Energy Consumption Assessment for the El Rancho High School Baseball Improvement Project

City of Pico Rivera, California

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September 2023

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
CalEEMod	California Emissions Estimator Model
CalGreen	California Green Building Standards Code
CAISO	California Independent System Operator
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
City	Pico Rivera
CO_2	Carbon dioxide
County	Los Angeles County
CPUC	California Public Utilities Commission
EMFAC	EMission FACtor
EO	Executive Order
EV	Electric vehicle
IEPR	Integrated Energy Policy Report

kv	Kilovolt
kWh	Kilowatt-hours
Project	El Rancho High School Baseball Improvement Project
RPS	Renewables Portfolio Standard
SB	Senate Bill
SCE	Southern California Edison

1.0 INTRODUCTION

This report documents the results of an Energy Consumption Assessment completed for the El Rancho High School Baseball Field Improvement Project (Project), which proposes renovations to the existing baseball field on the El Rancho High School campus in the City of Pico Rivera, California. This report was prepared to analyze the potential direct and indirect environmental impacts associated with Project energy consumption, including the depletion of nonrenewable resources (e.g., oil, natural gas, coal) during the construction and operational phases. The impact analysis focuses on the three sources of energy that are relevant to the Proposed Project: electricity, the equipment-fuel necessary for Project construction, and the automotive fuel necessary for Project operations.

1.1 Project Location and Background

The existing El Rancho High School campus is located at 6501 Passons Boulevard in the City of Pico Rivera, California. Nestled between Loch Alene Avenue to the west, Balfour Street to the north, and Homebrook Street to the south, the school is predominately surrounded by residential and commercial office land uses. California Highway 605 is located approximately 5,000 feet east of the Project Site.

The Project is proposing the renovations of the existing baseball field on the campus. Specifically proposed improvements involve the reconfiguration of an existing baseball diamond, as well as other related improvements such as the installation of batting cages, field lighting, and foul ball netting. The improvements to the baseball diamond would not result in an increase of events, additional school sports programs or participants, or result in additional spectators beyond current conditions. For the purposes of this analysis, eight acres in total were estimated to be disturbed by these proposed improvements.

2.0 ENERGY CONSUMPTION

2.1 Environmental Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. The vast majority of California's air pollution is caused by burning fossil fuels. Consumption of fossil fuels is linked to changes in global climate and depletion of stratospheric ozone. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (auto, carpool, and public transit); vehicle speeds; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial, and industrial land uses consume energy, typically through the usage of natural gas and electricity.

2.2 Energy Types and Sources

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides California with a majority of its electricity followed by renewables, large hydroelectric and nuclear. Southern California Edison (SCE) provides electrical services to Pico Rivera through state-regulated public utility contracts. SCE, the largest subsidiary of Edison International, is the primary electricity supply company for much of Southern California. It provides 14 million people with electricity across a service territory of approximately 50,000 square miles.

The California Public Utilities Commission (CPUC) regulates SCE. The CPUC has developed energy efficiency programs such as smart meters, low-income programs, distribution generation programs, self- generation incentive programs, and a California solar initiative. Additionally, the California Energy Commission (CEC) maintains a power plant database that describes all of the operating power plants in the state by county.

2.2.1 Existing Transmission and Distribution Facilities

The components of transmission and distribution systems include the generating facility, switching yards and stations, primary substation, distribution substations, distribution transformers, various sized transmission lines, and the customers. The United States (U.S.) contains over a quarter million miles of transmission lines, most of them capable of handling voltages between 115 kilovolts (kv) and 345 kv, and a handful of systems of up to 500 kv and 765 kv capacity. Transmission lines are rated according to the amount of power they can carry, the product of the current (rate of flow), and the voltage (electrical pressure). Generally, transmission is more efficient at higher voltages. Generating facilities, hydro-electric dams, and power plants usually produce electrical energy at fairly low voltages, which is increased by transformers in substations. From there, the energy proceeds through switching facilities to the transmission lines. At various points in the system, the energy is "stepped down" to lower voltages for distribution to customers. Power lines are either high voltage (115, 230, 500, and 765 kv) transmission lines or low voltage (12, 24, and 60 kv) distribution lines. Overhead transmission lines consist of the wires carrying the electrical energy (conductors), insulators, support towers, and grounded wires to protect the lines from lightening (called shield wires). Towers must meet the structural requirements of the system in several ways. They must be able to support both the electrical wires, the conductors, and the shield wires under varying weather

