

Technical Memorandum

To: Lauren Rhodes and Jan Green Rebstock, Environmental Management Group, Bureau of Engineering, Department of Public Works, City of Los Angeles; Kari Derderian and Clare Lahey, Bureau of Transit Services, Los Angeles Department of Transportation, City of Los Angeles

From: Anders Sutherland, Senior Environmental Scientist
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Date: July 28, 2022

Re: Los Angeles Department of Transportation Electric Bus Maintenance Facility – Energy Impact Assessment

1.0 PURPOSE AND ORGANIZATION OF THIS MEMO

The purpose of this memorandum is to document the results of the energy analysis of the potential environmental impacts associated with construction and operation of the proposed Electric Bus Maintenance Facility (EBMF or proposed project) in south Los Angeles. This study is conducted in support of the Initial Study to be prepared in compliance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines and the Environmental Assessment to be prepared in compliance with the National Environmental Policy Act (NEPA).

2.0 PROJECT DESCRIPTION

2.1 Project Location and Setting

The City of Los Angeles (the City) is proposing to construct the EBMF on a 5.5-acre land located at 740 and 800 East 111th Place in South Los Angeles (Assessor's Parcel Numbers [APNs] 6071-022-009 and 6071-022-013). The project site is located on light industrial zoned land and has been recently utilized as a logistics warehouse for solar panels. The site is within Council District 8's jurisdiction in the Southeast Los Angeles Community Planning Area of the City (Figures 1 and 2). The proposed project will be operated by the Los Angeles Department of Transportation (LADOT).

The project site is located between East 111th Place and East Lanzit Avenue, east of South Avalon Boulevard, and has a relatively flat topography. Small clusters of light-industry land uses can be found in the immediate vicinity of the project site, with adjacent land uses surrounding the project site comprised mostly of multi-family and single-family residences but also encompassing land supporting other activities, including commercial and community-oriented social services, such as education and health facilities. The area is largely urbanized and nearly built-out with little remaining

vacant land. There are no natural features or major land formations, surface water bodies, or waterways near the project site.

Figure 1 Regional Map

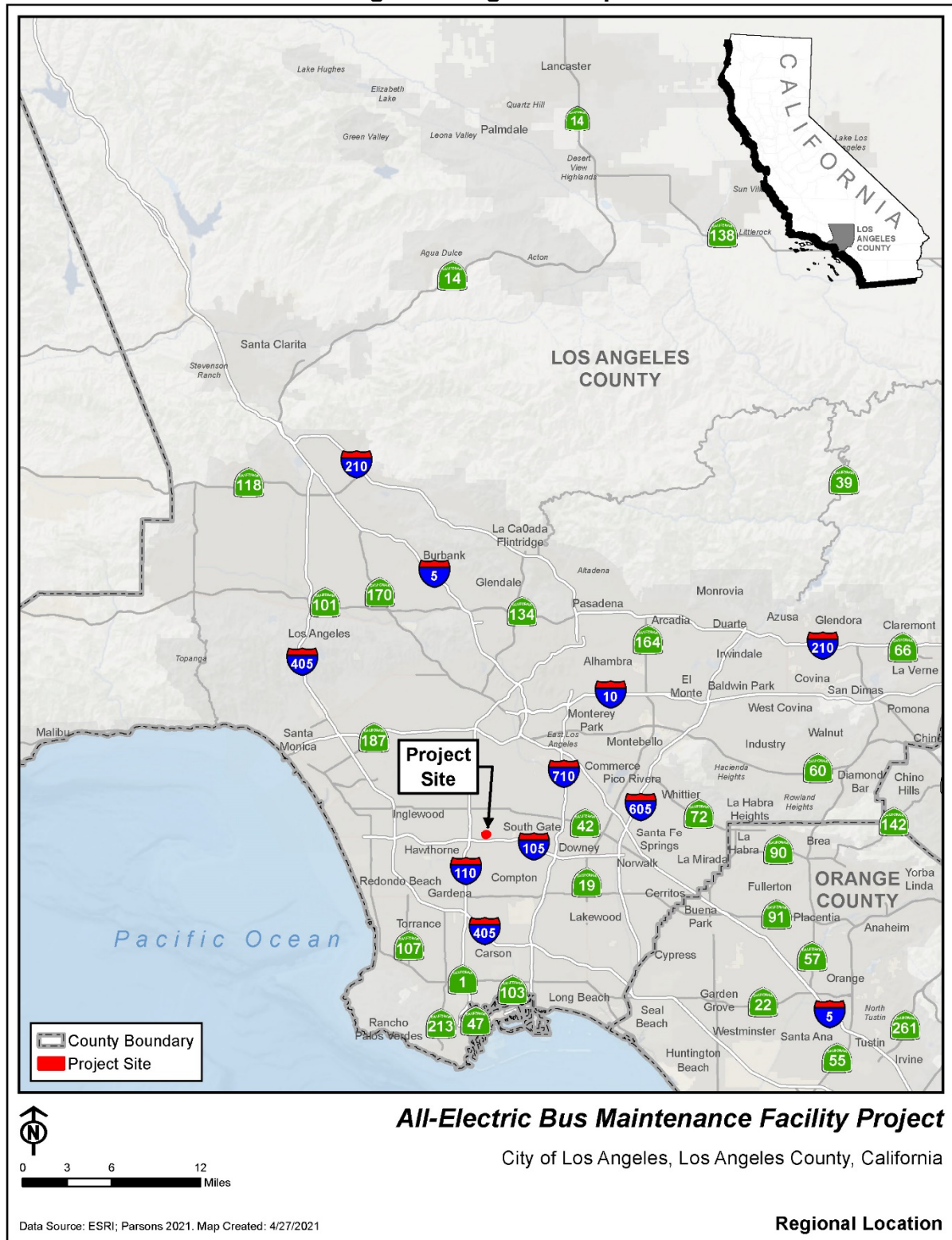
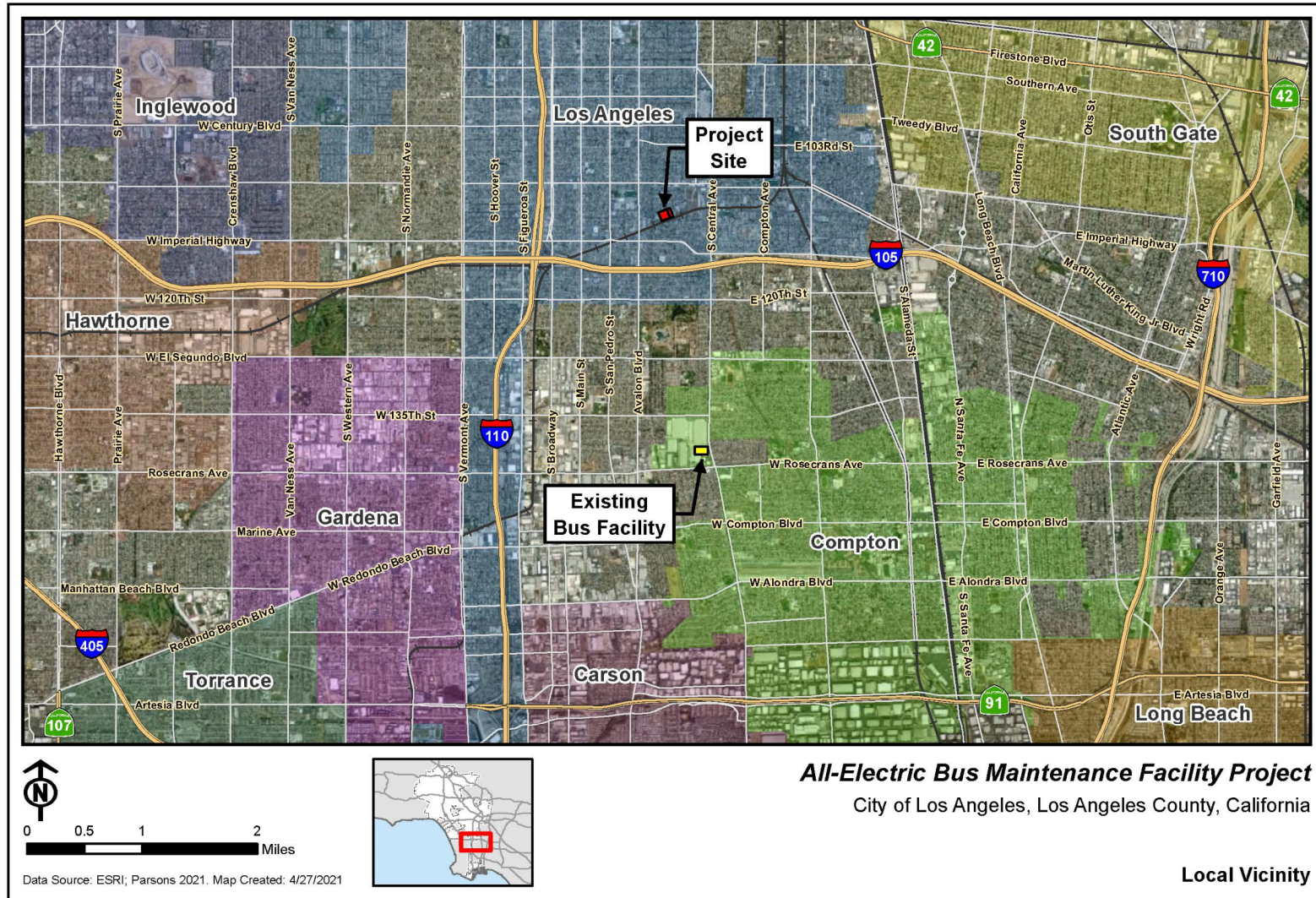


