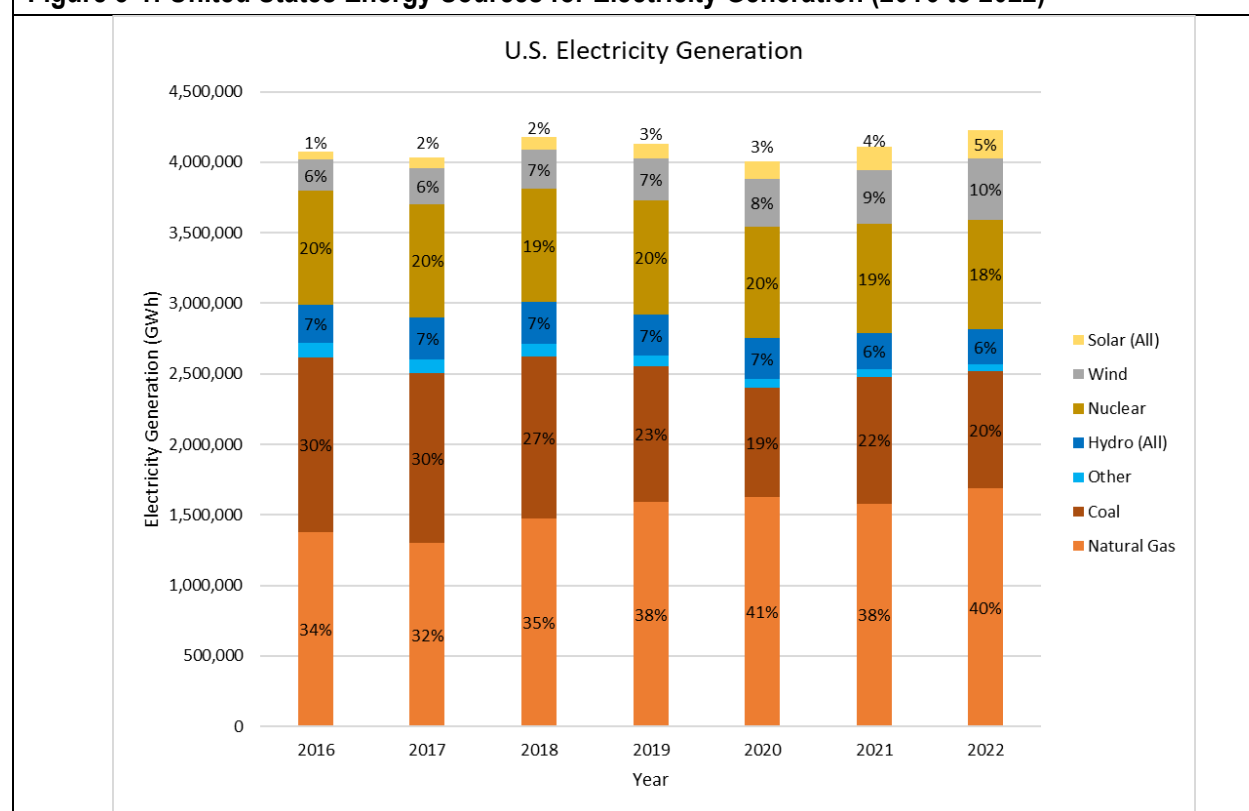
Sources: U.S. EIA 2023b and U.S. EIA 2023c

(A) "Other" sources include electricity production from petroleum coke and liquids, other gases, geothermal, and biomass.

(B) Fossil fuels include natural gas and coal.

(C) Non-hydroelectric renewables include wind and solar.

(D) Carbon-free energy sources consist of nuclear, hydroelectric, and renewable fuels.

Figure 3-1: United States Energy Sources for Electricity Generation (2016 to 2022)

Source: U.S. EIA 2023b and U.S. EIA 2023c

Note: The percentages for "Other" sources are not depicted in the figure, but generally include electricity production from petroleum coke and liquids, other gases, geothermal, and biomass. Annual values for the "Other" energy sources between 2016 and 2022 ranged between 3 percent in 2016 to 1 percent in 2022.

As shown in Table 3-3 and Figure 3-1, electricity production had some variability between 2016 and 2022, but mainly fluctuated between 4,000 and 4,200 million GWh of production on an annual basis.

Electricity production from fossil fuels (natural gas and coal), while remaining the predominant source of energy for electricity, decreased from a combined composition of approximately 64% in 2016 to approximately 60% in 2022. It should also be noted that there was a large shift away from coal and toward natural gas over this timeframe. Whereas the total contribution from coal and natural gas to electricity production during 2015 was approximately equal at 33%, during 2022, this changed to a contribution of 40% and 20% for natural gas and coal, respectively; a 20% difference.

Nuclear power plants were the second largest generator of electricity nation-wide, while electricity from renewable sources (e.g., solar, wind, hydroelectric) comprised less than a quarter of all electricity production. The overall electricity contribution from renewable sources, and in particular wind energy, approximately doubled over the 2016 to 2022 timeframe.

Natural Gas

Natural gas consumption nationwide has increased in recent decades. In 1990, the U.S. consumed 198 trillion therms of natural gas, which increased to approximately 335 trillion therms in 2022 (U.S. EIA 2012 and 2023d).

Transportation Fuels

Petroleum products (e.g., gasoline and diesel) have historically been the predominant form of energy used within the transportation sector. Annual daily consumption of gasoline in the transportation sector increased from approximately 85.7 billion gallons per year in 1970 to approximately 129.3 billion gallons per year in 2021, an approximately 51% increase (U.S. EIA 2023e). Gasoline consumption has fluctuated slightly since 2007 (i.e., increasing and decreasing) but has generally remained at or around 135 billion gallons per year, deviating only from the trend at the start of the COVID-19 pandemic in 2020. The use of diesel fuel increased at a substantially faster rate across the 1970 to 2022 timeframe, from approximately 11.3 billion gallons of consumption in 1970 to approximately 46.5 billion gallons in 2022, an approximately 312% increase (U.S. EIA 2023e). Unlike gasoline consumption, which is still slightly down from pre-COVID-19 levels, diesel consumption has generally remained constant. Although petroleum productions are the primary forms of energy used within the transportation sector, other fuels are used to lesser extents, including jet fuel (also petroleum), natural gas, biofuels, and other sources (e.g., fuel oil, lubricants, propane, and electricity).

In 2022, petroleum products (gasoline, diesel, and jet fuel) accounted for approximately 90% of energy consumption in the transportation sector nationwide (U.S. EIA 2022d). Gasoline is currently the main transportation fuel used in the U.S., accounting for approximately 54% of energy consumption in the transportation sector, and is followed by diesel at 22% and jet fuel at 12% (U.S. EIA 2022e). Electricity accounted for less than one percent energy consumption in the U.S. transportation sector in 2021 (U.S. EIA 2022e).

3.1.2.2 State

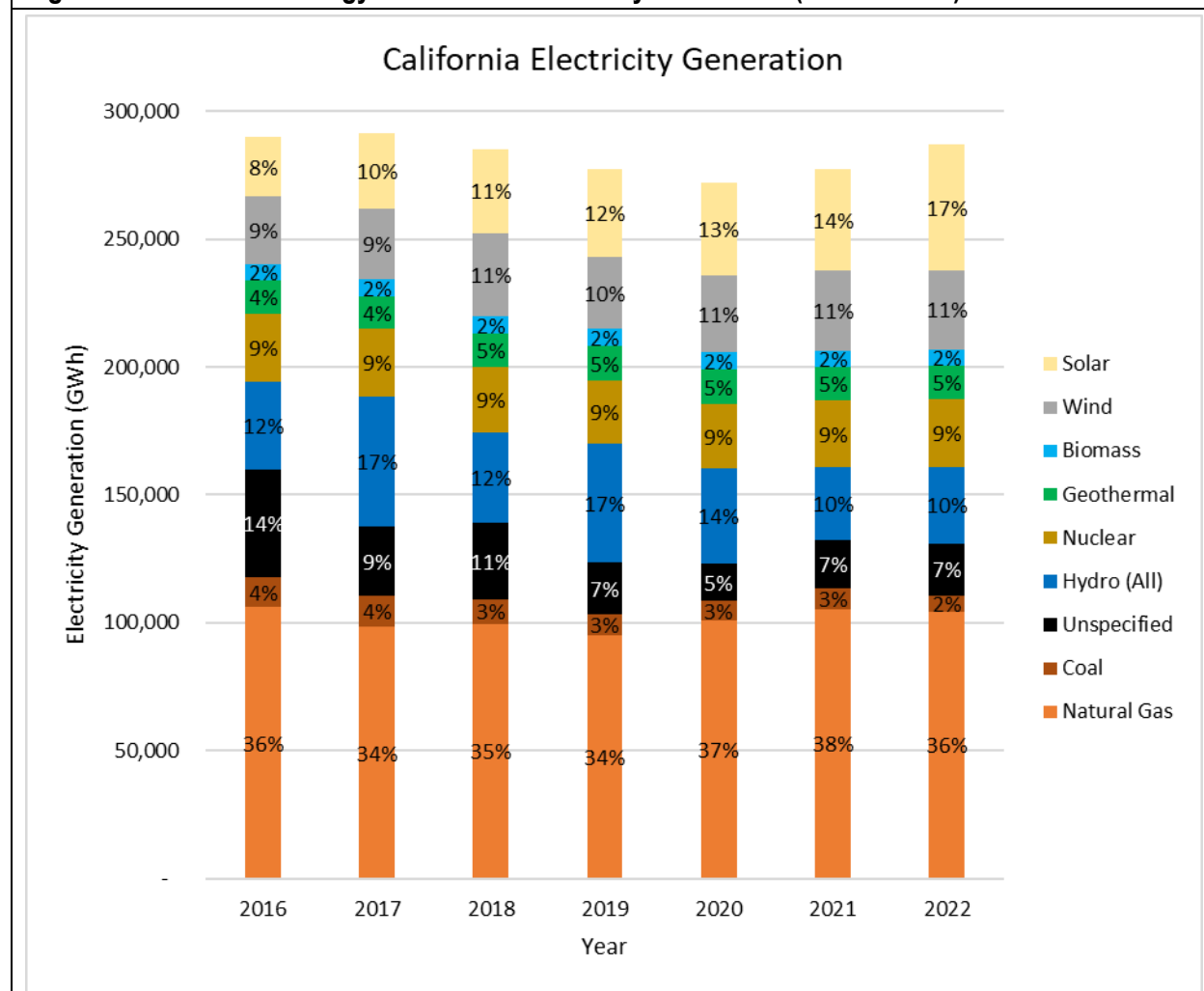
According to the U.S. EIA, California is the most populous state in the U.S., representing 12 percent of the total national population, has the largest economy, and is second only to Texas in total energy consumption. However, California has one of the lowest per capita energy consumption levels in the U.S. This is a result of California's mild climate, extensive efforts to increase energy efficiency, and

implementation of alternative technologies. California leads the nation in electricity generation from solar, geothermal, and biomass resources (U.S. EIA 2022f).

Electricity

As discussed above, California has one of the lowest per capita energy consumption levels in the U.S, which, in part, is attributable to its extensive efforts to increase energy efficiency. The State has also passed several legislative bills that have required retail-energy suppliers to increase the amount of renewable electricity supplied to customers. California's annual electricity generation and the sources that created it for the 2016 through 2022 calendar years are presented below in Table 3-4 and Figure 3-2.

Table 3-4: California Electricity Generation (2016 to 2022)							
Energy Source	Electricity Produced Per Calendar Year (Thousand GWh)						
	2016	2017	2018	2019	2020	2021	2022
Natural Gas	106	98	100	95	101	105	104
Coal	12	12	9	8	7	8	6
Petroleum / Other	<0.1	<0.1	<0.1	<0.1	1	1	<0.5
Nuclear	27	27	26	25	25	26	26
Hydroelectric	19	20	20	20	20	19	30
Wind	26	27	33	28	30	32	31
Solar	24	30	33	34	36	39	49
Biomass	13	13	13	13	13	13	13
Unspecified ^(A)	7	7	7	7	7	6	6
Total Electricity ^(B)	42	27	30	20	20	19	20
<i>Fossil Fuels^(C)</i>	291	292	285	278	273	278	287
<i>Non-Hydroelectric Renewables^(D)</i>	118	111	110	104	109	114	111
<i>Total Carbon Free Electricity^(E)</i>	69	77	85	82	86	90	100
Sources: CEC 2024a							
(A) "Unspecified" power is power that could not be traced to a facility, and would include a mix of fuel types							
(B) Totals may not equal due to rounding							
(C) Fossil fuels include natural gas and coal.							
(D) Non-hydroelectric renewables include wind and solar.							
(E) Carbon-free energy sources consist of nuclear, hydroelectric, and renewable fuels.							

Figure 3-2: California Energy Sources for Electricity Generation (2015 to 2021)

Sources: CEC 2024a

Note: Unspecified power is power that could not be traced to a facility, and would include a mix of fuel types.

As shown in Table 3-4 and Figure 3-2, overall electricity consumption throughout the State has remained relatively constant over the 2016 to 2022 timeframe, from approximately 291 million GWh in 2016 to 287 million GWh in 2022 (an approximately 1 percent decrease). During this time, the electricity energy portfolio has shifted. As shown in Figure 3-2, electricity production from natural gas and coal power plants has decreased slightly from a combined total of 41% of the total energy supply, to approximately 39%. Biomass, geothermal, and nuclear sources have remained relatively constant at 2%, 5%, and 9%, respectively, while electricity generated from wind, and solar sources has increased. Electricity production from solar had one of the biggest relative increases in electricity production, increasing from approximately 8% to 17% between 2016 and 2022 (an approximately 113% increase). In 2022, over half of California's electricity was generated from carbon-free sources, including renewables, nuclear, and hydroelectric.

Similar to U.S. electricity generation, California electricity generation has shifted, with coal decreasing, renewables increasing, and nuclear and hydroelectric remaining relatively constant. However, while the direction of the shift in energy sources on the national and statewide level is the same, the state differs from U.S. energy consumption in the scale of this shift. For example, California's energy mix used

for electricity generation contains over twice the amount of renewable fuels as the U.S.⁶. California also uses a lower percentage of fossil fuels, mainly due to its low coal consumption.

Natural Gas

Annual natural-gas consumption in the State has fluctuated since the 1970s, but generally remained at or around 16,000 million therms since the 1990s (U.S. EIA 2022j). Although California has historically accounted for approximately 10% of annual nationwide natural gas consumption, its reserves and production constitute less than 1% of the total United States (U.S. EIA 2024 and U.S. EIA 2023f).

In 2020, California consumed about 15,120 million therms of natural gas, with the majority of that consumption attributable to the industrial sector (50%) followed by the residential (31%) and commercial (16%) sectors. Approximately 88% of Californian homes used natural gas in some building system capacity, including space heating (55% of homes), water heating (75% of homes), and/or cooking appliance(s) (70% of homes) (U.S. EIA 2022g and U.S. EIA 2022h).⁷

Transportation

California's transportation sector consumed 74.7 million Btu of energy per capita in 2022, which ranked 36th in the nation (Office of Governor Gavin Newsom, 2022). This means that California had the 16th best transportation energy per capita rate (i.e., most efficient) in the United States, including the District of Columbia. Much of the State's efficiency with regard to the amount of transportation energy consumed per capita can be attributed to the increase in vehicle fuel efficiency standards required by the State.

California's production of gasoline and diesel fuels supplies both in- and out-of-state demand; however, most gasoline and diesel fuel sold in California for motor vehicles is refined within the state to meet state-specific formulations required by CARB (i.e., these fuels typically are not imported from out of state). Crude oil extraction and production has been decreasing since the 1980s (from 402 million barrels in 1986 to 200 million barrels in 2020) and is projected to continue to decline (CARB 2022a). According to taxable sales figures available from the California Department of Tax and Fee Administration, statewide both gasoline and diesel have declined since 2013. Gasoline sales saw the most notable decrease (an approximately 23% drop) from approximately 14,702 million gallons in 2014 to approximately 11,367 million gallons in 2023. This trend has not been linear, however. Gasoline sales increased from 2014 to 2017, remained relatively constant between 2017 and 2019, and decreased in the 2020 to 2023 timeframe. This decrease is most likely attributable to the shelter-in-place orders imposed due to the COVID-19 pandemic, but is also likely associated with vehicle turnover (i.e., from older, less fuel efficient cars to newer models) across the same timeframe. Diesel fuel sales also decreased between 2014 and 2021, from approximately 2,776 million gallons in 2014 to approximately 2,476 million gallons in 2023 (an approximately 11% decrease). Unlike gasoline sales, which began to decrease in 2020, diesel sales tended to increase between 2014 and 2022, only decreasing below 2013 levels in 2023 (CDTFA, 2023).