conditions, including wind and ice loading, as well as a possible unbalanced pull caused by one or two wires breaking on one side of a tower. Every mile or so, a "dead-end" tower must be able to take the strain resulting if all the wires on one side of a tower break. Every change in direction requires a special tower design. In addition, the number of towers required per mile varies depending on the electrical standards, weather conditions, and the terrain. All towers must have appropriate foundations and be available at a fairly regular spacing along a continuous route accessible for both construction and maintenance. A ROW is a fundamental requirement for all transmission lines. A ROW must be kept clear of vegetation that could obstruct the lines or towers by falling limbs or interfering with the sag or wind sway of the overhead lines. If necessary, land acquisition and maintenance requirements can be substantial. The dimension of a ROW depends on the voltage and number of circuits carried and the tower design. Typically, transmission line ROWs range from 100 to 300 feet in width. The electric power supply grid within Los Angeles County is part of a larger supply network operated and maintained by SCE that encompasses nearly the entire southern California region. This system ties into yet a larger grid known as the California Power Pool that connects with the San Diego Gas and Electric and Pacific Gas and Electric Companies. These companies coordinate the development and operation, as well as purchase, sale, and exchange of power throughout the State of California. Within the County, SCE owns most of the transmission and distribution facilities.

The California Independent System Operator (CAISO) manages the flow of electricity across the high-voltage, long-distance power lines (high-voltage transmissions system) that make up 80 percent of California's and a small part of Nevada's grid. This nonprofit public benefit corporation keeps power moving to and throughout California by operating a competitive wholesale electricity market, designed to promote a broad range of resources at lower prices, and managing the reliability of the electrical transmission grid. In managing the grid, CAISO centrally dispatches generation and coordinates the movement of wholesale electricity in California. As the only independent grid operator in the western U.S., CAISO grants equal access to 26,000 circuit miles of transmission lines and coordinates competing and diverse energy resources into the grid where it is distributed to consumers. Every five minutes, CAISO forecasts electrical demand and dispatches the lowest cost generator to meet demand while ensuring enough transmission capacity for delivery of power.

CAISO conducts an annual transmission planning process that uses engineering tools to identify any grid expansions necessary to maintain reliability, lower costs or meet future infrastructure needs based on public policies. CAISO engineers design, run and analyze complex formulas and models that simulate grid use under wide-ranging scenarios, such as high demand days coupled with wildfires. This process includes evaluating power plant proposals submitted for study into the interconnection queue to determine viability and impact to the grid. The long-term comprehensive transmission plan, completed every 15 months, maps future growth in electricity demand and the need to meet state energy and environmental goals that require the CAISO grid to connect to renewable-rich, but remote areas of the Western landscape. CAISO promotes energy efficiency through resource sharing. CAISO electricity distribution management strategy designed so that an area with surplus electricity can benefit by sharing megawatts with another region via the open market. This allows the dispatch of electricity as efficiently as possible. By maximizing megawatts as the demand for electricity increases, CAISO helps keep electricity flowing during peak periods.

2.3 Energy Consumption

Electricity use is measured in kilowatt-hours (kWh), and natural gas use is measured in therms. Vehicle fuel use is typically measured in gallons (e.g., gallons of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh. As previously stated, this impact analysis focuses on the three sources of energy that are relevant to the Proposed Project: electricity usage, the equipment-fuel necessary for Project construction, and the automotive fuel necessary for Project operations.

The electricity consumption associated with all nonresidential uses in Los Angeles County from 2017 to 2021 is shown in Table 2-1. As indicated, electricity consumption has decreased since 2017.

Table 2-1. Non-Residential Electricity Consumption in Los Angeles County 2017-2021

Year	Electricity Consumption (kilowatt hours)
2021	44,437,634,389
2020	42,736,774,915
2019	46,105,550,849
2018	47,361,083,621
2017	47,960,383,020

Source: CEC 2022

Automotive fuel consumption in Los Angeles County from 2018 to 2022 is shown in Table 2-2. Fuel consumption has decreased in the County since 2018.

Table 2-2. Automotive Fuel Consumption in Los Angeles County 2018-2022

Year	Total Fuel Consumption
2022	4,695,245,754
2021	4,724,505,393
2020	4,239,755,680
2019	4,724,445,036
2018	4,797,804,755

Source: California Air Resources Board (CARB) 2022

2.4 Regulatory Framework

2.4.1 State

2.4.1.1 Integrated Energy Policy Report

Senate Bill (SB) 1389 (Bowen, Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial integrated energy policy report (IEPR) that assesses major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety (Public Resources Code Section 25301a). Each biennial IEPR takes into account various factors such as energy supply, demand, infrastructure, environmental considerations, and economic impacts. The report aims to address key energy challenges and provide recommendations to achieve a reliable, affordable, and sustainable energy system for California.