Figure 2 Project Location Map



The site is bounded by East 111th Place to the northwest, with single family residences across the street and by the Union Pacific Railroad (UPRR) tracks and Lanzit Avenue to the south, with single family residences beyond the tracks and street. Two buildings exist on the site: a 32,000-square-foot warehouse built in 1957 at the eastern section and a 118,800-square-foot warehouse built in 1956 at the central and western sections. The buildings sit back to back and the eastern and western ends of the site are paved as internal driveways and parking areas. The Animo James B. Taylor Charter Middle School is immediately to the east and the Kedren Health Community Center (which provides primary care, mental health care, and a Headstart/State preschool) is immediately to the west.

Access to the site is provided by two driveways off East 111th Place, a street that is designated as a local collector with one lane in each direction and allows daytime on-street parking on each side. The UPRR rail line runs parallel to East Lanzit Avenue south of the project site. Imperial Highway and Interstate 105 (I-105) are located approximately three and seven blocks south of the project site, respectively.

Figure 3 presents an aerial view of the project site and its general vicinity.

Figure 3 Aerial View of Project Site and its Immediate Vicinity



2.2 Proposed Project Description

LADOT operates and maintains its existing bus fleet from its South Los Angeles Bus Maintenance Facility, located at 14011 South Central Avenue in Compton. This current facility is not owned by the City and is leased through LADOT's operations services contractor. The existing facility does not have sufficient capacity to accommodate the additional maintenance and storage requirements of the proposed transition to electric buses and expanded charging needs of an all-electric bus fleet.

LADOT proposes to build a bus maintenance facility at the project site to serve its future electric bus fleet. The proposed EBMF is planned as a modern maintenance facility to support a larger and cleaner zero-emissions bus fleet, consisting of 130 all-electric battery bus vehicles for the DASH and Commuter Express services provided by LADOT. The EBMF would be used to store and dispatch electric buses for daily service and would provide repair and maintenance services, parking, charging, and inspection functions. The proposed facility would eventually replace the existing LADOT bus maintenance facility located at 14011 South Central Avenue (approximately 2 miles south of the new facility).

After demolition of the existing buildings on the site, the City proposes to construct several buildings and structures, including a two-story operations building to provide dispatch and administrative functions, a maintenance building with 10 bus maintenance bays, a service building, a bus wash building, Battery-Electric Bus (BEB) parking/charging area, and a second-story parking deck for up to 360 employee/visitor vehicles, with the canopy above the parking deck topped with a 2,000-kilowatt photovoltaic (PV) system. Electrification equipment, including electrical transformers, switch cabinets, and bus chargers, is also proposed. Figures 2-4 and 2-5 present the site layouts for the proposed facility.

The EBMF would provide preventive maintenance inspections, BEB charging, light maintenance and repair, emergency maintenance, interior vehicle cleaning, and exterior vehicle washing. It would also accommodate administrative and operations functions and be used as a report base for bus operators. It would include space for employee parking, conference meeting rooms, operations and maintenance staff offices, dispatcher workstations, employee report and recreation rooms, and areas with lockers, showers, and restrooms for operations and maintenance personnel.

The proposed project facility would accommodate as many as 70 of the 30-foot-long DASH buses and 60 of the 45-foot-long Commuter Express buses, comprising a total of 130 battery-electric buses (BEBs) that would be assigned to the new South Los Angeles EBMF. The facility would include surface parking and charging spaces for 130 BEBs in an area located east of the Maintenance Building. The BEBs running easterly from Avalon Boulevard would enter the site through the west entrance driveway on East 111th Place, check in with the onsite security guard, and proceed into the site to the southern section for service and washing. Otherwise, BEBs requiring repairs would park at the bus bays along the western section. Other BEBs may directly run in a counterclockwise direction and park at the central area for charging. The BEBs would leave the site through the east exit driveway and run westerly on East 111th Place to Avalon Boulevard. Vehicles driven

by bus operators, proposed project staff, other employees, and visitors would enter and exit through the center driveway that connects to a ramp leading to the second-level parking deck.

The construction schedule for the proposed project has not been determined. For environmental analysis purposes, it is assumed construction would be completed in 24 months following the final engineering design and bidding process in 2023. Any required remediation would be completed prior to the start of construction activities. Assuming no or limited remediation is necessary, project construction is tentatively scheduled to begin in mid-2024 and would be completed by mid-2026. Construction activities at the proposed project site would include mobilization and staging; building demolition; site clearing, grading and paving; new structure construction, equipment installation, and minor landscaping and finishing.