In 2022, California reached a milestone 1 million ZEVs sold, accounting for 40% of all ZEVs operating in the U.S. (Office of Governor Gavin Newsom 2022). Most of the ZEVs sold to date have been electric vehicles; however, vehicles powered by hydrogen fuel cells have also been expanding in availability

⁶ Whereas approximately 33% of electricity in California is from renewable sources, only 13% of electricity generated in the greater U.S. is from renewable sources.

⁷ Cooking appliances includes natural gas ranges, cooktops, and ovens; natural gas outdoor grills are not included in this metric.

and use. CARB estimated that by April 2023, 12,993 hydrogen fuel cell vehicles had active registration in California (CARB 2023a).

Transportation fuels are not used equally across different vehicle types in the state. For example, whereas light-duty vehicles (e.g., cars and pick-up trucks) are mainly powered by gasoline and electricity, medium- and heavy-duty vehicles (e.g., work trucks, semi-trucks, etc.) are generally powered by diesel. Natural gas can also be used as a fuel source in trucks and buses. Table 3-5 below shows a breakdown of state-wide vehicle population in 2022, by fuel type.

Table 3-5: California Transportation Fuels by Vehicle Type (2022)					
Vehicle Type	Breakdown in Fuel Type				
	Gasoline	Diesel	Natural Gas	Electricity	Plug-in Hybrid^(A)
Medium- and heavy-duty trucks	8.3%	88.7%	3.0%	0.0%	0.0%
Light heavy-duty trucks	53.7%	46.3%	0.0%	0.0%	0.0%
Buses	33.9%	47.6%	18.2%	0.3%	0.0%
Light-duty vehicles	96.1%	0.5%	0.0%	2.1%	1.3%
Source: EMFAC2021					
(A) Plug-in hybrid vehicles are powered by gasoline and electricity.					

Although each vehicle category may use several different fuel types, the majority of trucks in 2022 used diesel; most buses mostly used gasoline, diesel, and natural gas; and the majority of light duty vehicles used gasoline.

3.1.2.3 Local

Electricity

In 2022 Riverside County consumed approximately 17,780 GWh of electricity, about 6.2% of the state's electricity consumption (CEC, 2023a). The non-residential sector made up approximately 49% of County-wide consumption while the residential sector made up approximately 51% of County-wide consumption (CEC, 2023a).

SCE is the electricity utility provider at the project site. In 2023, approximately 52% of the electricity that SCE delivered to customers came from carbon-free resources, including solar energy (approximately 20%), wind energy (approximately 12%), and geothermal energy (approximately 5%) (SCE 2024). This energy mix reflects an increase in renewable energy from SCE's 2021 energy sources, which had 43% carbon-free resources.(SCE 2022).

Natural Gas

Riverside County consumed approximately 431 million therms of natural gas in 2022, accounting for approximately 3.7% of statewide consumption. The non-residential sector made up approximately 34% of County-wide consumption, while the residential sector made up approximately 66% (CEC, 2023b).

SoCalGas provides natural gas service at the Project area. SoCalGas is the principal distributor of natural gas in Southern California and provides natural gas for residential, commercial, and industrial markets. The annual natural gas sale of SoCalGas to all markets in 2022 was approximately 5,026 million therms (CEC, 2023c).

Transportation

Retail fuel outlet survey data indicates Riverside County accounted for approximately 7.2% and 7.6% of total statewide gasoline and diesel sales, respectively, in 2022 (CEC, 2023d).

3.2 ENERGY REGULATORY SETTING

3.2.1 FEDERAL ENERGY REGULATIONS

3.2.1.1 Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy and Policy Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards.

3.2.1.2 Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 was signed into law. In addition to setting increased Corporate Average Fuel Economy (CAFE) standards for motor vehicles, the act also includes the following provisions related to energy efficiency:

- Renewable fuel standards (RFS)
- Appliance and lighting efficiency standards
- Building energy efficiency

The federal legislation requires ever-increasing levels of renewable fuels to replace petroleum. The U.S. EPA is responsible for developing and implementing regulations to ensure transportation fuel sold in the United State contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Energy Independence and Security Act of 2007 (EISA), the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

- EISA expanding the RFS program to include diesel, in addition to gasoline;
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA required the U.S. EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHG than the petroleum fuel it replaces (U.S. EPA, 2022b).

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

3.2.1.3 Federal Vehicle Standards

In 2009, the NHTSA issued a final rule regarding fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the U.S. EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of carbon dioxide (CO₂) in model year 2025, on an average industry fleetwide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the U.S. EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the U.S. EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6% to 23% over the 2010 baselines.

In August 2016, the U.S. EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018–2027 for certain trailers, and model years 2021–2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion metric tons (MT) and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (U.S. EPA and NHTSA, 2016).

3.2.2 STATE ENERGY REGULATIONS

3.2.2.1 Title 24 Energy Standards

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in California. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CalGreen Code). The purpose of the CalGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality.” The CalGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC).

CalGreen contains both mandatory and voluntary measures. For non-residential land uses there are 39 mandatory measures including, but not limited to, exterior light pollution reduction, wastewater reduction by 20 percent, and commissioning of projects over 10,000 square feet. Two tiers of voluntary measures apply to nonresidential land uses, for a total of 36 additional elective measures.

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2019 standards, focused on three key areas: proposing new requirements for installation of solar photovoltaics for newly constructed low-rise residential buildings, updating current ventilation and Indoor Air Quality (IAQ) requirements, and extending Title 24 Part 6 to apply to healthcare facilities. The 2019 Building Energy Efficiency Standards were approximately 53 percent more than the 2016 Title 24 Energy Standards for residential development and approximately 30 percent more efficient for non-residential development.

The 2022 standards, which were adopted in August 2021, went into effect on January 1, 2023. The 2022 Building Energy Efficiency Standards focuses on establishing or expanding standards for electric heat pumps, for single-family homes to be electric-ready, for solar photovoltaic system and battery storage, and for ventilation systems (CEC 2021b). In general, the residential and nonresidential mandatory energy efficiency measures are unchanged between the 2019 and 2022 standards. Instead, updates to the CalGreen Code under the 2022 updates include: increased requirements for EV-ready parking, exemptions for tree shade requirements for parking and other areas shaded by solar structures, and additional requirements for CO₂ monitoring in schools.

3.2.2.2 Executive Order B-30-15

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase the amount of renewable electricity provided state-wide to 50 percent.
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner.
- Reduce petroleum use in cars and trucks by up to 50 percent.
- Reduce emissions of short-lived climate pollutants.
- Manage farms, rangelands, forests, and wetlands to increasingly store carbon.

3.2.2.3 Executive Order N-19-19

In September 2019, Governor Newsome signed Executive Order N-19-19, which sought to reduce GHG emissions, reduce climate change impacts, and build the economy. This included directing Caltrans to leverage funds to reduce fuel consumption and GHG emissions and directing the Department of General Services to reduce GHG emissions in the state-owned buildings and vehicles. The executive order also requires CARB to:

- Develop new criteria for clean vehicle incentive programs to encourage manufacturers to produce clean, affordable cars,
- Propose new strategies to increase demand in the primary and secondary markets for zero emissions vehicles, and
- Consider strengthening existing or adopting new regulations to achieve the necessary greenhouse gas reductions from within the transportation sector.

3.2.2.4 Senate Bill 375 (Sustainable Communities and Climate Protection Act)

In January 2009, California Senate Bill (SB) 375, known as the Sustainable Communities and Climate Protection Act, went into effect. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce GHG emissions and other air pollutants. SB 375 tasks CARB to set GHG reduction targets for each of California's 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

In August 2010, CARB released the proposed GHG reduction targets for the MPOs. The proposed reduction targets for the Southern California Association of Governments (SCAG) region were 8% by year 2020 and 13% by year 2035. In September 2010 and February 2011, the 8% and the 13% targets were adopted, respectively. SCAG's Regional Council adopted 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) on April 7, 2016, which updated the 2012 RTP/SCS.

In March 2018, CARB established new regional GHG reduction targets for SCAG and other MPOs in the state (CARB, 2018). The new SCAG targets are an 8% reduction in per capita passenger vehicle GHG emission levels by 2020 and a 19% reduction by 2035. On May 7, 2020, SCAG adopted "Connect SoCal", the 2020-2045 RTP/SCS, for federal transportation conformity purposes only. On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt Connect SoCal 2020, and the addendum to the Connect SoCal Program Environmental Impact Report. Connect SoCal 2020 was designed to meet the regional GHG reduction targets for SCAG that were identified by CARB in 2018.

Connect SoCal 2020 was a long-range visioning plan that built upon and expanded land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. The plan centered on maintaining and better managing the transportation network for moving people and goods, while expanding mobility choices by locating housing, jobs, and transit closer together and increasing investment in transit and complete streets. The Core Vision included: Sustainable Development, System Preservation and Resilience, Demand and System Management, Transit Backbone, Complete Streets, and Goods Movement.

In April 2024, SCAG's Regional Council adopted Connect SoCal 2024, (2024 RTP/SCS) an update to Connect SoCal 2020 that planned development in the region through 2050. Connect SoCal 2024 contains the following elements:

- **Regional Planning Policies** for land use and transportation. The Connect SoCal 2024 notes that not all policies are applicable in all places, and local agencies should decide which policies to implement. Policies include prioritizing the maintenance of the SCAG region's existing transportation system, developing a multimodal transportation network, encouraging residential and employment development near transit, supporting technology integration, transportation safety, equity, sustainable development, and climate resilience, and accelerating the deployment of zero emission technologies.
- **A Project List** that details Connect SoCal 2024's near- and long-term investments. The Project List contains project submissions from each county in the SCAG region, and totals approximately 751.7 billion dollars of investments. Sixty-one percent (61%) of investment funds are allocated to

operations and maintenance, 37% to capital projects, and 2% to debt service. The Project List reflects county and local level priorities that align with the SCAG region's goals.

- **Forecasted Regional Development Pattern** for jobs and housing through 2050. Connect SoCal 2024 analyzes the sustainability of development by establishing Priority Development Areas (PDAs). PDAs are areas within the SCAG region where future growth can be located to meet the goals in Connect SoCal 2024, such as areas that have multiple modes of transportation or that would have shorter trip distances.
- **Regional Strategic Investments** that include additional projects that are needed to achieve objectives but that are not covered by local plans. The investments would be funded by new revenue sources, and would include investments to maintain the existing transportation system, support multimodal transportation, provide supportive infrastructure for housing and for zero emission vehicles, and increasing freight efficiency. The Regional Strategic Investments are supported by Regional Planning Policies and Implementation Strategies.
- **Implementation Strategies** that clarify the role SCAG and other responsible agencies have in efforts involving Mobility, Communities, Environment, and Economy. These include efforts to support projects within PDAs, support zero emission vehicle charging.

Connect SoCal 2024 updates the land use, demographic, and growth assumptions that were contained in Connect SoCal 2020. The Regional Growth Forecast in Connect SoCal 2024 projects a 30% higher household growth during the 2020s than was projected in Connect SoCal 2020. Connect SoCal 2024 also shifts the categories of regions that can accommodate jobs and housing from Priority Growth Areas (PGAs) to Priority Development Areas (PDAs). While PGAs and PDAs have substantial overlap, PDAs do not include Job Centers and High-Quality Transit Areas that helped compose the PGAs in Connect SoCal 2020. Compared to Connect SoCal 2020's PGAs, SoCal 2024's PDAs include a greater percentage of new households and a substantially lower percentage of new jobs in a larger total land area.⁸

Connect SoCal 2024 projects that approximately 66% of new households and 54% of new jobs between 2019 and 2050 will be located in PDAs, which accounts for approximately 8.2% of the region's total land area. PDAs in Connect SoCal 2024 include Neighborhood Mobility Areas (NMAs), Transit Priority Areas (TPAs), Livable Corridors, and Spheres of Influence (SOIs). If implemented, Connect SoCal 2024 is projected to achieve the region's targets for reducing greenhouse gases from automobiles and light-duty trucks by 19% per capita, from 2005 levels, by 2035 (SCAG, 2024).

3.2.2.5 Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard (RPS) Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The 2003 *Integrated Energy Policy Report* recommended accelerating that goal to 20 percent by 2010, and the 2004 *Energy Report Update* further recommended increasing the target to 33 percent by 2020. The state's *Energy Action Plan* also supported this goal. In 2006 under Senate Bill 107, California's 20 percent by 2010 RPS goal was codified. The legislation required retail sellers of electricity to increase renewable energy purchases by at least one percent each year with a target of 20 percent renewables by

⁸ Connect SoCal 2020 anticipated that from 2016 to 2045, approximately 64% of households and 74% of new jobs would occur in PGAs, which comprised approximately 4% of the SCAG region's total land area. Connect SoCal 2024 anticipated that from 2019 to 2050, approximately 66% of household growth and 54% of employment growth would occur in PDAs, which comprise approximately 8.2% the SCAG region's total land area. 36% of household growth was located in more than one priority area and outside environmental constraint areas in Connect SoCal 2020 compared to 39% in Connect SoCal 2024.

2010. Publicly owned utilities set their own RPS goals, recognizing the intent of the legislature to attain the 20 percent by 2010 target.

On November 17, 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring “[a]ll retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020.” The following year, Executive Order S-21-09 directed CARB, under its AB 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020.

In October 2015, Governor Brown signed SB 350 to codify ambitious climate and clean energy goals. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure “half of the state’s electricity from renewable sources by 2030.”

The State’s RPS program was further strengthened by the passage of SB 100 in 2018. SB 100 revised the State’s RPS Program to require retail sellers of electricity to serve 50% and 60% of the total kilowatt-hours sold to retail end-use customers be served by renewable energy sources by 2026 and 2030, respectively, and requires 100% of all electricity supplied come from renewable sources by 2045.

As part of the package of bills signed into law by Governor Newsom on September 16, 2022, also referred to as the “California Climate Commitment”, the State’s RPS Program was strengthened once again by adding additional interim clean electricity targets. Specifically, SB 1020 established clean electricity targets of 90% by 2035 and 95% by 2040 with the intent of advancing the state’s trajectory to the existing 100% clean electricity retail sales by 2045 (SB 100).

3.2.2.6 Executive Order B-55-18, AB 1279, and SB 1020

On September 10, 2018, Governor Brown signed Executive Order B-55-18, to achieve carbon neutrality by moving California to 100% clean energy by 2045. This Executive Order also includes specific measures to reduce GHG emissions via clean transportation, energy efficient buildings, directing cap-and-trade funds to disadvantaged communities, and better management of the state’s forest land. On September 16, 2022, Governor Newsom signed into law AB 1279, the California Climate Crisis Act, and SB 1020, the Clean Energy, Jobs, and Affordability Act of 2022. AB 1279 codified California’s 2045 carbon neutrality goal and established a GHG emission reduction target of 85% below 1990 levels. SB 1020 set targets for the retail sale of electricity of 90% clean electricity by 2035 and 95% by 2040, and 100% by 2045. It also set a target for 100% clean electricity for electricity serving state agencies by 2035.

3.2.2.7 Assembly Bill 2127 and Senate Bill 1075

AB 2127 and SB 1075 support the advancement of green-vehicle transportation infrastructure and technology through statewide assessments.

In 2018, California adopted AB 2127, which requires the CEC, with CARB and CPUC, to prepare a biennial assessment of the State’s electric vehicle charging infrastructure needed to meet the 2030 ZEV deployment and GHG reduction goals.

On September 16, 2022, Governor Newsome signed SB 1075 SB 1075 requiring CARB, in consultation with other state agencies, to evaluate hydrogen and form policy recommendations to accelerate the production and use of hydrogen as an energy source.

3.2.2.8 Sustainable Freight Plan

The Sustainable Freight Plan was adopted by CARB in July 2016, and provides a recommendation on a high-level vision and broad direction to the Governor to consider for State agencies to utilize when

developing specific investments, policies, and programs related to the freight transport system that serves our State's transportation, environmental, and economic interests. The Sustainable Freight Plan includes recommendations on:

- A long-term 2050 vision and guiding principles for California's future freight transportation system.
- Targets for 2030 to guide the State toward meeting the Vision.
- Opportunities to leverage State freight transport system investments.
- Actions to initiate over the next five years to make progress towards the Targets and the Vision.
- Pilot projects to achieve on-the-ground progress in the near-term.
- Additional concepts for further exploration and development, if viable.