Some of the key areas typically covered in the report include:

1. Renewable Energy: The IEPR focuses on promoting renewable energy sources such as solar, wind, geothermal, and biomass. It assesses the state's progress in meeting its renewable energy goals, identifies barriers, and proposes strategies to increase renewable energy generation and integration into the grid.

2. Energy Efficiency: The report highlights the importance of energy efficiency measures to reduce energy consumption and greenhouse gas emissions. It explores policies and initiatives to promote energy-efficient technologies and practices in buildings, transportation, and industries.

3. Grid Modernization: The IEPR addresses the modernization and optimization of the electrical grid infrastructure to accommodate a higher penetration of renewable energy, improve grid reliability, and support emerging technologies such as energy storage and electric vehicles.

4. Transportation: The report typically includes a section on transportation, focusing on reducing dependence on fossil fuels and promoting the adoption of electric vehicles (EVs) and alternative fuels. It may discuss infrastructure development, incentives, and policies to accelerate the transition to cleaner transportation options.

5. Climate Change Mitigation: Given California's commitment to combating climate change, the IEPR often emphasizes strategies to reduce greenhouse gas emissions and achieve the state's climate goals. This may include discussions on carbon pricing, cap-and-trade programs, and the integration of climate considerations into energy planning.

6. Energy Resilience: The report may address strategies to enhance the resilience of the energy system, considering factors such as extreme weather events, natural disasters, and cybersecurity risks. It could discuss measures to ensure the reliable and uninterrupted supply of energy during emergencies.

7. Economic Impacts and Equity: The IEPR often explores the economic implications of energy policies and initiatives, including job creation, investment opportunities, and the equitable distribution of benefits across different communities and socioeconomic groups.

The CEC prepares these assessments and associated policy recommendations every two years, with updates on alternate years, as part of the IEPR.

The 2023 IEPR focuses on next steps for transforming transportation energy use in California. The 2023 IEPR addresses the role of transportation in meeting state climate, air quality, and energy goals; the transportation fuel supply; the Alternative and Renewable Fuel and Vehicle Technology Program; current and potential funding mechanisms to advance transportation policy; transportation energy demand forecasts; the status of statewide plug-in electric vehicle infrastructure; challenges and opportunities for electric vehicle infrastructure.

2.4.1.2 Executive Order B-55-18

In September 2018 Governor Jerry Brown Signed Executive Order (EO) B-55-18, which establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving a net zero carbon dioxide emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing statewide targets for greenhouse gas emission reduction. EO B-55-18 requires the California Air Resource Board (CARB) to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

2.4.1.3 Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law Senate Bill (SB) 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the state's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the CPUC.

The CEC has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities, of 1,100 pounds carbon dioxide per megawatt hour. This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of greenhouse gas.
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long term while meeting the State's standards for environmental impact.
- Establish a public process for determining the compliance of proposed investments with the Emissions Performance Standard (Perata, Chapter 598, Statutes of 2006).

2.4.1.4 Senate Bill 1368 Renewable Energy Sources (Renewable Portfolio Standards)

Established in 2002 under SB 1078 and accelerated by SB 107 (2006) and SB 2 (2011), California's Renewables Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydro power plants; digester gas; fuel cells; geothermal; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multi-fuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 60 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of CAISO into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the CAISO to those markets, pursuant to a specified process. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

2.4.2 Local

2.4.2.1 City of Pico Rivera General Plan

The City of Pico Rivera General Plan's Environmental Resource Element addresses the management of the City's environmental resources, including air quality, greenhouse gas emissions, water resources, biological resources, mineral resources, and cultural resources. The goal of the policies described in this chapter is to maintain a healthy natural environment for its current and future citizens. The following policies from the Energy Conservation section are applicable to the Proposed Project.

Policies

Policy 8.3-1: Energy Conserving Land Use Practices. Implement energy conserving land use practices including higher density and mixed-use development in proximity to transit along with infill development; improvements to the community's bicycle system; and expansion of transit routes, facilities, and services.

Policy 8.3-5: Renewable Energy. Encourage new development to install, and consider providing incentives for, onsite renewable energy systems and facilities (e.g., solar).

Policy 8.3-7: Energy Efficiency. Encourage all new development to implement additional energy efficient measures beyond what is required by State law to exceed minimum energy efficiency requirements.