Approximately 312 employees would be working onsite, and the facility is planned to be open 24 hours per day, 7 days per week. Staff would be onsite on two or three shifts, which would be staggered depending on their work responsibilities.

3.0 EXISTING CONDITIONS

3.1 Electricity

Existing power and electrical services in the City are provided by the Los Angeles Department of Water and Power (LADWP), which supplies more than 26 million megawatt hours (MWh) of electricity per year for its 1.54 million residential and business customers (Los Angeles Department of Water and Power 2021). LADWP has more than 8,009 megawatts of net dependable generation capacity. Of LADWP's total power resources, about 34 percent are from renewable sources, 27 percent from natural gas, 14 percent from nuclear, 21 percent from coal, and 3 percent from large hydroelectric. About 70 percent of the electricity in the City is consumed by business and industry, with the remaining 30 percent of residents averaging about 500 kilowatt hours of usage per month.

3.2 Transportation Fuels

In California, the transportation sector is the state's largest energy-consumer, due to high demand from California's many motorists, major airports, and military bases. The majority of transportation energy is currently derived from a wide variety of petroleum products. Automobiles and trucks consume gasoline and diesel fuel. The transportation sector consumes relatively minor amounts of natural gas or electricity, but propelled mainly by air quality laws and regulations, technological innovations in transportation are expected to increasingly rely on compressed natural gas and electricity as energy sources. Energy consumption by on-road motor vehicles reflects the types and numbers of vehicles, the extent of their use (typically described in terms of vehicle miles traveled [VMT]), and their fuel economy (typically described in terms of miles per gallon [mpg]).

Although California's population and economy are expected to continue to grow, gasoline demand is projected to decline from roughly 15.8 billion gallons in 2017 to between 12.3

and 12.7 billion gallons in 2030, a reduction of 20 to 22 percent (California Energy Commission 2017). This decline is due to both increasing vehicle electrification and higher fuel economy for new gasoline vehicles.

3.3 Natural Gas

The proposed project would not use natural gas for construction or operations. Therefore, natural gas is not discussed further in this Technical Memorandum.

4.0 REGULATORY SETTING

4.1 Federal

4.1.1 The Energy Policy and Conservation Act of 1975

The Energy Policy and Conservation Act was enacted to serve the nation's energy demands and promote conservation methods when feasibly obtainable. This Act mandated vehicle economy standards, extended oil price controls to 1979, and directed the creation of a strategic petroleum reserve.

4.1.2 Alternative Motor Fuels Act of 1988

The Alternative Motor Fuels Act amended a portion of the Energy Policy and Conservation Act to encourage the use of alternative fuels, including electricity. This Act directed the Secretary of Energy to ensure that the maximum practicable number of federal passenger automobiles and light-duty trucks be alcohol-powered vehicles, dual-energy vehicles, natural gas-powered vehicles or natural gas dual-energy vehicles. This Act also directed the Secretary of Energy to conduct a study regarding such vehicles' performance, fuel economy, safety, and maintenance costs and report to Congress the results of a feasibility study concerning the disposal of such alternative-fueled federal vehicles.

4.1.3 Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and Congestion Mitigation and Air Quality Improvement (CMAQ) Program

The ISTEA was the first federal legislation regarding transportation planning and policy. This Act presented an intermodal approach to highway and transit funding with collaborative planning requirements, giving additional powers to state and local transportation decision-makers and metropolitan planning organizations. This Act also provided funds for non-motorized commuter trails, defined a number of High Priority Corridors to be part of the National Highway System, and called for the designation of up to five high-speed rail corridors.

The CMAQ Program was created under ISTEA. The program was reauthorized under the Transportation Equity Act for the 21st Century (TEA-21) in 1998 and again as part of the

Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005. The purpose of the CMAQ Program is to fund transportation projects or programs and related efforts that contribute to air quality improvements and provide congestion relief.

4.1.4 Transportation Equity Act for the 21st Century (TEA-21)

The TEA-21 was enacted in 1998 as the successor legislation to ISTEA and builds on its established initiatives. This Act reauthorized the CMAQ Program and authorized federal highway, highway safety, transit and other surface transportation programs over the next six years. It combined the continuation and improvement of current programs with new initiatives to meet the challenges of improving traffic safety, protecting and enhancing communities and the natural environment as transportation is provided, and advancing economic growth and competitiveness domestically and internationally through efficient and flexible transportation.

4.1.5 Moving Ahead for Progress in the 21st Century Act (MAP-21)

Signed by President Obama in July 2012, MAP-21 represented the first multi-year transportation authorization enacted since 2005, funding surface transportation programs with more than \$105 billion for fiscal years 2013 and 2014. Among the provisions within MAP-21 that relate to energy is the scope of the state and metropolitan planning processes, which aim to “protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.” MAP-21 also authorized \$70 million for a public transportation research program that focuses on energy efficiency and system capacity, among other items. With the exception of the provisions of MAP-21, there is no federal legislation related specifically to the subject of energy efficiency in public transportation project development and operation.

4.1.6 Energy Policy Act of 1992 and 2005

The Energy Policy Act reduces dependence on imported petroleum and improves air quality by addressing all aspects of energy supply and demand, including alternative fuels, renewable energy and energy efficiency. This Act encourages the use of alternative fuels through both regulatory and voluntary activities and the approaches carried out by the U.S. Department of Energy. It requires federal, state, and alternative fuel provider fleets to acquire alternative fuel vehicles. The Department of Energy's Clean Cities Initiative was established in response to the Energy Policy Act of 1992 to implement voluntary alternative fuel vehicle deployment activities.

The Energy Policy Act (2005) necessitated the development of grant programs, demonstration and testing initiatives, and tax incentives that promote alternative fuels and advanced vehicles production and use. This Act also amends existing regulations, including fuel economy testing procedures and Energy Policy Act of 1992 requirements for federal, state, and alternative fuel provider fleets.

4.1.7 Energy Independence and Security Act of 2007

- The Energy Independence and Security Act consists of provisions designed to increase energy efficiency and the availability of renewable energy. Key provisions of this Act include: The Corporate Average Fuel Economy (CAFE), which sets a target of 54.5 miles per gallon for the combined fleet of cars and light trucks by the model year 2025.
- The Renewable Fuels Standard, which sets a modified standard that starts at 9.0 billion gallons in 2008 and rises to 36 billion gallons by 2022.
- The Energy Efficiency Equipment Standards, which includes a variety of new standards for lighting and residential and commercial appliance equipment.
- The Repeal of Oil and Gas Tax Incentives, which includes the repeal of two tax subsidies to offset the estimated cost to implement the CAFE provision.

4.2 State

4.2.1 Senate Bill 1078

In 2002, Senate Bill (SB) 1078 (Public Utilities Code, Chapter 2.3, Sections 387, 390.1, and 399.25) implemented a California Renewable Portfolio Standard, which established a goal that 20 percent of the energy sold to customers be generated by renewable resources by 2017. The goal was accelerated in 2006 under SB 107 and expanded in 2011 under SB 2, which required electric service providers and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020.