3.2.2.9 Advanced Clean Trucks Program

The Advanced Clean Trucks (ACT) regulation was approved by CARB on June 25, 2020 and has two main components, a manufacturers ZEV sales requirement and a one-time reporting requirement for large entities and fleets.

- **ZEV Truck Sales.** Manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines would be required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales would need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 – 8 straight truck sales, and 40% of truck tractor sales.
- **Company and Fleet Reporting.** Large employers including retailers, manufacturers, brokers and others would be required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, would be required to report about their existing fleet operations. This information would help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

Promoting the development and use of advanced clean trucks will help CARB achieve its emission reduction strategies as outlined in the SIP, Sustainable Freight Action Plan, SB 350, and AB 32.

3.2.2.10 Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars (ACC) Program (formerly known as Pavley II) for model years 2017-2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the ZEV regulation. The Program combines the control of smog, soot, and global warming gases with requirements for greater numbers of zero-emission vehicles into a single package of standards. By 2025, new automobiles under California's ACC Program will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

Executive Order B-48-18, issued by Governor Brown in January 2018, establishes a target to have five million ZEVs on the road in California by 2030. This Executive Order is supported by the State's 2018 ZEV Action Plan Priorities Update, which expands upon the State's 2016 ZEV Action Plan. While the 2016 plan remains in effect, the 2018 update functions as an addendum, highlighting the most important actions State agencies are taking in 2018 to implement the directives of Executive Order B-48-18.

EO N-79-20, issued by Governor Newsom in September 2020, set a goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. It also set a goal that 100 percent of

medium- and heavy-duty vehicles in the state be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks. In addition, this EO set a goal to transition to 100 percent zero-emission off-road vehicles and equipment in the state by 2035 where feasible.

In August 2022, CARB approved the Advanced Clean Cars II program, which sets requirements for ZEV sales and codifies the light-duty vehicle goals in EO N-79-20. The regulation requires new light duty vehicle sales will be 35% zero emission or plug in hybrid electric vehicles in 2026, 68% in 2030, and 100% in 2035.

3.2.2.11 CARB 2022 Scoping Plan and Anticipated Changes in Energy Consumption

As identified in the *CARB 2022 Scoping Plan Update*, California energy consumption is anticipated to shift over the coming decades as the State moves towards carbon neutrality. As part of CARB's plan to achieve carbon neutrality by 2045, the State will decarbonize energy consumption across several primary sectors, including industrial processes, residential and commercial buildings, and transportation. Successful implementation of the *2022 Scoping Plan Update* is anticipated to result in a large reduction in the State's fossil fuel consumption and an increase in carbon-free electricity, hydrogen, and biogas. Unlike the previous scoping plans, the *2022 Scoping Plan* relies more heavily on the implementation, adoption, and use of existing technologies to reduce GHG emissions over the coming decades, as opposed to technologies that need to be developed. The following describes anticipated changes in energy consumption habits over the coming decades, and how the *2022 Scoping Plan Update*, other rules and regulations, and funding strategies, are anticipated to influence the primary sources of energy used within various sectors of the economy.

Industrial Sector

Overall energy demand for industrial manufacturing is projected to increase from 2022 to 2045. The primary sources of energy for these activities have historically come from liquid petroleum fuel (e.g., gasoline, diesel, oil) and natural gas, but are anticipated to shift to electricity under the implementation of the *2022 Scoping Plan Update* and related legislation (e.g., AB 197 that calls for direct emissions reductions from sources covered by the AB 32 inventory). Hydrogen, biomethane, and liquid biofuels are anticipated to increase and replace petroleum fuel and natural gas; however, a complete phase out of fossil fuels is expected to occur by 2045. Industrial processes and equipment have varying energy demands. Replacement energy sources therefore must still be able to meet the same instantaneous and long-term energy demands that are currently provided by petroleum and natural gas. The *2022 Scoping Plan* expects that:

- Electricity and thermal solar will replace fossil fuels for industrial processes with low heat requirements.
- Hydrogen and biomethane will replace fossil fuels for industrial processes with high heat requirements.

The energy demands for oil and gas extraction and petroleum refining are projected to decrease by more than 75% between 2022 and 2045, corresponding to a decrease in demand for gasoline and diesel. The *2022 Scoping Plan* notes, however, that it would not be feasible to eliminate oil and gas extraction completely by 2045 due to an existing demand that would remain in some capacity (CARB 2022a). Decreases in gasoline and diesel consumption would be offset by increases in electricity, hydrogen, and biomethane.

Residential and Commercial

The 2022 *Scoping Plan* projects that residential and commercial buildings will make up one third to half of building stock statewide by 2050. The 2022 *Scoping Plan* calls for ending natural gas in new residential and commercial buildings, replacing gas appliances, and reducing existing natural gas infrastructure. It is anticipated that, under the scenario evaluated in the 2022 *Scoping Plan*, approximately 90% of energy demand in residential and commercial buildings would be for electricity. Remaining building energy demand would be attributable to hydrogen, biomethane, and liquid biofuel, with a minor amount of natural gas and liquid petroleum remaining in the overall building energy consumption portfolio. The 2022 *Scoping Plan* projects that by 2035, seven million homes will be all-electric or electric-ready and that 100% of residential appliance sales would be electric. The 2022 *Scoping Plan* also projects that 80% of appliance sales for commercial buildings will be electric by 2035 and by 2045, 100% of the sales will be electric.

Transportation

The 2022 *Scoping Plan* identifies three categories in the transportation sector where changes in energy consumption would occur: technology (vehicles and refueling infrastructure), fuels, and VMT.

Per Executive Order (EO) N-79-20, all new passenger vehicles sold in California should be zero-emission by 2035. The EO also calls for all drayage trucks to be zero-emission 2035, and buses and heavy-duty long-haul trucks to be zero-emission by 2045, too, where feasible. Regulations, such as Advanced Clean Cars II, Advanced Clean Trucks, and the proposed Advanced Clean Fleet regulation, along with State incentive programs, would help with the deployment of ZEVs. In addition, California plans to rapidly expand its electric charging infrastructure from approximately 80,000 EV charging stations in 2022 to approximately 250,000 EV stations by 2025, which is over a doubling in EV charging station capacity. This goal would be supported by funding from the CEC, utilities, and other programs. In 2022, the CEC approved a \$2.9 billion investment plan for zero-emission transportation infrastructure. The CEC's investment plan, which would be used to install 90,000 of the 170,000 new EV chargers, includes the following breakdown in funding for the 2022-2026 time period (CEC 2022).

- \$1.7 billion for medium- and heavy-duty ZEV infrastructure
- \$900 million for light-duty EV charging infrastructure
- \$118 million for ZEV manufacturing
- \$90 million for hydrogen refueling infrastructure
- \$97 million for emerging opportunities such as aviation, locomotive, marine vessels and vehicle-grid integration
- \$15 million zero- and near-zero-carbon fuel production and supply
- \$15 million for low-carbon fuels
- \$10 million for workforce development

Existing ZEVs are primarily fueled by electricity and hydrogen. The production of electricity and hydrogen would continue to increase. Biomethane would be used along with fossil fuels while the development of ZEV technologies for aviation, locomotives, and marine vessels continues. Renewable diesel has increased from approximately 1.8 million gallons in 2011 to approximately 589 million gallons in 2020.

The Scoping Plan aims to reduce VMT per capita by 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045, which would result in a decrease in energy demand from the transportation sector. The Scoping Plan seeks to achieve this goal through strategies such as increasing funding for public transportation, implementing roadway pricing programs, expanding active transportation infrastructure, and supporting transportation and land use planning.

Increased Demand in Electricity and Alternative Fuel Sources

Electricity demand is anticipated to increase over the coming decades as more building systems, appliances, industrial processes, and vehicles transition to electricity as a primary energy source. Actions are being taken at the state level to help accommodate the additional demand, while ensuring that necessary increase in capacity will come from renewable sources.

In California, renewable energy and carbon-free energy sources are projected to increase in line with state goals, such as achieving 60% renewable resources for electricity by 2030 and 100% carbon-free energy sources for electricity by 2045 required by SB 100 (CEC 2021c). California would increase renewable energy infrastructure such as solar arrays and wind turbines so that electricity generated by carbon-free sources would replace electricity generated by natural gas. CARB projects that by 2045 California will add four times the solar and wind capacity and 1,700 times the hydrogen supply. While fossil fuels would still be used, the demand for fossil fuels in 2045 would decrease by 86% relative to 2022, including a 94% reduction in demand for liquid petroleum.

3.2.3 CITY OF MENIFEE GENERAL PLAN

The City of Menifee adopted its General Plan in 2013. The Open Space and Conservation Element of the 2013 General Plan contains the following policies related to energy consumption that may be applicable to the project.

Goal OSC-4: Efficient and environmentally appropriate use and management of energy and mineral resources to ensure their availability for future generations.

- **OCS-4.1:** Apply energy efficiency and conservation practices in land use, transportation demand management, and subdivision and building design.

Goal OSC-9: Reduced impacts to air quality at the local level by minimizing pollution and particulate matter.

- **Policy OSC-9.5:** Comply with the mandatory requirements of Title 24 Part 1 of the California Building Standards Code (CALGreen) and Title 24 Part 6 Building and Energy Efficiency Standards.

4 GREENHOUSE GAS SETTING AND REGULATORY FRAMEWORK

This chapter provides information on the environmental and regulatory GHG setting of the proposed Project. Information on existing GHG conditions, relevant standards, and issues of concern was obtained from the U.S. EPA, CARB, and SCAQMD.

4.1 DEFINING CLIMATE CHANGE

Climate change is the distinct change in measures of climate for a long period of time. Climate change can result from natural processes and from human activities. Natural changes in the climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (i.e. changes in ocean circulation). Human activities can affect the atmosphere through emissions of gases and changes to the planet's surface. Emissions affect the atmosphere directly by changing its chemical composition, while changes to the land surface indirectly affect the atmosphere by changing the way the Earth absorbs gases from the atmosphere. The term "climate change" is preferred over the term "global warming" because "climate change" conveys the fact that other changes can occur beyond just average increase in temperatures near the Earth's surface.

Elements that indicate that climate change is occurring on Earth include, but are not limited to:

- Rising of global surface temperatures by 1.3°F over the last 100 years;
- Changes in precipitation patterns;
- Melting ice in the Arctic;
- Melting glaciers throughout the world;
- Rising ocean temperatures;
- Acidification of oceans; and
- Range shifts in plant and animal species

Climate change is intimately tied to the Earth's greenhouse effect. The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The Earth's surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth because it keeps the planet warmer during the nights than without it. Emissions from human activities since the beginning of the industrial revolution (approximately 150 years ago) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature. Human activities that enhance the greenhouse effect are detailed below.

4.1.1 GREENHOUSE GASES

Gases that trap heat in the atmosphere and affect regulation of the earth's temperature are known as GHG. Many chemical compounds found in the earth's atmosphere exhibit the GHG property. GHG allow sunlight to enter the atmosphere freely. When sunlight strikes the earth's surface, it is either absorbed or reflected back toward space. Earth that has absorbed sunlight warms up and emits infrared radiation toward space. GHG absorb this infrared radiation and "trap" the energy in the earth's atmosphere.

GHG that contribute to climate regulation are a different type of pollutant than criteria or hazardous air pollutants because climate regulation is global in scale, both in terms of causes and effects. Some GHG are emitted to the atmosphere naturally by biological and geological processes such as evaporation (water vapor), aerobic respiration (carbon dioxide), and off-gassing from low oxygen environments such as swamps or exposed permafrost (methane); however, GHG emissions from human activities such as fuel combustion (e.g., carbon dioxide) and refrigerants use (e.g., hydrofluorocarbons) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change. Human production of GHG has increased steadily since pre-industrial times (approximately pre-1880) and atmospheric carbon dioxide concentrations have increased from a pre-industrial value of 280 ppm in the early 1800's to 427 ppm in July 2024 (NOAA, 2024).

The 1997 United Nations' Kyoto Protocol international treaty set targets for reductions in emissions of four specific GHG – carbon dioxide, methane, nitrous oxide, and sulfur hexafluoride – and two groups of gases – hydrofluorocarbons and perfluorocarbons. These GHG are the primary GHG emitted into the atmosphere by human activities. Water vapor is also a common GHG that regulates the earth's temperature; however, the amount of water vapor in the atmosphere can change substantially from day to day, whereas other GHG emissions remain in the atmosphere for longer periods of time. Black carbon consists of particles emitted during combustion; although a particle and not a gas, black carbon also acts to trap heat in the Earth's atmosphere. The six common GHG are described below.

- **Carbon Dioxide (CO₂).** CO₂ is released to the atmosphere when fossil fuels (oil, gasoline, diesel, natural gas, and coal), solid waste, and wood or wood products are burned.
- **Methane (CH₄).** CH₄ is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic waste in municipal solid waste landfills and the raising of livestock.
- **Nitrous Oxide (N₂O).** N₂O is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels.
- **Sulfur Hexafluoride (SF₆).** SF₆ is commonly used as an electrical insulator in high voltage electrical transmission and distribution equipment such as circuit breakers, substations, and transmission switchgear. Releases of SF₆ occur during maintenance and servicing as well as from leaks of electrical equipment.
- **Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs).** HFCs and PFCs are generated in a variety of industrial processes. Although the amount of these gases emitted into the atmosphere is small in terms of their absolute mass, they are potent agents of climate change due to their high global warming potential.

GHG can remain in the atmosphere long after they are emitted. The potential for a particular greenhouse gas to absorb and trap heat in the atmosphere is considered its global warming potential (GWP). The reference gas for measuring GWP is CO₂, which has a GWP of one. By comparison, CH₄ has a GWP of 28, which means that one molecule of CH₄ has 28 times the effect on global warming as one molecule of CO₂. Multiplying the estimated emissions for non-CO₂ GHG by their GWP determines their CO₂ equivalent (CO₂e), which enables a project's combined GWP to be expressed in terms of mass CO₂ emissions. The GWP and estimated atmospheric lifetimes of the common GHG are shown in Table 4-1.

Table 4-1: Global Warming Potential (GWP) of Common Greenhouse Gases (GHG)		
GHG	Lifetime (years)	GWP^(A)
Carbon Dioxide (CO ₂)	50-200	1
Methane (CH ₄)	12	28
Nitrous Oxide (N ₂ O)	114	265
HFC-23	270	12,400
HFC-134a	14	1,300
HFC-152a	1.4	138
PFC-14	50,000	6,630
PFC-116	10,000	11,100
Sulfur Hexafluoride (SF ₆)	3,200	23,500
Source: IPCC, 2014.		
(A) GWPs are based on the United Nations Intergovernmental Panel on Climate Change (IPCC) 5 th Assessment Report.		

4.1.2 CLIMATE CHANGE AND CALIFORNIA

The 2009 California Climate Adaptation Strategy prepared by the California Natural Resources Agency (CNRA) identified anticipated impacts to California due to climate change through extensive modeling efforts. General climate changes in California indicate that:

- California is likely to get hotter and drier as climate change occurs with a reduction in winter snow, particularly in the Sierra Nevada Mountain Range.
- Some reduction in precipitation is likely by the middle of the century.
- Sea levels will rise up to an estimated 55 inches.
- Extreme events such as heat waves, wildfires, droughts, and floods will increase.
- Ecological shifts of habitat and animals are already occurring and will continue to occur (CNRA, 2009).

It should be noted that changes are based on the results of several models prepared under different climatic scenarios; therefore, discrepancies occur between the projections and the interpretation. The potential impacts of global climate change in California are detailed below.

In January 2018, the CNRA adopted *Safeguarding California Plan: 2018 Update*, which built on nearly a decade of adaptation strategies to communicate current and needed actions the State government should take to build climate change resiliency. It identified hundreds of ongoing actions and next steps that State agencies are taking to safeguard Californians from climate impacts within a framework of 81 policy principles and recommendations. The 2018 update also had two new chapters and incorporated a feature showcasing the many linkages among policy areas. A new “Climate Justice” chapter highlighted how equity is woven throughout the entire plan (CNRA, 2018).