2.5 Energy Consumption Impact Assessment

2.5.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to energy if it would do any of the following:

1) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The impact analysis focuses on the three sources of energy that are relevant to the Proposed Project: electricity usage, the equipment fuel necessary for Project construction and the automotive fuel necessary for Project operations. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use. For the purposes of this analysis, the amount of electricity estimated to be consumed by the Project is quantified and compared to that consumed by all nonresidential land uses in Los Angeles County. Similarly, the amount of fuel necessary for Project construction and operations is calculated and compared to that consumed in Los Angeles County.

2.5.2 Methodology

The levels of construction and operational related energy consumption estimated to be consumed by the Project include the number of kWh of electricity and gallons of gasoline. The amount of total construction-related fuel used was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. Electricity consumption estimates were calculated using the California Emissions Estimator Model (CalEEMod), version 2022.1, and account for the electricity consumption identified in the Musco Lighting Plans for the Proposed Project (see Air Quality and Greenhouse Gas Emissions Assessment: El Rancho High School Baseball Improvement Project [ECORP 2023]). CalEEMod is a statewide land use computer model designed to quantify resources associated with both construction and operations from a variety of land use projects. Operational automotive fuel consumption has been calculated with Emission FACtor (EMFAC) 2021. EMFAC 2021 is a mathematical model that was developed to calculate emission rates and rates of gasoline consumption from motor vehicles that operate on highways, freeways, and local roads in California. It is noted that the Proposed Project's operational vehicle trips will not increase from the existing trips at the Project Site. Nevertheless, an estimation of fuel consumption is provided for disclosure purposes.

2.5.3 Impact Analysis

2.5.3.1 Would the Project Result in a Potentially Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources, During Project Construction or Operation?

The Project is proposing improvements to El Rancho High School's Baseball Field. Additionally, the Project is proposing the installation of batting cages, field lighting, and foul ball netting.

For the purpose of this analysis, the amount of operational electricity to be consumed by the Project is quantified and compared to that consumed by all nonresidential land uses in Los Angeles County. The amount of fuel necessary for Project construction is calculated and compared to that consumed in Los Angeles County. Similarly, the amount of fuel necessary for Project operations is calculated and compared to that consumed in Los Angeles County. Energy consumption associated with the Proposed Project is summarized in Table 2-3.

Table 2-3. Proposed Project Energy and Fuel Consumption

Energy Type	Annual Energy Consumption	Percentage Increase Countywide
Project Energy Consumption		
Electricity Consumption[1]	65,638 kilowatt-hours	0.00015 percent
Automotive Fuel Consumption		
Project Construction Calendar Year One[2]	28,276 gallons	0.00060 percent
Project Construction Calendar Year Two[2]	2,562 gallons	0.00005 percent
Project Operations**[3]	10,291 gallons	--

Source: [1]CalEEMod; [2]Climate Registry 2016; [3]EMFAC2021 (CARB 2022)
Notes: **The daily trips would not change from existing daily trip numbers. The operational fuel consumption is shown here for disclosure purposes and would not increase fuel consumption within the County as these trips are already occurring under existing conditions.
The Project increases in electricity consumption are compared with all nonresidential uses in Los Angeles County in 2021, the latest data available. The Project increases in construction fuel consumption are compared with the anticipated countywide fuel consumption in 2022, the most recent full year of data.

Fuel necessary for Project construction would be required for the operation and maintenance of construction equipment and the transportation of materials to the Project Site. The fuel expenditure necessary to construct the construction baseball field improvements would be temporary, lasting only as long as Project construction. As indicated in Table 2-3, the Project's gasoline fuel consumption during the one-time construction period is estimated to be 28,276 gallons during the first calendar year of construction and 2,562 during the second year of construction. This would increase the annual countywide gasoline fuel use in the county by 0.00060 percent and 0.00005 percent, respectively. As such, Project construction would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the state. Construction contractors would purchase their own gasoline

and diesel fuel from local suppliers and would judiciously use fuel supplies to minimize costs due to waste and subsequently maximize profits. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and requiring recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction.

Operations of the Proposed Project's lighting system would include electricity usage. As shown in Table 2-3, the annual electricity consumption due to operations would be 65,638 kilowatt-hours resulting in an imperceivable increase (0.00015 percent) in the typical annual electricity consumption attributable to all nonresidential uses in Los Angeles County. However, this is potentially a conservative estimate. In September 2018 Governor Jerry Brown Signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Carbon neutrality refers to achieving net zero carbon dioxide (CO_2) emissions. This can be achieved by reducing or eliminating carbon emissions, balancing carbon emissions with carbon removal, or a combination of the two. This goal is in addition to existing statewide targets for greenhouse gas emission reduction. Governor's Executive Order B-55-18 requires CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

The Project is estimated to generate approximately 76 daily trips during practice days and 192 daily trips during game days. As indicated in Table 2-3, this would equate to a consumption of approximately 10,291 gallons of automotive fuel per year, which would not lead to any Countywide percentage increase in fuels consumption as this fuel consumption is already occurring under existing conditions. As previously mentioned, the average daily trips would remain the same as existing daily trip numbers.