4.2.2 Senate Bill 1389

The California Energy Commission (CEC) is responsible for, among other things, forecasting future energy needs for the state and developing renewable energy resources and alternative renewable energy technologies for buildings, industry, and transportation. SB 1389 (Public Resources Code Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial integrated energy policy report, assessing major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors. The report is also intended to provide policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies. The 2019 Integrated Energy Policy Report, required under SB 1389, was adopted February 20, 2020.

4.2.3 Assembly Bill 2076, Reducing Dependence on Petroleum

The CEC and California Air Resources Board (CARB) are directed by Assembly Bill (AB) 2076 (passed in 2000) to develop and adopt recommendations for reducing dependence on petroleum. A performance-based goal in AB 2076 is to reduce petroleum demand to 15 percent less than 2003 demand by 2020.

4.2.4 Senate Bill 375—Sustainable Communities Strategy

SB 375 was adopted with the goal of reducing greenhouse gas (GHG) emissions from cars and light trucks. Each metropolitan planning organization (MPO) across California is required to develop a sustainable communities strategy (SCS) as part of its regional transportation plan (RTP) to meet the region's GHG emissions reduction target. The 2020–2045 RTP/SCS prepared by the Southern California Association of Governments (SCAG) includes commitments to reduce emissions from transportation sources to comply with SB 375.

4.2.5 California Buildings Standard Code – Title 24 Standards

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations [CCR], Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the State. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The standards require that enforcement agencies determine compliance with CCR Title 24, Part 6 before issuing building permits for any construction.

4.2.6 California Buildings Standard Code – Green Building Standards

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to improve public health by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The CALGreen Code is not intended to substitute for 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. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings, including energy efficiency, water conservation, material conservation, planning and design and overall environmental quality.

4.2.7 Innovative Clean Transit Regulation

The Innovative Clean Transit (ICT) regulation was adopted in December 2018 and requires all public transit agencies to gradually transition to a 100 percent zero-emission bus (ZEB) fleet. Beginning in 2029, 100% of new purchases by transit agencies must be ZEBs, with a goal for full transition by 2040. It applies to all transit agencies that own, operate, or lease buses with a gross vehicle weight rating (GVWR) greater than 14,000 lbs. It includes standard, articulated, over-the-road, double-decker, and cutaway buses. A ZEB Rollout Plan required from each transit agency, approved by its Board, to show how it is planning to achieve a full transition to zero-emission technologies by 2040. LADOT Transit published its Rollout Plan in October 2020.

4.3 Local

4.3.1 GREEN LA – An Action Plan to Lead the Nation in Fighting Global Warming (GREEN LA Plan)

On May 15, 2007, Los Angeles Mayor Antonio Villaraigosa released the GREEN LA Plan that has an overall goal of reducing the City of Los Angeles' GHG emissions by 35 percent below 1990 levels by 2030. This goal exceeds the targets set by both California and the Kyoto Protocol and is the greatest reduction target of any large United States city. The cornerstone of the GREEN LA Plan is increasing the City's use of renewable energy to 35 percent by 2020.

4.3.2 City of Los Angeles Sustainable City pLAn (pLAn)

On April 8, 2015, Mayor Eric Garcetti released the pLAn, a roadmap to achieve back-to-basics short-term results while setting the path to strengthen and transform the City. The pLAn is made up of short-term (by 2017) and longer-term (by 2025 and 2035) targets in 14 categories to advance the City's environment, economy and equity. The pLAn provides strategies to create a more sustainable and livable city by: improving land use planning to promote neighborhood quality of life; conserving energy and water; mitigating and adapting to climate change; building transit options for an accessible future; promoting affordability and environmental justice; and restoring and reinventing the Los Angeles River. In 2019, Mayor Eric Garcetti released an update to the pLAn which accelerates previous sustainability targets and looks even further out to 2050. One provision of L.A.'s Green New Deal is the achievement of an entirely zero-emission bus fleet by the year 2030, which was adopted by the Los Angeles City Council in November 2017 (Council File 17-0739).

L.A.'s Green New Deal is an expanded vision for the Sustainability pLAn for achieving clean air and water and a stable climate in the City (through a zero-carbon grid, zero-carbon transportation, zero-carbon buildings, zero waste, and zero wasted water). It is intended to serve as a guide for creating an equitable and abundant economy in the City, powered by 100% renewable energy. It seeks to build the country's largest, cleanest, and most reliable urban electrical grid to power the next generation of green transportation and clean buildings; educate and train Angelenos to participate in the new green economy; and enact sustainable policies that prioritize economic opportunity.

4.3.3 Los Angeles Green Building Code

The City adopted the Green Building Code to reduce the City's carbon footprint. The City's Green Building Code applies to new buildings and alterations with building valuations over \$200,000 (residential and non-residential). The Green Building Code is based on the 2010 California Green Building Standards Code Title 24, Part 11, commonly known as CalGreen, that was developed and mandated by the state to attain consistency among the various jurisdictions within the state; reduce the building's energy and water use; and reduce waste (see discussion of CalGreen, above).

4.3.4 LADWP Power Strategic Long-Term Resource Plan (SLTRP)

The 2017 SLTRP is a 20-year roadmap that guides the LADWP power system in its efforts to supply reliable electricity in an environmentally responsible and cost-effective manner. One of the main focuses of the SLTRP is to reduce GHG emissions, while maintaining cost-competitive rates and reliable electric service. The SLTRP examines multiple strategies to reduce GHG emissions, including early coal replacement, accelerated renewable portfolio standard, energy efficiency, local solar, energy storage, and transportation electrification.

As LADWP starts to investigate, study, and determine the investments needed for a 100 percent clean energy portfolio, the 2017 SLTRP provides a path towards this goal with a combination of GHG reduction strategies, including early coal replacement two years ahead of schedule by 2025, accelerating renewable portfolio standard to 50 percent by 2025, 55 percent by 2030, and 65 percent by 2036, doubling of energy efficiency from 2017 through 2027, repowering coastal in-basin generating units with new, highly efficient potential clean energy projects by 2029 to provide grid reliability and critical ramping capability, accelerating electric transportation to absorb GHG emissions from the transportation sector, and investing in the Power System Reliability Program to maintain a robust and reliable power system.

5.0 IMPACT ANALYSIS

5.1 CEQA Analysis

5.1.1 CEQA Thresholds of Significance

According to the Environmental Checklist in Appendix G of the CEQA Guidelines, a project may have a significant environmental impact related to energy if it would:

- Would the project result in potentially significant environment impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Energy legislation, policies, and standards adopted by California and local governments were enacted and promulgated for the purpose of reducing energy consumption and improving efficiency (i.e., reducing the wasteful and inefficient use of energy). Therefore, for the purposes of this analysis, wasteful, inefficient, or unnecessary energy consumption are defined as circumstances in which the proposed project would conflict with applicable state or local energy legislation, policies, and standards or result in increased per capita energy consumption. Accordingly, inconsistency with legislation, policies, or standards designed to enhance energy efficiency and avoid wasteful or inefficient consumption is used to evaluate whether the proposed project would result in a significant impact related to energy resources and conservation.