The CNRA updated *Safeguarding California* with the 2021 California Climate Adaptation Strategy, which focused on the following six priorities:

- Strengthening protections for climate vulnerable communities
- Bolstering public health and safety to protect against increasing climate risks
- Building a climate resilient economy

- Accelerating nature-based climate solutions and strengthen climate resilience of natural systems
- Making decisions based on the best available climate science; and
- Partnering and collaborating to leverage resources

The 2021 update contained goals and actions to address each priority, and integrated climate actions from statewide climate action plans, sector-based strategies, regionally focused strategies, and state stewardship plans.

The CNRA released the Draft California Climate Adaptation Strategy in May 2024. The Draft update builds on the priorities and actions of the 2021 California Climate Adaptation Strategy, and includes additional new metrics and actions across the six priorities. For example, the 2024 draft contains new actions to analyze and address the effects of extreme heat and new metrics for investing in forest management (CNRA, 2024).

The potential impacts of global climate change in California are detailed below.

4.1.2.1 Public Health and Welfare

Concerns related to public health and climate change includes higher rates of mortality and morbidity, change in prevalence and spread of disease vectors, decreases in food quality and security, reduced water availability, and increased exposure to pesticides. These concerns are all generally related to an increase in ambient outdoor air temperature, particularly in summer.

Higher rates of mortality and morbidity could arise from more frequent heat waves at greater intensities. Health impacts associated with extreme heat events include heat stroke, heat exhaustion, and exacerbation of medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Climate change would result in degradation of air quality promoting the formation of ground-level pollutants, particularly ozone. Degradation of air quality would increase the severity of health impacts from criteria and other, non-GHG air pollutants (e.g., toxic air contaminants). Temperature increases and increases in CO₂ are also expected to increase plant production of pollens, spores, and fungus. Pollens and spores could induce or aggravate allergic rhinitis, asthma, and obstructive pulmonary diseases.

Precipitation projections suggest that California will become drier over the next century due to reduced precipitation and increased evaporation from higher temperatures. These conditions could result in increased occurrences of drought. Surface water reductions will increase the need to pump groundwater, reducing supplies and increasing the potential for land subsidence.

Precipitation changes are also suspected to impact the Sierra snowpack (see “Water Management” herein). Earlier snowmelts could coincide with the rainy season and could result in failure of the flood control devices in that region. Flooding can cause property damage and loss of life for those affected. Increased wildfires are also of concern as the State “dries” over time. Wildfires can also cause property damage, loss of life, and injuries to citizens and emergency response services.

Sea-level rises would also threaten human health and welfare. Flood risks will be increased in coastal areas due to strengthened storm surges and greater tidal damage that could result in injury and loss of property and life. Gradual rising of the sea will permanently inundate many coastal areas in the state.

Other concerns related to public health are changes in the range, incidence, and spread of infectious, water-borne, and food-borne diseases. Changes in humidity levels, distribution of surface water,

and precipitation changes are all likely to shift or increase the preferred range of disease vectors (i.e., mosquitoes). This could expose more people and animals to the potential for vector-borne disease.

4.1.2.2 Biodiversity and Habitat

Changes in temperature will change the livable ranges of plants and animals throughout the state and cause considerable stress on these species. Species will shift their range if appropriate habitat is available and accessible if they cannot adapt to their new climate. If they do not adapt or shift, they face local extirpation or extinction. As the climate changes, community compositions and interactions will be interrupted and changed. These have substantial implications on the ecosystems in the state. Extreme events will lead to tremendous stress and displacement of affected species. This could make it easier for invasive species to enter new areas, due to their ability to more easily adapt. Precipitation changes would alter stream flow patterns and affect fish populations during their life cycle. Sea level rises could impact fragile wetlands and other coastal habitats.

4.1.2.3 Water Management

Although disagreement among scientists on long-term precipitation patterns in the State has occurred, it is generally accepted by scientists that rising temperatures will impact California's water supply due to changes in the Sierra Nevada snowpack. Currently, the State's water infrastructure is designed to both gather and convey water from melting snow and to serve as a flood control device. Snowpack melts gradually through spring warming into early summer, releasing an average of approximately 15 million acre-feet of water. The State's concern related to climate change is that due to rising temperatures, snowpack melt will begin earlier in the spring and will coincide with the rainy season. The combination of precipitation and snowmelt would overwhelm the current system, requiring tradeoffs between water storage and flood protection to be made. Reduction in reserves from the Sierra Nevada snowpack is troublesome for California and particularly for Southern California. Approximately 75-percent of California's available water supply originates in the northern third of the state while 80 percent of demand occurs in the southern two-thirds. There is also concern that rising temperatures will result in decreasing volumes from the Colorado River basin. Colorado River water is important to Southern California because it supplies water directly to Metropolitan Water District of Southern California. Water from the Colorado River is also used to recharge groundwater basins in the Coachella Valley.

4.1.2.4 Agriculture

California is the most agriculturally productive state in the US resulting in more than 37 billion dollars in revenue in 2008. California is the nation's leading producer of nearly 80 crops and livestock commodities, supplying more than half of the nation's fruit and vegetables and over 90 percent of the nation's production of almonds, apricots, raisin grapes, olives, pistachios, and walnuts. Production of crops is not limited to the Central Valley but also occurs in Southern California. Strawberries and grapes are grown in San Bernardino and Riverside Counties. Orange County and San Diego County also contribute to strawberry production. Cherries are also grown in Los Angeles and Riverside County. Anticipated impacts to agricultural resources are mixed when compared to the potentially increased temperatures, reduced chill hours, and changes in precipitation associated with climate change. For example, wheat, cotton, maize, sunflower, and rice are anticipated to show declining yields as temperatures rise. Conversely, grapes and almonds would benefit from warming temperatures. Anticipated increases in the number and severity in heat waves would have a negative impact on livestock where heat stress would make livestock more vulnerable to disease, infection and mortality. The projected drying trend and changes in precipitation are a threat to agricultural production in California. For example, in 2021, drought conditions made it such that

400,000 acres of fields were unable to be planted and harvested and resulted in an economic loss of over \$1.7 billion (CARB 2022a). Reduced water reliability and changes in weather patterns impact irrigated farmlands, reduce food security, and wildfire risk, which can impact agricultural operations and harvesting. Overall, agriculture in California is anticipated to suffer due to climate change impacts.

4.1.2.5 Forestry

Increases in the size and severity of wildfires will substantially impact California's forest resources that are prime targets for wildfires. Public safety risks, property damage, emergency response costs, watershed quality, and habitat fragmentation are all major considerations with regard to increased wildfire risk. Climate change is also predicted to affect the behavior of plant species including seed production, seedling establishment, growth, and vigor due to rising temperatures. Nine of the twenty largest wildfires in California occurred in 2020 and 2021, with 4.3 million acres burning in 2020. More than a quarter of California (25 million acres) was designated at under very high or extremely high fire threat in 2022 (CARB 2022a).

Precipitation changes will also affect forests due to longer dry periods and moisture deficits and drought conditions that limit seedling and sapling growth. In October 2021, the governor declared the drought was a state of emergency, and in September 2022, 94% of the State was in a severe drought (CARB 2022a). Prolonged drought also weakens trees, making them more susceptible to disease and pest invasion. Furthermore, as trees die due to disease and pest invasion (e.g., the Bark Beetle invasion of the Angeles National Forest), wildfires can spread more rapidly.

4.1.2.6 Transportation and Energy Infrastructure

Higher temperatures will require increased cooling, raising energy production demand. Higher temperatures also decrease the efficiency of distributing electricity and could lead to more power outages during peak demand. Climate changes would impact the effectiveness of California's transportation infrastructure as extreme weather events damage, destroy, and impair roadways and railways throughout the state causing governmental costs to increase as well as impacts to human life as accidents increase. Other infrastructure costs and potential impacts to life would increase due to the need to upgrade levees and other flood control devices throughout the state. Infrastructure improvement costs related to climate change adaptation are estimated in the tens of billions of dollars.

4.1.3 CARBON SEQUESTRATION

Carbon sequestration is the process by which plants absorb CO₂ from the atmosphere and store it in biomass like leaves and grasses. Agricultural lands, forests, and grasslands can all sequester carbon dioxide, or emit it. The key is to determine if the land use is emitting CO₂ faster than it is absorbing it. Young, fast-growing trees are particularly good at absorbing more than they release and are known as a sink. Agricultural resources often end up being sources of carbon release because of soil management practices. Deforestation contributes to carbon dioxide emissions by removing trees, or carbon sinks, that would otherwise absorb CO₂. Forests are a crucial part of sequestration in some parts of the world, but not much in the United States. Another form of sequestration is geologic sequestration. This is a manmade process that results in the collection and transport of CO₂ from industrial emitters (i.e., power plants) and injecting it into underground reservoirs.

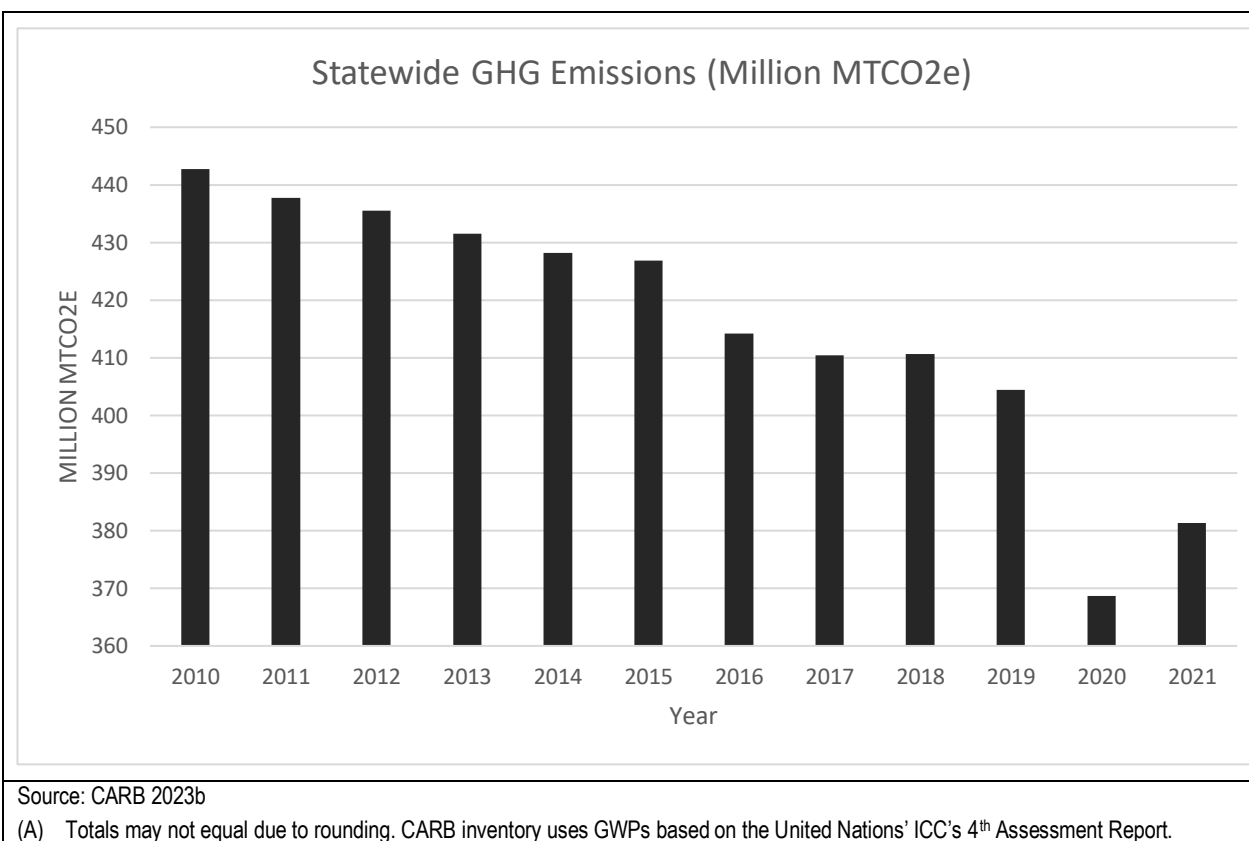
4.2 EXISTING STATE GHG EMISSIONS LEVELS

CARB prepares an annual statewide GHG emissions inventory using regional, state, and federal data sources, including facility-specific emissions reports prepared pursuant to the state's Mandatory GHG Reporting Program (see Section 4.3.2). The statewide GHG emissions inventory helps CARB track progress towards meeting the state's AB 32 GHG emissions target of 431 million metric tons of CO₂ equivalents (MTCO_{2e}), as well as establish and understand trends in GHG emissions. CARB approved use of 431 million MCO_{2e} as the state's 2020 GHG emission target in May 2014. Previously, the target had been set at 427 million MCO_{2e}.

Statewide GHG emissions for the 2010 to 2021 time period are shown in Table 4-2. CARB considers the decrease from 2019 to 2020 an anomaly that is likely due to the impacts of the COVID-19 pandemic (CARB 2022b). GHG emissions from 2020 are therefore not considered in this analysis. Statewide GHG emissions have generally decreased over the last decade, with 2021 levels (381 million MTCO_{2e}) approximately 13.9% less than 2010 levels (443 million MTCO_{2e}) and below the State's 2020 reduction target of 431 million MTCO_{2e}. The transportation sector (146 million MTCO_{2e}) accounted for more than one-third (approximately 38%) of the state's total GHG emissions inventory (381 million MTCO_{2e}) in 2021.

Table 4-2: 2010 – 2021 Statewide GHG Emissions (Million MTCO_{2e})

Scoping Plan Sector	Year											
	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21
Agriculture	34	34	35	34	34	33	32	32	32	31	32	31
Commercial/Residential	46	46	39	39	36	37	38	38	38	41	39	39
Electric Power	90	89	99	94	90	86	71	64	65	60	60	62
High GWP	14	15	16	17	18	19	19	20	21	21	21	21
Industrial	88	86	81	83	85	83	81	81	82	81	73	74
Recycling and Waste	8	8	8	8	8	8	8	8	8	8	9	8
Transportation	163	159	157	157	158	161	165	166	165	162	136	146
Total Million MTCO _{2e} ^(A)	443	438	436	432	428	427	414	410	411	404	369	381



4.3 FEDERAL, STATE, AND LOCAL CLIMATE CHANGE REGULATIONS

4.3.1 FEDERAL GHG REGULATIONS

4.3.1.1 U.S. EPA GHG Tailoring Rule and GHG Reporting System

On December 7, 2009, the U.S. EPA issued an endangerment finding that current and projected concentrations of the six Kyoto GHG (CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs) in the atmosphere threaten the public health and welfare of current and future generations. This finding came in response to the Supreme Court ruling in *Massachusetts v. EPA*, which found that GHG are pollutants under the federal Clean Air Act. As a result, the U.S. EPA issued its GHG Tailoring Rule in 2010, which applies to facilities that have the potential to emit more than 100,000 MTCO₂e. In 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA* (No. 12-1146), finding that the U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a permit pursuant to the Clean Air Act's Prevention of Significant Deterioration or Title V operating permit programs. The U.S. EPA's Greenhouse Gas Reporting Program requires facilities that emit 25,000 MTCO₂e or more of GHG to report their GHG emissions to the U.S. EPA to inform future policy decisions.

4.3.1.2 SAFE Vehicles Rule

On September 27, 2019, the U.S. EPA and the NHTSA published the SAFE Vehicles Rule Part One: One National Program." (84 Fed. Reg. 51,310 (Sept. 27, 2019)). The Part One Rule revoked California's authority to set its own GHG emissions standards and set zero emission vehicle mandates in

California. As a result of the loss of the ZEV sales requirements in California, there may be fewer ZEVs sold and thus additional gasoline-fueled vehicles sold in future years (CARB, 2019).

In April 2020, the U.S. EPA and NHTSA issued the SAFE Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (Final SAFE Rule) that relaxed federal greenhouse gas emissions and fuel economy standards. The Final SAFE Rule relaxed federal greenhouse gas emissions and Corporate Average Fuel Economy (CAFE) standards to increase in stringency at approximately 1.5 percent per year from model year (MY) 2020 levels over MYs 2021–2026. The previously established emission standards and related “augural” fuel economy standards would have achieved approximately 4 percent per year improvements through MY 2025. The Final SAFE Rule affects both upstream (production and delivery) and downstream (tailpipe exhaust) CO₂ emissions (CARB 2020) and has been challenged by 23 states. NHTSA repealed and the U.S. EPA rescinded the SAFE Rule Part One in December 2021 and March 2022, respectively, restoring California’s authority to implement its GHG standards and ZEV mandates (NHTSA 2022, U.S. EPA 2022c).