2.5.3.2 Would the Project Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency?

The IEPR provides policy recommendations to be implemented by energy providers in California. Electricity would be provided to the Project by SCE. The Proposed Project's operations would not require any natural gas consumption. SCE has various programs to support cleaner and more sustainable power. For instance, SCE has expanded in developing their portfolio of solar, wind, and hydropower technology. Furthermore, SCE had developed its own Climate Adaptation Community Engagement Plan, along with several other plans to address climate change vulnerabilities, clean power initiatives, long-term upgrades to the grid, and reducing greenhouse gases from electricity generation. Therefore, SCE is consistent with, and would not otherwise interfere with, nor obstruct implementation of the goals presented in the 2023 IEPR. Thus, because the SCE are consistent with the 2023 IEPR, the Proposed Project is consistent with, and would not otherwise interfere with, nor obstruct implementation of the goals presented in the 2023 IEPR.

The Project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. The City's General Plan Environmental Resource Element ensures that new development shall be energy efficient and generally uphold all local and state energy efficiency standards. The Project will be built to the Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code

of Regulations (Title 24). Title 24 was established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 is updated approximately every three years; the 2019 Title 24 updates went into effect on January 1, 2020. The 2022 standards went into effect became effective January 1, 2023. The 2022 Energy Standards improve upon the 2019 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2022 update to the Energy Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, encouraging better energy efficiency, strengthening ventilation standards, and more. The 2022 Energy Standards are a major step toward meeting Zero Net Energy. Buildings permitted on or after January 1, 2023, must comply with the 2022 Standards. Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments.

Additionally, in January 2010, the State of California adopted CalGreen which establishes mandatory green building standards for all buildings in California. The code was subsequently updated in 2013. CalGreen covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. With these building standards in place, the Project would not obstruct any state or local plan for renewable energy or energy efficiency.

3.0 REFERENCES

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APPENDIX A

Energy Consumption Modeling Output

Proposed Project
Total Construction-Related and Operational
Gasoline Usage

Construction

Table 1. Construction in First Calendar Year			
Action	**Carbon Dioxide Equivalents (CO_2e) in Metric Tons[1]**	**Conversion of Metric Tons to Kilograms[2]**	**Construction Equipment Emission Factor[2]**
Project Construction	287	287,000	10.15
Total Gallons Consumed During First Calendar Year of Construction:			**28,276**

Table 2. Construction in Second Calendar Year			
Action	**Carbon Dioxide Equivalents (CO_2e) in Metric Tons[1]**	**Conversion of Metric Tons to Kilograms[2]**	**Construction Equipment Emission Factor[2]**
Project Construction	026	26,000	10.15
Total Gallons Consumed During Second Calendar Year of Construction:			**2,562**

Sources:

[1] El Rancho High School Baseball Field Improvement Project Air Quality and Greenhouse Gas Emissions Assessment. 2023.

[2]Climate Registry. 2016. *General Reporting Protocol for the Voluntary Reporting Program version 2.1.* January 2016. http://www.theclimateregistry.org/wp-content/uploads/2014/11/General-Reporting-Protocol-Version-2.1.pdf

Proposed Project
Total Construction-Related and Operational
Gasoline Usage

Operations

Total Onroad Vehicle Gallons Consumed in Los Angeles County in 2025								
Area	**Sub-Area**	**Calendar Year**	**Season**	**Veh_tech**	**EMFAC 2021 Category**	**Total Onroad Vehicle Gallons Consumed in Los Angeles County in 2025**	**Total Onroad Vehicle Miles Traveled in Los Angeles County in 2025**	**Total Passenger Vehicle Miles per Gallon in Los Angeles County in 2025**
Sub-Areas	Los Angeles County	2025	Annual	All Vehicles	All Vehicles	4,467,805,867	105,175,573,743	23.54
Sources: California Air Resource Board. 2021. EMFAC2021 Mobile Emissions Model.								

Table 5. Total Gallons During Project Operations		
Annual VMT	**Total Miles Per Gallon**	**Project Onroad Vehicle Annual Fuel Consumption**
242,254	23.54	**10,291**
Sources: CalEEMod 2022.1.		