In addition, Appendix F of the CEQA Guidelines states that the means for achieving the goal of energy conservation include the following:

1. Decreasing overall per capita energy consumption.
2. Decreasing reliance on fossil fuels such as coal, natural gas, and oil.
3. Increasing reliance on renewable energy sources.

The L.A. CEQA Thresholds Guide provides further guidance for determining the significance of impacts on energy. Based on the L.A. CEQA Thresholds Guide, a determination of impacts on energy would be made by considering the following factors:

- The extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure or capacity-enhancing alterations to existing facilities.
- Whether and when the needed infrastructure was anticipated by adopted plans.
- The degree to which the project designs and/or operations incorporate energy conservation measures, particularly those that go beyond City requirements.

The factors discussed under the L.A. CEQA Thresholds Guide are accounted for by the energy checklist questions of Appendix G of the CEQA Guidelines.

5.1.2 CEQA Impacts Assessment Methodology

Implementation of the proposed project would result in changes to direct and indirect energy resource consumption during short-term construction activities and long-term future operations. The analysis considered how construction and operation of the proposed project would directly and indirectly affect the regional consumption and commercial availability of electricity, natural gas, and petroleum-based transportation fuels. The assessment also evaluates whether construction or operation of the proposed project would potentially expend energy resources in a wasteful or inefficient manner.

5.1.2.1 Construction Energy

Construction of the proposed project would generally involve the use of off-road equipment and on-road motor vehicles equipped with internal combustion engines. The California Emissions Estimator Model (CalEEMod, Version 2020.4.0) was used to compile the inventory of parameters that would be required to complete construction of the proposed project, including schedule, equipment inventories, and vehicle trips (worker commutes, material deliveries, and disposal hauling). The engines of off-road equipment and on-road heavy-duty trucks were assumed to be diesel-fueled, which is the CalEEMod default, and crew commuting vehicles were assumed to use motor gasoline. Construction of the proposed project is not anticipated to require the use of electricity from the grid or natural gas connections to the existing distribution system.

Diesel fuel use by construction equipment was estimated using the default equipment parameters within the CalEEMod database for brake-horsepower (bhp) and load factors, project-specific daily equipment types and usage rates, and brake-specific fuel consumption (BSFC) factors from the CARB OFFROAD emissions model. Daily fuel consumption for each type of equipment was multiplied by the duration of each phase of construction activity to estimate total fuel use throughout the entire construction period. Annual average diesel fuel consumption for off-road equipment was also evaluated in the context of commercial sales within the County.

For on-road vehicles fuel consumption, CalEEMod produced estimates of daily carbon dioxide (CO₂) emissions resulting from exhaust of construction crew commute trips, material delivery trips, and disposal hauling trips. Carbon content factors per gallon for diesel fuel (10.21 kgCO₂/gal) and motor gasoline (8.78 kgCO₂/gal) were obtained from the United States Environmental Protection Agency (USEPA) Center for Corporate Climate Leadership emission factors index.¹ The diesel fuel and motor gasoline consumption by on-road vehicles involved in construction of the proposed project were estimated by calculating the total mass quantity of CO₂ emitted by vehicle trips of each fuel type and multiplying by the corresponding USEPA carbon content factor.

5.1.2.2 Operational Energy

CalEEMod was also used to partially estimate annual energy consumption associated with proposed EBMF operations. Operation of the proposed EBMF would require direct electricity for lighting, heating and ventilation, routine office work, and powering tools for servicing and maintenance of the BEBs, as well as BEB charging. Indirect electricity consumption would be associated with water and wastewater distribution systems. Electricity consumption for proposed project operations were quantified in CalEEMod, with the exception of BEB charging. Land uses selected in CalEEMod to characterize the proposed project included industrial park and automobile care center to reasonably quantify the electricity and water use during future operations. BEB charging was assumed to have an average duration of two and a half hours with a power supply of 100 kilowatts (kW), and it was determined that up to 76 BEBs may be charged overnight each day. This charging activity would require approximately 19 megawatt-hours (MWh) of electricity per day to operate the BEB fleet supported by the project. Detailed CalEEMod output files can be found in Attachment A.

5.1.3 Analysis of Project Impacts

- a) *Would the project result in potentially significant environment impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

Reference: Appendix G of the CEQA Guidelines.

¹USEPA, Emission Factors for Greenhouse Gas Inventories, March 2020.

Comment: A significant impact may occur if the proposed project would result in a wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation.

Less than significant impact. The following analysis considers construction and operational energy consumption of electricity and transportation fuels.

Construction. Regarding electricity, the proposed project would use small pieces of equipment powered by diesel-powered generators that were accounted for in the petroleum-based fuels analysis for construction. Equipment would not be plugged into the electric grid. Construction activities would not require the consumption of electricity.

Transportation fuels would be consumed for construction equipment, worker trips to and from construction sites, material delivery and disposal trips, and loading demolition debris into trucks. Off-road equipment diesel fuel consumption was estimated based on fuel consumption factors in the CARB OFFROAD model and on-road vehicle fuel consumption was estimated using CO₂ emissions from CalEEMod output and fuel carbon content conversion factors from the USEPA GHG inventory emission factor database. The analysis determined that off-road equipment would consume approximately 50,447.1 gallons of diesel fuel and that on-road diesel trucks would consume approximately 7,859.5 gallons of diesel fuel during the two-year construction period, averaging approximately 29,153.3 gallons per year for the combined end uses. Additionally, construction worker commuting would require approximately 16,884.3 gallons of motor gasoline over the two-year period, or 8,442.2 gallons annually on average.

The California Energy Commission estimates that the overall consumption of transportation fuel in California was 15.8 billion gallons in 2017 and would be between 12.3 and 12.7 billion gallons by 2030. According to CEC data, in 2019 Los Angeles County retail sales of petroleum fuels were approximately 3,559 million gallons of motor gasoline and 276 million gallons of diesel fuel. Therefore, the construction of the proposed project would increase countywide motor gasoline consumption by approximately 0.0002 percent and countywide diesel fuel consumption by approximately 0.01 percent for two years. These incremental increases in fuel consumption would be practically negligible and would not disproportionately burden the commercially available fuel reserves within Los Angeles County such that additional fuels would need to be refined.

The selected construction contractors would use a fleet of fuel-efficient vehicles compliant with state regulations for all work that would be required under the proposed project, which would minimize the demand for transportation fuels. Therefore, the proposed project would not result in a wasteful, inefficient, and unnecessary usage of energy; result in a substantial increase in energy demand that would affect local or regional energy supplies; or require additional capacity or infrastructure to meet increased demand. As a result, transportation fuel impacts during construction would be less than significant.