4.3.2 STATE CLIMATE CHANGE REGULATIONS

4.3.2.1 Executive Order S-3-05

Executive Order S-3-05 was issued by California Governor Arnold Schwarzenegger and established targets for the reduction of greenhouse gas emission at the milestone years of 2010, 2020, and 2050. Statewide GHG emissions must be reduced to 1990 levels by year 2020 and by 80 percent beyond that by year 2050. The Order requires the Secretary of the California Environmental Protection Agency (Cal-EPA) to coordinate with other State departments to identify strategies and reduction programs to meet the identified targets. A Climate Action Team (CAT) was created and is headed by the Secretary of Cal-EPA who reports on the progress of the reduction strategies. The latest CAT Biennial Report to the Governor and Legislature was completed in April 2016.

4.3.2.2 Assembly Bill 32 – California Global Warming Solutions Act and Related GHG Reduction Goals

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Climate Solutions Act of 2006. AB 32 establishes the caps on Statewide greenhouse gas emissions proclaimed in Executive Order S-3-05 and established the timeline for meeting State GHG reduction targets. The deadline for meeting the 2020 reduction target is December 31, 2020.

As part of AB 32, CARB determines 1990 GHG emissions levels and projected a “business-as-usual” (BAU)⁹ estimate for 2020, to determine the amount of GHG emission reductions that would need to be achieved. In 2007, CARB approved a Statewide 1990 emissions level and corresponding 2020 GHG emissions limit of 427 million MTCO_{2e} (CARB, 2007). In 2008, CARB adopted its Climate Change Scoping Plan, which projects 2020 Statewide GHG emissions levels of 596 million MTCO_{2e} and identifies numerous measures (i.e., mandatory rules and regulations and voluntary measures) that will achieve at least 174 million MTCO_{2e} of GHG reductions and bring Statewide GHG emissions to 1990 levels by 2020 (CARB, 2009).

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this

⁹ BAU is a term used to define emissions levels without considering reductions from future or existing programs or technologies.

ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase renewable electricity to 50 percent.
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner.
- Reduce petroleum use in cars and trucks by up to 50 percent.
- Reduce emissions of short-lived climate pollutants.
- Manage farms, rangelands, forests and wetlands to increasingly store carbon.

By directing State agencies to take measures consistent with their existing authority to reduce GHG emissions, Executive Order B-30-15 establishes coherence between the 2020 and 2050 GHG reduction goals set by AB 32 and seeks to align California with the scientifically established GHG emissions levels needed to limit global warming below two degrees Celsius.

To reinforce the goals established through Executive Order B-30-15, Governor Brown went on to sign SB 32 and AB 197 on September 8, 2016. SB 32 made the GHG reduction target (to reduce GHG emissions by 40 percent below 1990 levels by 2030) a requirement, as opposed to a goal. AB 197 gives the Legislature additional authority over CARB to ensure the most successful strategies for lowering emissions are implemented, and requires CARB to, “protect the State’s most impacted and disadvantaged communities ...[and] consider the social costs of the emissions of greenhouse gases.”

On September 16, 2022, Governor Newsom signed into law AB 1279, the California Climate Crisis Act, that codified California’s 2045 carbon neutrality goal and established a GHG emission reduction target of 85% below 1990 levels.

Scoping Plan

The CARB Scoping Plan is the comprehensive plan primarily directed at identifying the measures necessary to reach the GHG reduction targets stipulated in AB 32. The key elements of the 2008 Plan were to expand and strengthen energy efficiency programs, achieve a Statewide renewable energy mix of 33 percent, develop a cap-and-trade program with other partners (including seven States in the United States and four territories in Canada) in the Western Climate Initiative, establish transportation-related targets, and establish fees (CARB, 2009). CARB estimated that implementation of these measures will achieve at least 174 million MTCO₂e of reductions and reduce Statewide GHG emissions to 1990 levels by 2020 (CARB, 2009).

On February 10, 2014, CARB released the public draft of the “First Update to the Scoping Plan.” “The First Update” built upon the 2008 Scoping Plan with new strategies and recommendations, and identified opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. “The First Update” defined CARB’s climate change priorities over the next five years, and set the groundwork to reach post-2020 goals set forth in Executive Orders S-3-05 and B-16-12. It also highlighted California’s progress toward meeting the 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. “The First Update” evaluated how to align the State’s long-term GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. “The First Update” to the Scoping Plan was approved by the Board on May 22, 2014.

The second update to the scoping plan, the *2017 Climate Change Scoping Plan Update* (CARB, 2017a), was adopted by CARB in December 2017. The primary objective for the *2017 Scoping Plan Update* is to identify the measures required to achieve the mid-term GHG reduction target for 2030 (i.e., reduce emissions by 40 percent below 1990 levels by 2030) established under Executive Order B-30-15

and SB 32. The *2017 Scoping Plan Update* identifies an increased need for coordination among State, Regional, and local governments to realize the potential for GHG emissions reductions that can be gained from local land use decisions.

The third update to the scoping plan, the *2022 Scoping Plan* (CARB 2022a), was released in May 2022 and adopted by CARB in December 2022. The plan presents a scenario for California to meet the State goal of reducing GHG emissions 40% below 1990 levels by 2030 and to achieve carbon neutrality by 2045 (CARB 2022a). Specifically, the *2022 Scoping Plan*:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands (NWL) to the state's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies upon the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

Unlike the previous scoping plans, the *2022 Scoping Plan* relies more heavily on the implementation, adoption, and use of existing technologies to reduce GHG emissions over the coming decades, as opposed to technologies that need to be developed. Examples of existing technologies the *2022 Scoping Plan* relies upon include the use of renewable energy and energy storage systems (as opposed to polluting alternatives) for the electrical grid and transitioning the transportation sector's mobile sources to zero-emission technologies for light- and heavy-duty vehicles. The *2022 Scoping Plan* also differs from its predecessors in that it takes into account carbon sources and sinks from California's NWL and identifies the need for active carbon capture and sequestration (CCS) technologies for some emissions sectors, such as petroleum refining and the production / processing of stone, clay, glass, and cement.

The continued implementation of existing plans, policies, and regulations adopted for the purposes of reducing GHG emissions remain critical for achieving the State's 2030 and 2045 GHG reduction goals. For example, the *2022 Scoping Plan* identifies a goal of achieving a per capita VMT reduction of at least 25 percent below 2019 levels by 2030 and a 30 percent below 2019 levels by 2045, which is related to the implementation of SB 375 and recommendations provided by the Scoping Plan's Environmental Justice Advisory Committee. The *2022 Scoping Plan* also acknowledges that, "local governments are also frequently the sources of innovative and practical climate solutions that can be replicated in other areas. Their efforts to reduce GHG emissions within their jurisdictions are vital to achieving the state's near-term air quality and long-term climate goals... and can also provide important co-benefits such as improved air quality, local economic benefits, healthier and more sustainable communities, and improved quality of life."

4.3.2.3 Low Carbon Fuel Standard Regulation

CARB initially approved the LCFS regulation in 2009, identifying it as one of the nine discrete early action measures in the *2008 Scoping Plan* to reduce California's GHG emissions. The LCFS regulation is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. The LCFS regulation defines a Carbon Intensity, or "CI," reduction target (or standard) for each year, which the rule refers to as the "compliance schedule."

The LCFS regulation initially required a reduction of at least 10 percent in the CI of California's transportation fuels by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. The 2015 rulemaking included many amendments, updates, and improvements to the program, including a compliance schedule that maintained the 2009 LCFS regulation's target of a 10 percent reduction in average carbon intensity by 2020 from a 2010 baseline. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector (CARB, 2020).

4.3.2.4 Title 24 Energy Standards

See Section 3.2.2.1.

4.3.2.5 Senate Bill 375 – Sustainable Communities and Climate Protection Act

See Section 3.2.2.

4.3.2.6 Renewables Portfolio Standard (RPS) Program

See Section 3.2.2.5.

4.3.2.7 Sustainable Freight Plan

See Section 3.2.2.8.

4.3.2.8 Advanced Clean Trucks Program

See Section 3.2.2.9.

4.3.2.9 Advanced Clean Cars Program

See Section 3.2.2.8.

4.3.2.10 Water Conservation in Landscaping Act

Section 65591 of the Government Code requires all local jurisdictions to adopt a water efficient landscape ordinance. The ordinance is to address water conservation through appropriate use and grouping of plants based on environmental conditions, water budgeting to maximize irrigation efficiency, storm water retention, and automatic irrigation systems. Failure to adopt a water efficiency ordinance requires a local jurisdiction to enforce the provisions of the State's model water efficiency ordinance. In

2009, the Department of Water Resources updated the Model Water Efficient Landscape Ordinance pursuant to amendments to the 1991 Act. These amendments and the new model ordinance went into effect on January 1, 2010. The amended Act is applicable to any new commercial, multi-family, industrial or tract home project containing 2,500 square feet or more of landscaping. Individual landscape projects of 5,000 square feet or more on single-family properties will also be subject to the Act. All landscape plans are required to include calculations verifying conformance with the maximum applied water allowance and must be prepared and stamped by a licensed landscape architect.

4.3.2.11 Biological Diversity v. California Department of Fish and Wildlife

In its decision in *Center for Biological Diversity v. California Dep't of Fish and Wildlife* (Newhall) 62 Cal.4th 204 (2015), the California Supreme Court set forth several options that lead agencies may consider for evaluating the cumulative significance of a proposed Project's GHG emissions:

1. A calculation of emissions reductions compared to a BAU scenario based upon the emissions reductions in CARB's Scoping Plan, including examination of the data to determine what level of reduction from BAU a new land use development at the proposed location must contribute in order to comply with statewide goals.
2. A lead agency might assess consistency with AB 32's goals by looking to compliance with regulatory programs designed to reduce GHG emissions from particular activities.
3. Use of geographically specific GHG emission reduction plans to provide a basis for tiering and streamlining of project-level CEQA analysis.
4. A lead agency may rely on existing numerical thresholds of significance for GHG emissions, though use of such thresholds is not required.

4.3.3 CITY OF MENIFEE GENERAL PLAN

The City of Menifee adopted its General Plan in 2013. The Open Space and Conservation Element of the 2013 General Plan contains the following policies related to GHG emissions that may be applicable to the project.

Goal OSC-10: An environmentally aware community that is responsive to changing climate conditions and actively seeks to reduce local greenhouse gas emissions.

- **OCS-10.1:** Align the city's local GHG reduction targets to be consistent with the statewide GHG reduction target of AB 32.
- **OCS-10.2:** Align the city's long-term GHG reduction goal consistent with the statewide GHG reduction goal of Executive Order S-03-05.
- **OCS-10.3:** Participate in regional greenhouse gas emission reduction initiatives.
- **OCS-10.4:** Consider impacts to climate change as a factor in evaluation of policies, strategies, and projects.

See Section 3.2.3 policies related to energy consumption that would also be applicable to GHG emissions.

5 ENERGY IMPACT ANALYSIS

This chapter evaluates the direct and indirect energy impacts that could result from implementation of the proposed Project.

5.1 THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project could result in potentially significant impacts related to energy resources if it would:

- Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

5.2 ENERGY QUANTIFICATION METHODOLOGY

Implementation of the proposed Project would result in the consumption of electricity, natural gas, and petroleum fuels during construction and operation of the business park land uses. This section describes the methodologies used to estimate potential energy construction associated with the proposed Project. A summary of the methodologies used to estimate the proposed Project's energy consumption is shown in Table 5-1.

Table 5-1: Summary of Energy Quantification Methodologies		
Consumption Source	Methodology	Key Data Inputs
Heavy-Duty Off-Road Construction Equipment	CalEEMod and Carl Moyer Program Emission Factors	Size of Project Site, Size and Type of Proposed Structure
Off-site Vehicle Trips during Construction	CalEEMod and EMFAC2021	Vehicle Classification, Fuel Type, Number of Trips, and Trip Distance
Operational Electricity and Natural Gas	CalEEMod	Size and Type of Proposed Structure, Climate Zone, and Energy Efficiency
Operational Mobile Sources	CalEEMod and EMFAC2021	Vehicle Classification, Fuel Type, Number of Trips, and Trip Distance

5.2.1 CONSTRUCTION

Implementation of the proposed Project would increase the demand for petroleum-based fuel during construction. Both on- and off-site equipment would be powered by gasoline, diesel, and/or electric fuels.

5.2.1.1 Heavy-Duty Off-Road Construction Equipment

Heavy-duty, off-road construction equipment (e.g., bulldozers, loaders, etc.) would consume diesel fuel during construction of the proposed Project. The project's on-site diesel fuel consumption was estimated using the type, quantity, and runtime of equipment generated by CalEEMod and multiplying

through by a fuel consumption factor contained in the CARB *Carl Moyer Program Guidelines (2017 Revisions)* (CARB, 2017b; Table D-21). Please refer to Appendix B, Sheet 2 for a breakdown of fuel consumption by phase and equipment type.

5.2.1.2 Off-Site Vehicle Trips

Gasoline, diesel, and electricity would be consumed by construction workers commuting to and from the project site, as well as vendor deliveries and haul trucks used to remove debris from the site during the demolition phase and export soil from the site during the grading phase. Petroleum and electricity consumption from these trip types were estimated by deriving an average fuel consumption rate for various vehicle types in CARB Emission FACTor (EMFAC) Model 2021 (v1.0.2) vehicle classifications operating in Riverside County (for year 2025) and multiplying them by the number of trips accounted for in CalEEMod. Worker trips were assumed to be a mix of light duty autos (LDA) and light-duty trucks (LDT1 and LDT2). Vendor trips were assumed to be a mix of medium heavy-duty trucks (MHDT) and HHDT. Please see Appendix B, Sheet 3 for a breakdown of fuel consumption information by trip type.

5.2.2 OPERATIONAL

5.2.2.1 Electricity and Natural Gas

Electricity and natural gas emissions from project operation were estimated using CalEEMod, V. 2022.1.1.25. The consumption estimates are based on default model assumptions based on the industrial park building square footage that would be accommodated by the proposed Project (i.e., approximately 337,000 square feet), CEC electricity demand forecast zone (Zone 11), and building systems energy efficiency requirements. The CalEEMod default electricity rate was set to 2026 forecasted factors to reflect the project's first year of operation.

5.2.2.2 Mobile Sources

Mobile source consumption estimates were generated using consumption factors derived from CARB's EMFAC Model 2021 (v1.0.2) and annual vehicle miles traveled (VMT) as estimated in CalEEMod, which reflect the daily trip generation for the site (i.e., 1,751 trips per day) as detailed in the Trip Generation Assessment prepared for the project by Ganddini and shown in Table 2-1 (Ganddini 2024). Estimates of petroleum consumption were then generated by multiplying the annual VMT estimate by a weighted fuel consumption factor by their respective vehicle categories. Worker and customer trips to and from the site (passenger cars) were assumed to be a blend of Light Duty Auto (LDA) and Light Duty Trucks LDT1/LDT2). Truck trips were assumed to be a blend and Light Heavy-Duty Trucks (LHDT1/LHDT2), Medium Heavy-Duty Trucks (MHDT), and Heavy Heavy-Duty Trucks (HHDT) for 2-, 3-, and 4- axle trucks, respectively. This provides a conservative estimate of mobile source fuel consumption, as it does not take into account the existing trips to the site that would no longer occur with the implementation of the project.

The proposed Project's trip generation rates are shown in Table 2-1. Refer to Section 6.2.2 for mobile source trip length assumptions. Refer to Appendix B, Sheet 4 for detailed mobile source fuel consumption estimate calculations.

5.3 WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES

Implementation of the project would increase the demand for energy at the project site during construction and operation. However, the proposed buildings would be designed to current CalGreen Code

requirements, and the energy consumption associated with development activities would be necessary. The proposed Project would not use energy in a wasteful, inefficient, or unnecessary manner.

5.3.1 CONSTRUCTION

5.3.1.1 Electricity

Electric power would be required for lighting and electronic equipment (e.g., computers) located in trailers used by the construction crew. In addition, the project would consume electricity through workers that may use electric vehicles to drive to and from the site. Project construction is estimated to require approximately 3,150 kWh of electricity for worker trips and vendor trips. However, the electricity used would be temporary and would have a negligible contribution to the project's overall energy consumption.

5.3.1.2 Natural Gas

Natural gas consumption is not anticipated during construction of the project. Fuels used for construction would generally consist of diesel and gasoline, which are discussed in the next subsection. Any amount of natural gas that may be consumed during project construction would be nominal and would have a negligible contribution to the project's overall energy consumption.

5.3.1.3 Diesel and Gasoline Fuel

Diesel and gasoline fuels, also referred to as petroleum in this subsection, would be consumed throughout construction of the project. Fuel consumed by construction equipment would be the primary energy resource consumed over the course of construction, and VMT associated with the transportation of construction materials (e.g., deliveries to the site) and worker trips to and from the site would also result in petroleum consumption. Whereas on-site, heavy-duty construction equipment and delivery trucks would predominantly use diesel fuel, construction workers would generally rely on gasoline-powered vehicles to commute to and from the project site.

The operation of heavy-duty, off-road equipment associated with project construction would consume approximately 58,505 gallons of diesel fuel. Worker, vendor, and hauling trips associated with project construction are estimated to consume approximately 62,337 and 41,180 gallons of gasoline and diesel fuel, respectively. In total, project construction is estimated to require approximately 62,337 gallons of gasoline and 99,685 gallons of diesel.

On- and off-road petroleum-powered vehicles/equipment would be subject to various rules and regulations. Off-road equipment at the site would also be required to comply with CARB's Airborne Toxic Control Measures, which restricts heavy-duty diesel vehicle idling to five minutes. In addition, the efficiency of petroleum use is related to numerous other state-wide regulations and programs, such as the LCFS (on- and off-road vehicles/equipment), ACC Program (on-road passenger vehicles), and ACT Program (on-road trucks). Since petroleum use during construction would be temporary and is a necessary component when conducting development activities, it would not be wasteful or inefficient.

5.3.2 OPERATION

5.3.2.1 Electricity

During operation of the new business park, the project would consume electricity from appliance operation, general building systems (e.g., lighting, HVAC equipment), and outdoor lighting. Based on estimates generated by CalEEMod, the proposed Project would consume approximately 6,385,552 kWh

per year of electricity. The proposed Project would be required to comply with the standards contained in the CalGreen Code (i.e., Part 11 of the Title 24 Building Code) that requires the buildings constructed at the site meet energy efficiency standards that improve upon those from previous years.

Electricity would also be consumed by the operation of electric vehicles by future workers and customers traveling to and from the site. As estimated in CalEEMod, based on the trip generation rates and trip distances provided for in the Ganddini traffic memorandum / SCAQMD guidance document, the proposed Project is anticipated to generate approximately 19,706,671 VMT on an annual basis. The average fuel economies and vehicle fleet mix attributable to the proposed Project were used to estimate the amount of electricity consumed from vehicle trips associated with the proposed Project. The project is estimated to consume approximately 352,093 kWh of electricity from on-road fuel consumption on an annual basis (see Appendix B).

The proposed Project would also indirectly benefit from other, regulatory actions taken at the state level. For example, SB 100 requires 60% of the power purchased by California come from renewable sources by 2030. SB 100 further requires all retail electricity be carbon-free by 2045. Based on these state-wide mandates, electricity consumed at the site will become more and more green (e.g., not requiring the burning of fossil fuels), which will lead to the more efficient use of energy resources.

Although electricity would increase at the site under implementation of the project, the proposed facility would be designed to the 2022 Title 24 Building Code standards, and benefit from other actions taken at the State level. For these reasons, the electricity consumed by the project is not considered to be inefficient or wasteful.

5.3.2.2 Natural Gas

Natural gas consumption would be required during operation of the project for various purposes, such as heating water, building HVAC, and potentially some manufacturing operations. Based on estimates generated by CalEEMod, the proposed Project would consume approximately 9,317,944 kBtu per year of natural gas. Although natural gas consumption would still occur at the site under implementation of the project, the building envelope, HVAC, lighting, and other systems, it would comply with the energy efficiency requirements outlined in the 2022 Title 24 Building Code. For this reason, the natural gas that would be consumed by the project is not considered to be inefficient or wasteful.

5.3.2.3 Gasoline and Diesel Fuels

Gasoline and diesel would be consumed during operation of the proposed Project. Both forms of petroleum fuel would be consumed from future workers and customers traveling to and from the site. As estimated in CalEEMod, based on the trip generation rates and trip distances provided for in the Ganddini traffic memorandums / SCAQMD guidance document, the proposed Project is anticipated to generate approximately 19,706,671 VMT on an annual basis. Based on the average fuel economies and vehicle fleet mix attributable to the proposed Project, vehicle trips associated with the proposed Project are estimated to consume approximately 649,603 and 272,151 gallons of gasoline and diesel, respectively, on an annual basis. These fuel consumption estimates are based on vehicle efficiency in 2026, and would decrease in future years as trucks become more fuel efficient and ZEV trucks are more commonly available and used within Riverside County.

There are numerous regulations in place that require and encourage fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes

efforts to support and accelerate the number of plug-in hybrids and ZEVs in California. In addition, per the requirements identified in SB 375, CARB adopted a regional goal for the SCAG region of reducing per-capita GHG emissions from 2005 levels by 8% by 2020 and 19% by 2035 for light-duty passenger vehicles. The SB 375 goal would help reduce emissions from worker and customers trips at the site. The proposed Project would also benefit from actions taken at the state level with regard to the ACT Program and Sustainable Freight Plan. The implementation of these programs will help reduce the number of diesel trucks on California roadways and improve the fuel efficiency of those diesel trucks that remain in operation. Accordingly, operation of the project is expected to decrease the amount of petroleum it consumes in the future due to advances in fuel economy.

Although the project would increase petroleum use in the region during construction and operation, the use would be a small fraction of the statewide use, and would have its overall fuel consumption decrease over time. As such, petroleum consumption associated with the project would not be considered inefficient or wasteful.

5.4 CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY

The proposed Project would not conflict with nor obstruct a state or local plan adopted for the purposes of increasing the amount of renewable energy or energy efficiency. As discussed above, the project would be subject to the California Title 24 Building Code energy efficiency standards for non-residential buildings, which would help reduce energy consumption. Equipment and vehicles associated with construction and operation of the project would also be subject to fuel standards at the state and federal level. The project would inherently benefit from programs implemented to achieve the goals of the Sustainable Freight Plan, such as the turnover of older, less fuel-efficient trucks, as fuel economy standards are rolled out and ZEV trucks becomes more widely available and cost effective for business. The project would not conflict with nor obstruct a state or local plan for renewable energy or energy efficiency.

This page intentionally left blank.

6 GREENHOUSE GAS IMPACT ANALYSIS

This chapter evaluates the GHG impacts that could result from implementation of the proposed Project. Unlike air quality, which is influenced by local and regional factors and is therefore considered on the local or regional scale, the effects of global climate change are the result of GHG emissions worldwide; individual projects do not generate enough GHG emissions to influence global climate change. Thus, the analysis of GHG emissions is by nature a cumulative analysis focused on whether an individual project's contribution to global climate change is cumulatively considerable.

6.1 THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project could result in potentially significant GHG impacts if it would:

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

In order to provide guidance to local lead agencies on determining the significance of GHG emissions in their CEQA documents, the SCAQMD convened the first GHG Significance Threshold Working Group (Working Group) meeting on April 30, 2008. To date, the Working Group has convened a total of 15 times, with the last meeting taking place on September 28, 2010. Based on the last Working Group meeting, the SCAQMD identified an interim, tiered approach for evaluating GHG emissions intent on capturing 90 percent of development projects where the SCAQMD is not the lead agency. The following describes the basic structure of the SCAQMD's tiered, interim GHG significance thresholds (SCAQMD, 2010):

- Tier 1 consists of evaluating whether or not the project qualifies for applicable CEQA exemptions.
- Tier 2 consists of determining whether or not a project is consistent with a greenhouse gas reduction plan. If a project is consistent with a greenhouse gas reduction plan, it would not have a significant impact.
- Tier 3 consists of using screening values at the discretion of the Lead Agency; however, the Lead Agency should be consistent for all projects within its jurisdiction. The following thresholds were proposed for consideration:
 - 3,000 MTCO₂e per year for all land use types; or
 - 3,500 MTCO₂e per year for residential; 1,400 MTCO₂e per year for commercial; 3,000 MTCO₂e per year for mixed use projects.
- Tier 4 has three options for projects that exceed the screening values identified in Tier 3:
 - Option 1: Reduce emissions from business-as-usual by a certain percentage (currently undefined); or
 - Option 2: Early implementation of applicable AB 32 Scoping Measures; or
 - Option 3: For plan-level analyses, analyze a project's emissions against an efficiency value of 6.6 MTCO₂e/year/service population by 2020 and 4.1 MTCO₂e/year/service population by 2035.

For project-level analyses, analyze a project's emissions against an efficiency value of 4.8 and 3.0 MTCO₂e/year/service population for the 2020 and 2035 calendar years, respectively.

This analysis uses the SCAQMD's 3,000 MTCO₂e interim Tier 3 GHG threshold to evaluate the proposed Project's GHG emissions levels.

6.2 GHG EMISSIONS QUANTIFICATION METHODOLOGY

The construction and operation of the proposed Project would generate GHG emissions. This section describes the project's emissions sources and the methodologies used to estimate potential project emissions levels. A summary of the methodologies used to estimate the proposed Project's potential GHG emissions levels is shown in Table 6-1.

Table 6-1: Summary of Emissions Quantification Methodologies		
Emissions Source	Methodology	Key Data Inputs
Construction Activities	CalEEMod	Size of Project Lot
Area, Energy, Water and Wastewater, and Solid Waste Sources	CalEEMod	Size and Type of Proposed Structure, Climate Zone, and Energy Efficiency
Mobile Sources	CalEEMod	Number of Trips and Trip Distance

6.2.1 CONSTRUCTION EMISSIONS

Construction of the proposed Project would generate equipment exhaust and dust emissions from demolition activities, ground disturbing activities such as site preparation and grading, and the use of gasoline- and diesel-fuel combustion in on- and off-site heavy duty construction equipment, worker vehicle trips, vendor vehicle trips, and haul truck trips, ground disturbing activities. The proposed Project's potential construction emissions were modeled using CalEEMod, Version 2022.1.1.25. The project's construction activities, duration, and typical equipment used during construction are shown in Table 2-2. The construction phases, duration, and the type and amount of equipment used during construction was generated using CalEEMod default assumptions, and modified to reflect the following project-specific characteristics:

- **Land Use Development:** The acreage and square footage of the business park and parking land uses were modeled to reflect project conditions. The parking lot was modeled as a larger area than the project's approximate 667 parking spaces to account for all paved surfaces such as driveways and to include landscaped area.
- **Demolition and Soil Hauling:** The model was modified to include 3,000 square feet of building demolition for the removal of the single-family residence, and 2,000 cubic yards of material exported during the grading phase.
- **Rule 403 Fugitive Dust Abatement:** The model was updated to reflect compliance with the watering requirements of SCAQMD Rule 403 during construction activities.

6.2.2 OPERATIONAL EMISSIONS

Once operational, the proposed Project would generate GHG emissions from the following sources:

- **Small “area” sources** including landscaping equipment and the use of consumer products such as paints, cleaners, and fertilizers that result in the evaporation of chemicals to the atmosphere during product use.
- **Energy use** in the form of natural gas combustion for building water and space heating needs.
- **Mobile sources** including trips made to and from the site by new employees and truck trips.

Similar to construction emissions, emissions from operational activities were estimated in CalEEMod, Version 2022.1.1.25 based on default model assumptions, with the following modifications made to reflect project-specific characteristics:

- **Mobile Sources:**
 - **Trip Generation Rates:** The default weekday and weekend trip generation rate for the proposed land use were updated to reflect the trip generation rate (i.e., 1,751 trips per day) provided in the Trip Generation Assessment prepared for the project (Ganddini 2024; see Table 2-1).
 - **Trip Type and Distance:** Passenger vehicle trips (approximately 87.8% of all trips) used a trip distance of 30.7 miles per trip, based on the Western Riverside Council of Government’s VMT Screening Tool, as included in the project’s Traffic Scoping Agreement (Ganddini 2024). A weighted trip distance was developed for truck trips (12.2% of all trips) based on trip lengths of 15.3, 14.2, and 39.9 miles per trip for 2-, 3-, and 4-axle truck trips respectively (SCAQMD 2021). The weighted truck trip distance for this project is approximately 31.8 miles per trip, based on the project’s truck trip generation identified in the project’s Traffic Scoping Agreement and modifications made to account for trip generation associated with the portion of the site assumed to have trip generation characteristics similar to the “Business Park” land use in the Institute of Transportation Engineers (ITE) Trip Generation Handbook (Ganddini 2024; see Table 2-1).
 - **Vehicle Mix:** The default vehicle mix was updated to match the trip types identified in the project’s Trip Generation Assessment:
 - **Passenger Vehicles** were assumed to be a blend of light duty auto (LDA), light duty truck (LDT), medium duty vehicles (MDV), and motorcycles (MCY). The percent of these vehicle types utilized for the proposed Project are based on CalEEMod defaults and averaged to reflect the number of passenger vehicle trips generated by the proposed Project (87.8% of all project trips).
 - **Trucks** were assumed to be a blend of Light-Heavy Duty (LHD) trucks (2-axle), Medium-Heavy Duty (MHD) trucks (3-axle), and Heavy-Heavy Duty (HHD) Trucks. The specific percent assigned to each vehicle category is based on the breakdown provided in the Trip Generation Assessment (12.2% of all project trips, see Table 2-1).

6.3 GHG EMISSIONS

The proposed Project would generate GHG emissions from both short-term construction and long-term operational activities. As described in more detail below, the proposed Project would generate emissions that exceed the SCAQMD GHG interim threshold of 3,000 MTCO₂e per year.

Construction activities would generate GHG emissions primarily from equipment fuel combustion as well as worker, vendor, and haul trips to and from the project site during demolition, site preparation,

grading, building construction, paving, and architectural coating activities. Construction activities would cease to emit GHG upon completion, unlike operational emissions that would be continuous year after year until the project is decommissioned. Accordingly, the SCAQMD recommends amortizing construction GHG emissions over a 30-year period and including them with operational emissions estimates. This normalizes construction emissions so that they can be grouped with operational emissions and compared to appropriate thresholds, plans, etc. GHG emissions from construction of the proposed Project were estimated using CalEEMod, Version 2022.1.1.25, based on the anticipated construction schedule and construction activities described in Section 0. The proposed Project's total construction emissions, as estimated using CalEEMod V. 2022.1.1.25, are shown in Table 6-2.

Table 6-2: Project Construction GHG Emissions					
Year	Annual GHG Emissions (MT / Year)				
	CO₂	CH₄	N₂O	Refrigerant GHGs	TOTAL MTCO_{2e}
2025	764.3	<0.1	<0.1	0.5	775.7
2026	288.7	<0.1	<0.1	0.2	293.5
Total	1,053.1	<0.1	<0.1	0.7	1,069.2
Amortized GHG Estimate ^(A)	35.1	<0.1	<0.1	<0.1	35.6
Source: MIG, 2024 (see Appendix A)					
(A) Emissions are amortized over the life of the project, which is presumed to be 30 years.					

Once operational, the proposed Project would generate emissions of GHG from area, energy, mobile, water/wastewater, and solid waste sources. For a description of the methodology used to estimate emissions from these sources, see Section 6.2. The proposed Project's operational GHG emissions are shown in Table 6-3.

As shown in Table 6-3, the proposed Project's potential increase in unmitigated GHG emissions would exceed 3,000 MTCO_{2e} per year threshold. The primary source of the project's unmitigated GHG emissions (8,537 MTCO_{2e}, approximately 82% of overall emissions) would be attributable to mobile sources (i.e., passenger vehicles and truck trips).¹⁰ Building energy use is the second highest source of project GHG emissions, accounting for approximately 14% of operational GHG emissions.¹¹ All other sources together (area, waste, water, refrigerants, and amortized construction emissions) would generate less than 5% of the proposed Project's total GHG emissions. Individually, these other GHG emissions sources each contribute a small percentage of potential GHG emissions. For example, the third largest GHG emissions source is water, which accounts for approximately 2% of total GHG emissions.

As discussed above, the project would have the potential to generate GHG emissions that exceed SCAQMD thresholds. This is considered a **potentially significant impact**.