Operations. Operation of the proposed project is anticipated to begin in mid-2026 and the primary end uses of energy resources would include petroleum-based transportation fuels consumption for vehicle trips to and from the EBMF and electricity consumption

associated with standard building operations as well as BEB charging. The CARB EMFAC model was used to derive aggregate fleet average fuel consumption factors for Los Angeles County vehicles in 2026. According to the Transportation/Traffic Impact Analysis (Parsons 2021), the proposed project would generate approximately 759 daily vehicle trips and 6,271 daily vehicle miles traveled (VMT) attributed to employee commuting. Extrapolating the daily VMT over an entire year, annual EBMF operations would produce approximately 2,288,915 VMT and consume approximately 63,673 gallons of motor gasoline and 2,836 gallons of diesel fuel. These fuel consumption rates would represent an increase of approximately 0.002 percent of countywide motor gasoline consumption and 0.001 percent of countywide diesel fuel consumption.

Electricity to the project site would be provided by LADWP. The CalEEMod output and BEB charging analysis determined that typical facility lighting and power would require approximately 1,095.2 MWh and BEB charging would require approximately 6,935 MWh per year. The proposed project's peak electricity demand would be no more than 8 MW, and the LADWP capacity is approximately 8,000 MW with an instantaneous peak demand of 6,502 MW experience in August 2017. There is more than sufficient capacity within the existing LADWP infrastructure to support the implementation of the proposed project and its peak and sustained electricity requirements. Additionally, an on-site solar PV renewable energy installation would offset some of the EBMF electricity demands to an extent that is not quantifiable at this stage of the planning process.

Reductions in energy use at the site would also occur with the cessation of industrial activities due to the proposed demolition of the existing warehouse buildings on-site. Additionally, LADOT Transit operations at the South Yard would no longer occur once the proposed project is fully operational, eliminating energy resource consumption from 669 daily vehicle trips commuting to the South Yard as well as building energy use. Eventually, implementation of the proposed project would indirectly reduce regional CNG and propane demands associated with the existing LADOT South Yard fleet bus travel. Operation of the proposed project would not result in wasteful or inefficient use of transportation fuels and would not place a disproportionate burden on existing commercially available reserves. Therefore, the proposed project would not result in the wasteful, inefficient, and unnecessary usage of energy or a substantial increase in energy demand that would affect local or regional energy supplies.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Reference: L.A. CEQA Thresholds Guide (2006) (Section M.4); State CEQA Guidelines (2021) (Appendices F and G)

Comment: A significant impact may occur if the proposed project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Less than significant impact. Energy legislation, policies, and standards adopted by California and local governments were enacted and promulgated to reduce energy consumption and improve efficiency (i.e., reducing the wasteful and inefficient use of

energy). Therefore, for this analysis, wasteful, inefficient, or unnecessary are defined as circumstances in which the proposed project would conflict with applicable State or local energy legislation, policies, and standards or result in increased per capita energy consumption. Accordingly, inconsistency with legislation, policies, or standards designed to avoid wasteful, inefficient, and current citywide average, is used to evaluate whether the proposed project would result in a significant impact related to energy resources and conservation.

As discussed above, the implementation of the proposed project would not produce a peak electricity demand that would overburden the existing capacity of LADWP's infrastructure. In addition, the implementation of the proposed project would not place an undue burden on the existing petroleum-based transportation fuel supply. Although the proposed project would utilize electricity and transportation fuels, the project would support the LADOT conversion to an all-electric bus fleet in accordance with CARB's ICT regulation and would reduce City reliance on nonrenewable energy sources, consistent with the goals of the City's Green LA and Sustainable City pLAn. The project would also be built in compliance with the City's Green Building Code and CALGreen and would provide an on-site PV installation to reduce the demand for energy resources from LADWP. Furthermore, the operation of the proposed project would eventually displace the existing LADOT South Yard operations, which would lower the net electricity demand and nonrenewable petroleum-based fuels consumption. Thus, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

5.2 NEPA Analysis

5.2.1 No Build Alternative

The No Build Alternative proposes no improvements at the site and to the existing bus maintenance facilities at the South Yard. The main goal of the project is to build a modern maintenance facility to support a larger and cleaner zero-emissions bus fleet. The existing facility does not have sufficient capacity to accommodate the additional maintenance and storage requirements of the proposed transition to electric buses and expanded charging needs of an all-electric bus fleet. Under the No Build Alternative, the City would continue to use nonrenewable transportation fuels. In addition, the region would not realize the benefit related to adding a new source of solar power to the electric grid. The No Build Alternative would not realize energy benefits associated with citywide bus electrification.

No adverse effects related to energy resources would occur at the site under the No Build Alternative for the proposed project.

5.2.2 Build Alternative

Implementation of the Build Alternative would result in direct short-term, one-time expenditures of energy resources in the form of petroleum-based transportation fuels (i.e., diesel fuel and motor gasoline) during the two-year construction period. Construction activities would comply with best management practices such as maintaining equipment

in calibration with optimal manufacturer specifications and limiting the idling of engines not in use to no more than 5 minutes at any one particular location in accordance with the provisions of CARB Airborne Toxic Control Measure 2485. The one-time consumption of 58,306.6 gallons of diesel fuel and 16,884.3 gallons of motor gasoline over the 2 year construction period would be consistent with the typical construction energy requirements of projects of this nature and would not place an undue burden on commercially available reserves. Construction of the Build Alternative would not result in adverse environmental effects related to the consumption of nonrenewable energy resources or the wasteful or inefficient use of energy.

Long-term operations would require electricity for lighting, heating, ventilation, and air conditioning, powering tools and equipment, which would constitute direct energy effects, and additional indirect electricity for BEB charging. EBMF employee commuting vehicle trips would directly consume petroleum-based transportation fuels. The direct and indirect energy effects of the Build Alternative were quantified and disclosed above in 5.1.3, *Analysis of Project Impacts*. The building facilities to be constructed for the proposed project would comply with applicable provisions of the Los Angeles Green Building Code and 2019 CALGreen standards for energy efficiency and end use consumption. The EBMF would be more energy efficient than the existing LADOT South Yard on a per square foot basis and would provide critical infrastructure for the planned expansion of the LADOT Transit BEB fleet. Operation of the Build Alternative was estimated to require 1,095.2 MWh annually of direct electricity consumption, as well as up to 6,935 MWh of indirect consumption for future BEB charging. The net electricity demand would be lower following cessation of LADOT operations at the South Yard facility as well as on-site generation of electricity from the solar PV installation. Implementation of the Build Alternative would not use a disproportionate of electricity and would not operate in a wasteful or inefficient manner.

Vehicle trips commuting to the EBMF were estimated to require approximately 63,673 gallons of motor gasoline and 2,836 gallons of diesel fuel annually, which would decrease in future years as aggregate average fuel efficiencies of the regional vehicle fleet improve. Operational trips involved in the Build Alternative would support the energy-efficient EBMF, which is designed to enhance the regional infrastructure and accommodate LADOT Transit's vision for an electrified fleet. Existing reserves of petroleum-based fuels are more than sufficient to meet the needs of the Build Alternative. Long-term operation of the Build Alternative would not result in adverse effects to energy resources and would not interfere with or obstruct statewide and local initiatives to enhance energy efficiency and reduce waste.

6.0 RECOMMENDED MEASURES

Based on the analysis above, project impacts on energy would be less than significant, and no mitigation is required.

7.0 REFERENCES

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8.0 PREPARERS

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Attachment A – CalEEMod Output Files and Construction Energy Worksheet

Construction Equipment Diesel Fuel Consumption

Diesel Equipment			gal/bhp-hr
HP>100	BSFC (lb/hp-hr)	0.367	0.051625427
HP<100	BSFC (lb/hp-hr)	0.408	0.057392846
	Unit conversion (lb/gallon)	7.1089	

Phase Type	Start Date	End Date	Num Days Week	Num Days
Demolition	6/17/2024	8/16/2024	5	45
Site Preparation	8/19/2024	9/6/2024	5	15
Grading	9/9/2024	11/8/2024	5	45
Paving	11/11/2024	1/10/2025	5	45
Building Construction	1/13/2025	5/29/2026	5	360
Architectural Coating	3/30/2026	5/29/2026	5	45

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	gal/bhp-hr	gallons/day	Num Days	total gallons
Demolition	Concrete/Industrial Saws	2	4	81	0.73	0.0573928	27.1491117	45	1221.71003
Demolition	Excavators	2	6	158	0.38	0.0516254	37.1950878	45	1673.77895
Demolition	Tractors/Loaders/Backhoes	2	6	97	0.37	0.0573928	24.7179507	45	1112.30778
Site Preparation	Crawler Tractors	1	4	212	0.43	0.0516254	18.8246958	15	282.370437
Site Preparation	Excavators	2	6	158	0.38	0.0516254	37.1950878	15	557.926318
Site Preparation	Rubber Tired Dozers	1	4	247	0.4	0.0516254	20.4023689	15	306.035533
Site Preparation	Tractors/Loaders/Backhoes	2	6	97	0.37	0.0573928	24.7179507	15	370.769261
Grading	Excavators	2	6	158	0.38	0.0516254	37.1950878	45	1673.77895
Grading	Graders	1	4	187	0.41	0.0516254	15.832486	45	712.461872
Grading	Rubber Tired Dozers	1	4	247	0.4	0.0516254	20.4023689	45	918.106599
Grading	Tractors/Loaders/Backhoes	2	6	97	0.37	0.0573928	24.7179507	45	1112.30778
Paving	Pavers	2	6	130	0.42	0.0516254	33.82498	45	1522.1241
Paving	Paving Equipment	2	6	132	0.36	0.0516254	29.4388837	45	1324.74976
Paving	Rollers	2	6	80	0.38	0.0573928	20.9369101	45	942.160953
Building Construction	Cranes	1	4	231	0.29	0.0516254	13.8335495	360	4980.07782
Building Construction	Generator Sets	1	6	84	0.74	0.0573928	21.4052357	360	7705.88485
Building Construction	Rough Terrain Forklifts	2	6	100	0.4	0.0573928	27.5485659	360	9917.48372
Building Construction	Tractors/Loaders/Backhoes	2	6	97	0.37	0.0573928	24.7179507	360	8898.46227
Building Construction	Welders	1	6	46	0.45	0.0573928	7.12819142	360	2566.14891
Architectural Coating	Aerial Lifts	3	6	63	0.31	0.0573928	20.1758809	45	907.914642
Architectural Coating	Air Compressors	3	6	78	0.48	0.0573928	38.6781865	45	1740.51839

**Total Diesel
(Gallons) 50,447.1**

Construction On-Road Vehicles Fuel Consumption

USEPA 2020 Fuel Carbon Intensity Factors

kgCO2/gal-D	10.21
kgCO2/gal-G	8.78
lbCO2/gal-D	22.51
lbCO2/gal-G	19.36

Phase Type	Start Date	End Date	Num Days Week	Num Days
Demolition	6/17/2024	8/16/2024	5	45
Site Preparation	8/19/2024	9/6/2024	5	15
Grading	9/9/2024	11/8/2024	5	45
Paving	11/11/2024	1/10/2025	5	45
Building Construction	1/13/2025	5/29/2026	5	360
Architectural Coating	3/30/2026	5/29/2026	5	45

						On-Road Vehicles Total Diesel 7,859.5	On-Road Vehicles Total Gasoline 16,884.3
<u>Phase</u>	<u>Days</u>		<u>lbCO2/day</u>	<u>Fuel</u>	<u>Gallons</u>		
Demolition	45	Hauling	1,522.17	D	3043.09474		
Demolition	45	Vendor	0	D	0		
Demolition	45	Worker	375.816	G	873.694337	Equip Diesel 50,447.1	
Site Preparation	15	Hauling	0	D	0	Total	
Site Preparation	15	Vendor	0	D	0	58,306.6	
Site Preparation	15	Worker	375.816	G	291.231446		
Grading	45	Hauling	0	D	0		
Grading	45	Vendor	0	D	0		
Grading	45	Worker	375.816	G	873.694337		
Paving	45	Hauling	0	D	0		
Paving	45	Vendor	197.6143	D	395.067584		
Paving	45	Worker	375.816	G	873.694337		
Building Construction	360	Hauling	0	D	0		
Building Construction	360	Vendor	271.6875	D	4345.22904		
Building Construction	360	Worker	733.3286	G	13638.6965		
Architectural Coating	45	Hauling	0	D	0		
Architectural Coating	45	Vendor	38.0932	D	76.1553618		
Architectural Coating	45	Worker	143.3766	G	333.32089		

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**LADOT Electric Bus Maintenance Facility****Los Angeles-South Coast County, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	20.38	1000sqft	0.47	20,384.00	0
Other Asphalt Surfaces	109.30	1000sqft	2.51	109,300.00	0
Parking Lot	69.60	1000sqft	1.60	69,600.00	0
Unenclosed Parking with Elevator	196.56	1000sqft	0.00	196,560.00	0
Automobile Care Center	40.03	1000sqft	0.92	40,032.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	11			Operational Year	2026
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	691.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Auto Care Center = Bus Maintenance (35,912 sf) + Bus Washing (4,120 sf)
 Industrial Park = Ops Bldg (12,234 sf) + Service Bldg (8,150 sf)
 Total Lot Acreage = 5.5 acres.

Construction Phase - Preliminary Schedule - Earliest possible completion.

Off-road Equipment - Painting/Finishing/Striping

Off-road Equipment - Construction Inventory

Off-road Equipment - Demolition Inventory (LABOE)

Off-road Equipment - Grading Inventory

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - Paving Inventory

Off-road Equipment - Site Prep Inventory (LABOE)

Trips and VMT - Anticipated Vehicle Activity Inventory

Demolition - Existing Buildings = 32ksf & 118.8ksf

Grading -

Architectural Coating - Compliance with SCAQMD Rule 403 uses 50 g/L limit for building envelope.