¹⁰ Approximately 5,248 MTCO_{2e} (61.5%) of the mobile source emissions would be from trucks, while the remaining 3,289 MTCO_{2e} (38.5%) would be attributable to passenger vehicles.

¹¹ Approximately 1,009 MTCO_{2e} (67.0%) of the energy emissions would be from electricity, while the remaining 496 MTCO_{2e} (38.5%) would be from natural gas.

Table 6-3: Unmitigated Project Operational GHG Emissions					
Emission Source	GHG Emissions (MT / Year)				
	CO₂	CH₄	N₂O	Refrigerant GHGs	CO₂e
Project Emissions					
Area	6.9	<0.1	<0.1	0.0	6.9
Energy	1,497.1	0.1	<0.1	<0.1	1,504.4
Mobile	8,343.2	0.2	0.6	11.9	8,537.0
Waste	37.4	3.7	0.0	0.0	130.7
Water	108.3	2.6	0.1	0.0	190.3
Refrigerants	0.0	0.0	0.0	14.6	14.6
Amortized Construction	35.1	<0.1	<0.1	<0.1	35.6
Site Subtotal ^(A)	10,028.0	6.6	0.7	26.4	10,419.5
Threshold of Significance					3,000
SCAQMD Interim Threshold or Project-specific Goal Exceeded?					Yes
Source: MIG 2024 (see Appendix A).					
(A) Totals may not equal due to rounding.					

To reduce the proposed Project's potential operational GHG emissions levels, MIG recommends the proposed Project incorporate Recommended Mitigation Measure GHG-1, Recommended Mitigation Measure GHG-2, Recommended Mitigation Measure GHG-3, and Recommended Mitigation Measure GHG-4.

Recommended Mitigation Measure GHG-1: Reduce Vehicle Trips through Transportation Demand Management. To reduce potential GHG emissions from mobile sources, the proposed Project would comply with the following Transportation Demand Management (TDM) measures to reduce mobile source trips, consistent with the recommendations in the Project's TDM Assessment (Ganddini 2025):

- Implement Commute Trip Reduction Program: This measure will implement a voluntary commute trip reduction (CTR) program with employers. CTR programs discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions.
 - Implement Commute Trip Reduction Marketing: This measure will implement a marketing strategy to promote the project site employer's CTR program. Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond driving such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions.
 - Provide Ridesharing Program: This measure will implement a ridesharing program and establish a permanent transportation management association with funding requirements for employers. Ridesharing encourages carpooled vehicle trips in place of single-occupied vehicle trips, thereby reducing the number of trips, VMT, and GHG emissions.

- **Implement Subsidized or Discounted Transit Program:** This measure will provide subsidized or discounted, or free transit passes for employees and/or residents. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving, increasing the total number of transit trips and decreasing vehicle trips. This decrease in vehicle trips results in reduced VMT and thus a reduction in GHG emissions.
- **Provide End-of-Trip Bicycle Facilities:** This measure will install and maintain end-of-trip facilities for employee use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers. The provision and maintenance of secure bike parking and related facilities encourages commuting by bicycle, thereby reducing VMT and GHG emissions.
- **Provide Employer-Sponsored Vanpool:** This measure will implement an employer-sponsored vanpool service. Vanpooling is a flexible form of public transportation that provides groups of 5 to 15 people with a cost-effective and convenient rideshare option for commuting. The mode shift from long-distance, single-occupied vehicles to shared vehicles reduces overall commute VMT, thereby reducing GHG emissions.
- **Provide Electric Vehicle Charging Infrastructure:** Install onsite electric vehicle chargers in an amount beyond what is required by the 2019 California Green Building Standards (CALGreen) at buildings with designated parking areas (e.g., commercial, educational, retail, multifamily). This will enable drivers of PHEVs to drive a larger share of miles in electric mode (eVMT), as opposed to gasoline-powered mode, thereby displacing GHG emissions from gasoline consumption with a lesser amount of indirect emissions from electricity. Most PHEVs owners charge their vehicles at home overnight. When making trips during the day, the vehicle will switch to gasoline mode if/when it reaches its maximum all-electric range.

Recommended Mitigation Measure GHG-2: Provide CALGreen Tier 2 EV Parking. To reduce potential GHG emissions from mobile sources, the proposed Project shall include EV parking spaces and infrastructure consistent with the Tier 2 provisions in the 2022 CALGreen Code, Appendix A5: Nonresidential Voluntary Measures, Section A5.106.5.1, Section A5.601.3.4(1)(a), and Section A5.601.3.4(1)(b). These provisions require the following:

- Provide a minimum of 50% of the parking capacity as designated parking for any combination of zero-emitting, high-efficiency, and carpool/vanpool vehicles. Comply with the provisions in CALGreen Code Section A5.106.5.1.4 for marking parking stalls as parking for clean air vehicles.
- EV charging that meets one of the two following provisions:
 - Consistent with CALGreen Table A5.106.5.3.3, 45% of parking spaces are required to be EV capable spaces (with infrastructure capable of supporting EV charging), and 33% of EV capable spaces are required to have EV charging stations installed; or

- Consistent with CALGreen Table A5.106.5.3.4, the project is required to meet a power level determined by the following equation: Total required power (kVA) = Number of Parking Spaces x 0.45 x 6.6¹²

Under either option, at least one Level 2 EV charging station would be required.

Recommended Mitigation Measure GHG-3: All-Electric Operation. To reduce potential GHG emissions from energy sources, the City shall require all building energy systems, equipment, and appliances be powered by electricity unless another form of energy is required, and a suitable all-electric alternative is technologically or economically infeasible for the tenant or the equipment is not commercially available. The proposed structures shall be dual-plumbed with electricity and natural gas, and tenants shall be able to use natural gas should they be able to demonstrate an all-electric alternative is unavailable or infeasible.

Recommended Mitigation Measure GHG-4: Provide PV Solar. To reduce GHG emissions associated with building energy, City shall require that the proposed buildings include PV solar panels on a minimum of 15% of the total roof area.

As discussed in the analysis above, mobile sources are the project's predominant source of GHG emissions, followed by energy sources. The mitigation measures above address the main sources of GHG emissions, with Recommended Mitigation Measure GHG-1 and Recommended Mitigation Measure GHG-2 reducing GHG emissions from mobile sources and Recommended Mitigation Measure GHG-3 and Recommended Mitigation Measure GHG-4 reducing emissions from energy sources.

The implementation of Recommended Mitigation Measure GHG-1 would reduce passenger vehicle trips by requiring future tenants to implement a TDM program. This measure would reduce GHG emissions by replacing trips made by gasoline-powered single-occupancy vehicles with commute options such as carpooling/vanpooling, transit, and active transportation. According to the TDM report, a 4.0% reduction is anticipated from the implementation of trip reduction program measures.

Recommended Mitigation Measure GHG-2 requires the site to comply with the CALGreen Voluntary Tier 2 EV parking requirements, which would increase the amount of clean vehicle parking and EV infrastructure beyond required baseline conditions. This measure would reduce GHG emissions by encouraging the use of zero-emitting, high-efficiency, and carpool/vanpool vehicles by providing additional parking for those types of vehicles. This measure also supports the use of EVs by supplying the necessary charging infrastructure to charge EVs, increasing the vehicle's capacity to travel longer distances after having charged at work. Decreasing the percentage of trips made by petroleum-powered vehicles and increasing the percentage of trips made by electric vehicles replaces the GHGs associated with burning petroleum with GHGs associated with electricity production, resulting in lower GHG emissions that would continue to decrease as California increases the share of carbon-free electricity in its electrical grid (See Section 3.2.2 above for State energy regulations and targets). While the implementation of Recommended Mitigation Measure GHG-2 would provide infrastructure for EVs, there is uncertainty about the effect this would have in replacing trips made by petroleum-powered vehicles with trips made by EVs. Due to the uncertainty in the number of vehicle trips that would be made in EVs, GHG reductions from Recommended Mitigation Measure GHG-2 were limited to the 2.3% reduction that was quantified in the TDM report for its recommended EV charging mitigation. Recommended Mitigation Measure GHG-2 would be more stringent

¹² A maximum of 75% of kVA can be allocated to EV capable spaces.

than the EV charging infrastructure requirements recommended in the TDM report, and therefore applying the reduction estimated for the TDM measure is considered conservative.

Recommended Mitigation Measure GHG-3 requires buildings to be powered by electricity, unless another form of energy is required. This measure has the potential to reduce GHG emissions by only allowing natural gas usage when electricity usage is infeasible. Natural gas consumption produces more GHG emissions than electricity consumption does, because California's electricity grid is using increasingly higher amounts of carbon-free sources of electricity. The implementation of Recommended Mitigation Measure GHG-3 could reduce GHG emissions by approximately 64 MTCO₂e/year, if all natural gas consumption was instead converted to electricity use, an approximate 4.3% reduction in the energy sector (based on the conditions anticipated during the site's first year of operation). As discussed above, emission levels from electricity would continue to decrease with time due to the State regulations. However, since it is possible that all-electric operations would not be available or feasible, it cannot be guaranteed that tenants would use only electricity. While the potential GHG reductions from Recommended Mitigation Measure GHG-3 are estimated, actual GHG reductions may be lower if tenants require natural gas usage.

Recommended Mitigation Measure GHG-4 would require the installation of solar panels on 15% of the rooftop area at the time of building construction. This measure builds upon the 2022 CALGreen Code requirement that 15% of the roof is solar-ready. With the implementation of Recommended Mitigation Measure GHG-4, GHG reductions from the use of renewable energy would occur at the start of project operations, as opposed to an undetermined future time. The installation of solar panels consistent with Recommended Mitigation Measure GHG-4 would produce an estimated 1,110,148 kWh/year of carbon-free electricity (NREL 2024).¹³ This would correspond with a GHG reduction of approximately 259 MT CO₂e/year, an approximate 17.2% GHG reduction in the energy sector.

The proposed Project's estimated emissions after taking into account the implementation of Recommended Mitigation Measures GHG-1, GHG-3, and GHG-4 are shown below.¹⁴

¹³ Energy production from solar panels was estimated using PVWatts Calculator, a National Renewable Energy Laboratory (NREL) tool. It was estimated using the project location and the approximate size of the solar panel area (4,305 m²), which was determined by taking 15% of the building footprint area.

¹⁴ These reduction estimates reflect a best-case scenario. Actual implementation of Recommended Mitigation Measures may result in a lesser reduction of GHG emissions.

Table 6-4: Mitigated Project Operational GHG Emissions					
Emission Source	GHG Emissions (MT / Year)				
	CO₂	CH₄	N₂O	Refrigerant GHGs	CO₂e
Project Emissions					
Area	6.9	<0.1	<0.1	0.0	6.9
Energy	1,431.5	0.1	<0.1	<0.1	1,439.8
Mobile ^(B)	7,825.9	0.2	0.6	11.1	8,007.7
Waste	37.4	3.7	0.0	0.0	131
Water	108.3	2.5	0.1	0.0	190
Refrigerants	0.0	0.0	0.0	14.6	14.6
Amortized Construction	35.1	<0.1	<0.1	<0.1	35.6
Site Subtotal ^(A)	9,409.9	6.6	0.6	25.7	9,790.0
Threshold of Significance					3,000
SCAQMD Interim Threshold or Project-specific Goal Exceeded?					Yes
Source: MIG 2024 (see Appendix A).					
(A) Totals may not equal due to rounding.					
(B) A 6.2% reduction was taken from the mobile source emissions modeled in CalEEMod, consistent with the TDM report's mitigation measures (Ganddini 2025).					

As shown in Table 6-4, the proposed Project's mitigated emissions would continue to exceed the SCAQMD 3,000 MTCO₂e threshold of significance, even if Recommended Mitigation Measures GHG-1, GHG-3, and GHG-4 were implemented to their fullest extent. Although Recommended Mitigation Measures GHG-1 through GHG-4 would reduce emissions from the two primary sources of emissions (i.e., building energy use and mobile sources), overall project emissions would continue to exceed the threshold by approximately 6,790 MT CO₂e per year. While Recommended Mitigation Measures GHG-1 and GHG-2 would reduce GHG emissions from mobile sources, they would target passenger vehicles instead of trucks, which emit the majority of mobile source GHG emissions.¹⁵ There are currently no feasible mitigation measures available that would definitively reduce GHG emissions from truck trips, because the project is a spec development, meaning that end-use tenants are not known. The emission profiles associated with future tenants would be dependent on their operations and the truck fleet that they employ. Given that truck trips contribute approximately 5,564 MT CO₂e to the project's total operational emissions, it would not be possible to reach a less-than-significant determination without reducing emissions from this portion of the project. Existing State regulations would decrease GHG emissions from truck trips over time, such as the Advanced Clean Trucks Program, which requires manufacturers to sell an increasing percentage of zero emission trucks through 2035 (See Section 3.2.2.9). While these future mobile source emission reductions cannot be incorporated into the current GHG emissions analysis, and will not affect the determination of significance, they would result in lower future project emissions than the levels quantified in this report.

¹⁵ Passenger vehicles account for approximately 38.5% of mobile source emissions and approximately 28.8% of total operational emissions, while trucks account for approximately 61.5% of mobile source and approximately 53.4% of total emissions.

Similarly, while Recommended Mitigation Measures GHG-3 and GHG-4 would reduce GHG emissions from energy sources, the overall GHG reduction is relatively small, due to the energy sector's lower contribution to GHG emissions compared to mobile sources. While Recommended Mitigation Measures GHG-3 and GHG-4 would result in an approximate 21.5% reduction of GHG emission in the energy sector, they would only result in an approximate 3.1% reduction of overall operational emissions. As with mobile source emissions, energy source emissions would continue to decrease with time as existing regulations (e.g., the Renewable Portfolio Standard, see Section 3.2.2.5), would result in lower future project emissions than the levels quantified in this report.

The above analysis indicates that the proposed Project's mitigated GHG emissions would continue to exceed SCAQMD thresholds. This impact would be **significant and unavoidable**.

6.4 CONSISTENCY WITH GHG REDUCTION PLANS

The proposed Project would not conflict with CARB's Scoping Plan, Sustainable Freight Plan, ACT Program, or regional RTP/SCS. The project's consistency with these plans is described in more detail below.

6.4.1 CARB SCOPING PLAN

As discussed under Section 4.3.2, the *2022 Climate Change Scoping Plan* is CARB's primary document used to ensure State GHG reduction goals are met. The *2022 Climate Change Scoping Plan's* primary objective is to identify the measures needed to achieve the 2030 reduction target established under SB 32 and have the state achieve carbon neutrality by 2045, as established by AB 1279. The major elements of the plan are generally geared toward actions either CARB or other state entities will pursue, such as, but not limited to:

- Creation and future implementation of the Carbon Capture, Removal, Utilization, and Storage Program required by SB 905.
- Reducing imbedded GHG emissions in supplied retail electricity by increasing the amount of electricity generated and supplied to the grid from renewable resources, consistent with the requirements identified in SB 100 and SB 1020 (i.e., 60% by 2030, 90% by 2035, 95% 2040, and 100% by 2045).
- Expansion of non-petroleum fueling stations across the state to support the transition to electric, hydrogen, and other alternatively-powered vehicles (e.g., through AB 2127 and SB 1075) while also increasing the use of mass transit, carpooling, and other trip reduction measures (e.g., through the implementation of SB 375).
- Leverage the capacity of California's natural and working lands to function as a sink for carbon emissions. Specifically, AB 1757 requires the CNRA, in collaboration with CARB, other state agencies, and an expert advisory committee, to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions, that reduce GHG emissions in 2030, 2038, and 2045. This is supported by SB 27, which requires CNRA to establish Natural and Working Lands Climate Smart Strategy, and for CARB to established specified CO₂ removal targets for 2030 and beyond.

Many of the measures identified in the *2022 Scoping Plan Update* are not applicable at the proposed Project's level; rather, the success of the plan primarily relies upon the State's actions to uphold and implement existing legislation and develop new plans and strategies to sequester, trap, and store emitted carbon emissions. Although most of these measures would be implemented at the State level, the

GHG reductions achieved by these state measures would be realized at the local level. For example, regardless of actions taken by the City of Menifee or County of Riverside, emissions generated through gasoline combustion in motor vehicles within the city and the county would produce fewer GHG emissions in 2030 than they do now. Similarly, the electricity consumed by on-site sources (e.g., lighting, building systems, etc.) would become greener over time as the State's RPS increases (i.e., fewer GHG emissions per unit of electricity supplies/consumed), consistent with the benchmarks established in SB 100 and SB 1020.

In addition to State measures, Appendix D to CARB's *2022 Scoping Plan Update* identifies potential actions that could be undertaken at a local level to support the State's climate goals. These actions primarily relate to preparing and implementing a qualified Climate Action Plan (CAP) at the local level. Appendix D goes on to provide specific recommendations regarding the types of measures the qualified CAPs should consider to align local actions with those being undertaken at the state level. Section 3.2.1 of Appendix D also outlines project attributes for residential and mixed-use projects to qualitatively determine consistency with the *2022 Scoping Plan*. It does not, however, include specific criteria for qualitatively evaluating the consistency of other land uses (e.g., industrial) or air permitting with the *2022 Scoping Plan Update*. The proposed Project would not conflict with nor obstruct implementation of the *2022 Scoping Plan Update*. Additionally, the project's proposed mitigation measures further establish consistency with the Scoping Plan by emphasizing electricity instead of gasoline (see Recommended Mitigation Measures GHG-1 and GHG-2) and natural gas (See Recommended Mitigation Measure GHG-3). These mitigation measures reduce GHG emissions and align with the Scoping Plan's carbon neutrality goals.

6.4.2 SUSTAINABLE FREIGHT PLAN AND ACT PROGRAM

The proposed Project would conflict with neither the Sustainable Freight Plan nor the ACT Program. Although the proposed Project would include the use of diesel trucks during operation, the Sustainable Freight Plan and ACT Program would be implemented at the state-level. The proposed Project's GHG emissions would benefit (i.e., be reduced) over time as older, less fuel-efficient, and higher polluting engines are decommissioned and replaced by newer, cleaner engines and ZEV trucks.

6.4.3 SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS RTP/SCS

As described in Section 4.3.2, the Connect SoCal is growth strategy and transportation plan whose primary intent is to demonstrate how the SCAG region will meet its GHG reduction target through the year 2050. The RTP/SCS contains policies and investments focused on establishing multimodal transportation systems, planning residential and employment growth near transit, and deploying zero emission technologies. Collectively, these land use plans, in conjunction with measures at the state-level to improve fuel efficiency standards, are designed to meet CARB's goal for the SCAG region's targets for reducing greenhouse gases from automobiles and light-duty trucks by 19% per capita, from 2005 levels, by 2035 (CARB, 2024).

The proposed Project would not be located in a Priority Development Area (SCAG 2024, Map 3.4); however, the project is anticipated to result in a less than significant VMT impact (Ganddini 2024). Furthermore, the p is a commercial/industrial business park, which would not conflict with housing land use strategies contained in the RTP/SCS. For these reasons, the project would not conflict with or otherwise obstruct implementation of Connect SoCal. The impact is less than significant.

The project's mitigation measures would further support the goals outlined in Connect SoCal by reducing VMT and accelerating zero emission infrastructure. Recommended Mitigation Measure GHG-1 would require the implementation a transportation demand management program, which would reduce the project's anticipated VMT, and Recommended Mitigation Measure GHG-2 would require the site to have a greater percentage of EV parking and charging infrastructure than would be required under Title 24. The implementation of these mitigation measures, although not required to demonstrate consistency with Connect SoCal, would help reduce the magnitude of an already less-than-significant impact.

6.4.4 MENIFEE GENERAL PLAN

The Meniffee General Plan contains policies to reduce GHG emissions (see Section 3.2.3 and Section 4.3.3). The proposed Project would be consistent with energy efficiency goals and would not conflict with any GHG policies in the General Plan, which would be implemented at the city level. The project would construct buildings that would be constructed to the latest CalGreen Code and, with the implementation of Mitigation Measure Recommended Mitigation Measure GHG-2, would go beyond the policies in the General Plan to incorporate voluntary Tier 2 EV measures from the 2022 CalGreen Code. For these reasons, the proposed Project would not obstruct the implementation of the Meniffee General Plan.

This page intentionally left blank

7 REPORT PREPARERS AND REFERENCES

This report was prepared by MIG under contract to Pemcor Investment Group. This report reflects the independent, objective, professional opinion of MIG. The following individuals were involved in the preparation and review of this report:

MIG

Chris Dugan, Director of Air Quality, GHG, and Noise Services
cdugan@migcom.com

1650 Spruce Street, Suite 106
 Riverside, California 92507
 (951) 787-9222

Phil Gleason, Senior Project Manager II
pgleason@migcom.com

Kasey Kitowski, Air Quality Analyst II
kkitowski@migcom.com

7.1 REFERENCES

California Air Resources Board (CARB). 2007. *Staff Report California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*. Sacramento, CA. November 16, 2007.

http://www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf

_____. 2009. *Climate Change Scoping Plan – A Framework for Change*. Endorsed by ARB December 2008. Sacramento, CA. May 11, 2009.

<http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>.

_____. 2017a. *2017 Climate Change Scoping Plan*. Sacramento, CA. November 2017.

_____. 2017b. *The Carl Moyer Program Guidelines*. April 24, 2017.

_____. 2020. “EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO₂) Emissions Account for the SAFE Vehicle Rule Part One and the Final SAFE Rule” June 26, 2020.

https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf

_____. 2022a. 2022 Scoping Plan Update. November 16, 2022. Web. Accessed December 31, 2022.

<https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf>

_____. 2022b. Current California GHG Emission Inventory Data. October 2022. Accessed December 1, 2022. <https://ww2.arb.ca.gov/ghg-inventory-data>

_____. 2023a. 2023 Annual Evaluation of Fuel Cell Electric Vehicle Deployment and Hydrogen Fuel Station Network Development. 2023. <https://ww2.arb.ca.gov/sites/default/files/2023-12/AB-8-Report-2023-FINAL-R.pdf>

_____. 2023b. Current California GHG Emission Inventory Data. 2000-2021 GHG Inventory (2023 Edition). 2023. <https://ww2.arb.ca.gov/ghg-inventory-data>

_____. 2024. SB 375 Regional Targets. 2024. <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/sb-375-regional-targets>

California Department of Tax and Fee Administration (CDTFA) 2023. Net Taxable Gasoline Gallons 2013 – 2022. Sacramento, CA. 2023. Accessed February 14, 2023. Web. <http://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm>.

- California Energy Commission (CEC). 2021a. 2019 California Residential Appliance Saturation Study. July 2021. <https://www.energy.ca.gov/sites/default/files/2021-08/CEC-200-2021-005-PO.pdf> 2020 Total System Electric Generation. 2021. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation/2020>
- _____. 2021b. Energy Commission Adopts Updated Building Standards to Improve Efficiency, Reduce Emissions From Homes and Businesses. August 11, 2021. Accessed March 17, 2022. <https://www.energy.ca.gov/news/2021-08/energy-commission-adopts-updated-building-standards-improve-efficiency-reduce-0>
- _____. 2021c. 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment. September 3, 2021. <https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity#:~:text=The%202021%20SB%20100%20Joint,assessment%20of%20costs%20and%20benefits>
- _____. 2022. CEC Approves \$2.9 Billion Investment for Zero-Emission Transportation Infrastructure. December 14, 2022. <https://www.energy.ca.gov/news/2022-12/cec-approves-29-billion-investment-zero-emission-transportation-infrastructure>
- _____. 2023a. *Electricity Consumption by County*. Accessed September 2024. Web. <https://ecdms.energy.ca.gov/elecbycounty.aspx>
- _____. 2023b. *Natural Gas Consumption by County*. Accessed September 2024. Web. <http://ecdms.energy.ca.gov/gasbycounty.aspx>
- _____. 2023c. *Natural Gas Consumption by Entity*. Accessed February 16, 2023. Web. <https://ecdms.energy.ca.gov/gasbyutil.aspx>
- _____. 2023d. "2022 California Annual Retail Fuel Outlet Annual Report Results (CEC-A15)." Retail Fuel Outlet Survey Results. CEC, Energy Almanac, Gasoline Data, Facts, and Statistics. August 16, 2023. Accessed September 2024. Web. <https://www.energy.ca.gov/media/3874>
- _____. 2024a. Total System Electric Generation 2009-2022. <https://www.energy.ca.gov/media/7311>
- California Natural Resources Agency (CNRA) 2009. *California Climate Adaptation Strategy*. Sacramento, CA. 2009.
- _____. 2018. Safeguarding California Plan: 2018 Update. <https://resources.ca.gov/CNRALegacyFiles/docs/climate/safeguarding/update2018/safeguarding-california-plan-2018-update.pdf>
- _____. 2024. Draft California Climate Adaptation Strategy May 2024. https://climateresilience.ca.gov/overview/docs/20240514-Draft_CA_Climate_Adaptation_Strategy_2024.pdf
- City of Menifee 2013a. City of Menifee General Plan Land Use Map. 2013. <https://www.cityofmenifee.us/DocumentCenter/View/7682/Adopted-General-Plan>
- _____. 2013b. City of Menifee General Plan Noise Element. 2013. <https://www.cityofmenifee.us/901/Noise-Element>
- Intergovernmental Panel on Climate Change (IPCC). 2014. Anthropogenic and Natural Radiative Forcing. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf

- Ganddini Group (Ganddini) 2024. Memorandum Of Understanding. Pemcor Commercial Industrial Business Park Project Scoping Agreement for Traffic Impact Analysis GGI Project No. 19729. June 17, 2024.
- _____. 2025. Pemcor Commercial Industrial Business Project Transportation Demand Management Assessment Project No. 19729. February 19, 2025.
- National Oceanic and Atmospheric Administration (NOAA) 2024. Trends in Atmospheric Carbon Dioxide Mauna Loa, Hawaii. Earth System Research Laboratory. Global Monitoring Division. July 5, 2024. Web. July 16, 2024. <https://www.esrl.noaa.gov/gmd/ccgg/trends/>
- Office of Governor Gavin Newsom 2022. California Leads the Nation's ZEV Market, Surpassing 1 Million Electric Vehicles Sold. February 25, 2022. https://www.gov.ca.gov/2022/02/25/california-leads-the-nations-zev-market-surpassing-1-million-electric-vehicles-sold/?utm_medium=email&utm_source=govdelivery
- PEMCOR Investment Group 2024. Menifee Business Park Operation Statement. 2024.
- South Coast Air Quality Management District (SCAQMD) 2010. Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15. Diamond Bar, CA. September 28, 2010. Available online at: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf)
- _____. 2021. Second Draft Staff Report Proposed Rule 2305 – Warehouse Indirect Source Rule - Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program and Proposed Rule 316 – Fees for Rule 2305. April 2021. https://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/pr-2305_sr_2nd-draft_4-7-21_clean.pdf?sfvrsn=8
- SCA Architecture, 2024. Major Plot Plan Review for Pemcor - Zeiders Road. March 2024.
- Southern California Association of Governments (SCAG) 2024. *Connect SoCal*. Adopted April 4, 2024.
- Southern California Edison (SCE) . 2022. *2021 Sustainability Report*. 2022. <https://www.edison.com/content/dam/eix/documents/sustainability/eix-2021-sustainability-report.pdf>
- _____. 2024. *2023 Sustainability Report*. May 2024. Web. https://download.edison.com/406/files/20245/eix-2023-sustainability-report.pdf?Signature=L9szNTibdb1lqD61bV94l2JMNik%3D&Expires=1725637515&AWSAccessKeyId=AKIAJX7XEOOELCYGIVDQ&versionId=xtFaY0bJYnXT90468zJhc4oar_ZyN5Wo&response-content-disposition=attachment
- United States Energy Information Administration (U.S. EIA) 2012. Total Energy, Annual Energy Review. September 27, 2012. <https://www.eia.gov/totalenergy/data/annual/showtext.php?t=ptb0601>
- _____. 2021. Frequently Asked Questions. June 1, 2021. <https://www.eia.gov/tools/faqs/faq.php?id=45&t=8#:~:text=In%202020%2C%20the%20U.S.%20annual,1.037%20MMBtu%2C%20or%2010.37%20therms>
- _____. 2022a. *Geothermal Explained, Geothermal Power Plants*. December 21, 2022. <https://www.eia.gov/energyexplained/geothermal/geothermal-power-plants.php>
- _____. 2022b. 2021 Total System Electric Generation. N.d. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation>

-
- _____ 2022c. Use of Energy Explained. June 13, 2022. <https://www.eia.gov/energyexplained/use-of-energy/>
- _____ 2022d. Gasoline Explained. December 28, 2022. <https://www.eia.gov/energyexplained/gasoline/>
- _____ 2022e. Use of energy explained: Energy use for transportation. June 17, 2022. <https://www.eia.gov/energyexplained/use-of-energy/transportation.php>
- _____ 2022f. State Energy Data System (SEDS): 1960-2020 (complete). June 24, 2022. Accessed February 14, 2023. <https://www.eia.gov/state/seds/seds-data-complete.php?sid=CA#Consumption>
- _____ 2022g. 2020 RECS Survey Data. State Fuels Used. Highlights for Fuels Used in U.S. Homes by State, 2020 June 2022. Accessed February 14, 2023. <https://www.eia.gov/consumption/residential/data/2020/state/pdf/State%20Fuels%20Used.pdf>
- _____ 2022h. 2020 RECS Survey Data. State Appliances. Highlights for Appliances in U.S. Homes by State, 2020 June 2022. Accessed February 14, 2023. <https://www.eia.gov/consumption/residential/data/2020/state/pdf/State%20Appliances.pdf>
- _____ 2023a. Glossary. N.d. <https://www.eia.gov/tools/glossary/index.php?id=British%20thermal%20unit>
- _____ 2023b. Electricity Explained, Data and Statistics. October 26, 2023. <https://www.eia.gov/energyexplained/electricity/data-and-statistics.php>
- _____ 2023c. Electricity Data Browser. N.d. <https://www.eia.gov/electricity/data/browser/#/topic/0?agg=2,0,1&fuel=vtvv&geo=g&sec=g&linechart=ELEC.GEN.ALL-US-99.A~ELEC.GEN.COW-US-99.A~ELEC.GEN.NG-US-99.A~ELEC.GEN.NUC-US-99.A~ELEC.GEN.HYC-US-99.A~ELEC.GEN.WND-US-99.A~ELEC.GEN.TSN-US-99.A&columnchart=ELEC.GEN.ALL-US-99.A~ELEC.GEN.COW-US-99.A~ELEC.GEN.NG-US-99.A~ELEC.GEN.NUC-US-99.A~ELEC.GEN.HYC-US-99.A~ELEC.GEN.WND-US-99.A&map=ELEC.GEN.ALL-US-99.A&freq=A&start=2010&end=2021&ctype=linechart&ltype=pin&rtype=s&pin=&rse=0&motype=0>
- _____ 2023d. Natural Gas Explained, Use of Natural Gas. Updated April 28, 2023. <https://www.eia.gov/energyexplained/natural-gas/use-of-natural-gas.php>
- _____ 2023e. Total Energy: Monthly Energy Review. Table 3.7c. January 2023 Monthly Energy Review. January 26, 2023. Accessed February 14, 2023. <https://www.eia.gov/totalenergy/data/monthly/index.php#petroleum>
- _____ 2023f. Independent Statistics and Analysis. U.S. States. Table CT3. Total End-Use Energy Consumption Estimates, 1960-2020, United States. Accessed July 26, 2024. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_use/tx/use_tx_US.html&sid=US
- _____ 2024. "Profile Analysis – California". March 16, 2024. Accessed July 26, 2024. Web. <https://www.eia.gov/state/analysis.php?sid=CA>.
- United States Environmental Protection Agency (U.S. EPA). 2022a. Renewable Natural Gas. November 2, 2022. <https://www.epa.gov/lmop/renewable-natural-gas>
- _____ 2022b. Program Overview for Renewable Fuel Standard. Last Updated February 22, 2022. Accessed September 1, 2022 <https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard>.
-

United States Environmental Protection Agency and National Highway Traffic and Safety Administration (U.S. EPA and NHTSA) 2016. Medium- and Heavy-Duty Fuel Efficiency Standards. Accessed May 1, 2019. <https://www.transportation.gov/briefing-room/epa-and-dot-finalize-greenhouse-gas-and-fuel-efficiency-standards-heavy-duty-trucks>.

This page intentionally left blank.

APPENDIX A: CalEEMod Output Files

This page intentionally left blank.

APPENDIX B: Fuel Consumption Spreadsheets

This page intentionally left blank.