Vehicle Trips - Traffic Memo: 759 trips & 6,271 daily VMT

Construction Off-road Equipment Mitigation - Compliance with SCAQMD Rule 403 requires 3x daily watering.

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	230.00	360.00
tblConstructionPhase	NumDays	20.00	45.00
tblLandUse	LandUseSquareFeet	20,380.00	20,384.00
tblLandUse	LandUseSquareFeet	40,030.00	40,032.00
tblLandUse	LotAcreage	4.51	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblTripsAndVMT	HaulingTripNumber	686.00	1,080.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	71.00	14.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	40.00
tblTripsAndVMT	WorkerTripNumber	179.00	80.00
tblTripsAndVMT	WorkerTripNumber	36.00	16.00
tblVehicleTrips	CC_TTP	28.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	CW_TL	16.60	8.27
tblVehicleTrips	CW_TTP	59.00	100.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	2.54	37.25
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	1.24	37.25
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	3.37	37.25

2.0 Emissions Summary

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0765	0.6708	0.9044	1.9500e-003	0.2220	0.0274	0.2494	0.0738	0.0254	0.0992	0.0000	176.4839	176.4839	0.0371	6.0100e-003	179.2032
2025	0.1435	1.1713	1.8455	3.7900e-003	0.1241	0.0408	0.1649	0.0332	0.0386	0.0718	0.0000	337.6005	337.6005	0.0545	6.6200e-003	340.9335
2026	0.3697	0.5888	0.9400	1.8800e-003	0.0559	0.0207	0.0765	0.0150	0.0197	0.0347	0.0000	166.7655	166.7655	0.0256	2.8400e-003	168.2501
Maximum	0.3697	1.1713	1.8455	3.7900e-003	0.2220	0.0408	0.2494	0.0738	0.0386	0.0992	0.0000	337.6005	337.6005	0.0545	6.6200e-003	340.9335

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0303	0.1582	1.0364	1.9500e-003	0.1120	2.8200e-003	0.1148	0.0356	2.7800e-003	0.0384	0.0000	176.4837	176.4837	0.0371	6.0100e-003	179.2031
2025	0.0624	0.3050	2.0142	3.7900e-003	0.1241	4.8400e-003	0.1289	0.0332	4.7700e-003	0.0380	0.0000	337.6002	337.6002	0.0545	6.6200e-003	340.9332
2026	0.3270	0.1845	1.0187	1.8800e-003	0.0559	2.4100e-003	0.0583	0.0150	2.3900e-003	0.0173	0.0000	166.7654	166.7654	0.0256	2.8400e-003	168.2500
Maximum	0.3270	0.3050	2.0142	3.7900e-003	0.1241	4.8400e-003	0.1289	0.0356	4.7700e-003	0.0384	0.0000	337.6002	337.6002	0.0545	6.6200e-003	340.9332

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	28.83	73.35	-10.28	0.00	27.39	88.66	38.48	31.32	88.12	54.44	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-17-2024	9-16-2024	0.3466	0.1136
2	9-17-2024	12-16-2024	0.3234	0.0544
3	12-17-2024	3-16-2025	0.3039	0.0820
4	3-17-2025	6-16-2025	0.3321	0.0923
5	6-17-2025	9-16-2025	0.3318	0.0919
6	9-17-2025	12-16-2025	0.3298	0.0925
7	12-17-2025	3-16-2026	0.3256	0.0909
8	3-17-2026	6-16-2026	0.6706	0.4231
		Highest	0.6706	0.4231

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2763	5.0000e-005	5.5500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0108	0.0108	3.0000e-005	0.0000	0.0115
Energy	5.0100e-003	0.0456	0.0383	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	393.3507	393.3507	0.0173	2.9000e-003	394.6474
Mobile	0.3545	0.3802	3.5292	7.6500e-003	0.8587	5.6000e-003	0.8643	0.2291	5.2000e-003	0.2343	0.0000	730.8212	730.8212	0.0501	0.0313	741.3920
Waste						0.0000	0.0000		0.0000	0.0000	36.1689	0.0000	36.1689	2.1375	0.0000	89.6070
Water						0.0000	0.0000		0.0000	0.0000	2.6900	42.7026	45.3925	0.2783	6.7700e-003	54.3682
Total	0.6358	0.4258	3.5730	7.9200e-003	0.8587	9.0800e-003	0.8678	0.2291	8.6800e-003	0.2378	38.8589	1,166.8852	1,205.7441	2.4833	0.0409	1,280.0261

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2763	5.0000e-005	5.5500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0108	0.0108	3.0000e-005	0.0000	0.0115
Energy	5.0100e-003	0.0456	0.0383	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	393.3507	393.3507	0.0173	2.9000e-003	394.6474
Mobile	0.3545	0.3802	3.5292	7.6500e-003	0.8587	5.6000e-003	0.8643	0.2291	5.2000e-003	0.2343	0.0000	730.8212	730.8212	0.0501	0.0313	741.3920
Waste						0.0000	0.0000		0.0000	0.0000	36.1689	0.0000	36.1689	2.1375	0.0000	89.6070
Water						0.0000	0.0000		0.0000	0.0000	2.6900	42.2116	44.9015	0.2783	6.7700e-003	53.8758
Total	0.6358	0.4258	3.5730	7.9200e-003	0.8587	9.0800e-003	0.8678	0.2291	8.6800e-003	0.2378	38.8589	1,166.3942	1,205.2531	2.4833	0.0409	1,279.5337

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.04

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/17/2024	8/16/2024	5	45	
2	Site Preparation	Site Preparation	8/19/2024	9/6/2024	5	15	
3	Grading	Grading	9/9/2024	11/8/2024	5	45	

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	11/11/2024	1/10/2025	5	45
5	Building Construction	Building Construction	1/13/2025	5/29/2026	5	360
6	Architectural Coating	Architectural Coating	3/30/2026	5/29/2026	5	45

Acres of Grading (Site Preparation Phase): 7.5**Acres of Grading (Grading Phase): 22.5****Acres of Paving: 4.11****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 90,624; Non-Residential Outdoor: 30,208; Striped Parking Area: 22,528 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	4.00	81	0.73
Demolition	Excavators	2	6.00	158	0.38
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Crawler Tractors	1	4.00	212	0.43
Site Preparation	Excavators	2	6.00	158	0.38
Site Preparation	Rubber Tired Dozers	1	4.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Excavators	2	6.00	158	0.38
Grading	Graders	1	4.00	187	0.41
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Pavers	2	6.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Generator Sets	1	6.00	84	0.74
Building Construction	Rough Terrain Forklifts	2	6.00	100	0.40

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Welders	1	6.00	46	0.45
Architectural Coating	Aerial Lifts	3	6.00	63	0.31
Architectural Coating	Air Compressors	3	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	40.00	0.00	1,080.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	6	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	40.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	80.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	6	16.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2024****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0742	0.0000	0.0742	0.0112	0.0000	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0180	0.1506	0.2678	4.2000e-004		7.0600e-003	7.0600e-003		6.7000e-003	6.7000e-003	0.0000	36.6535	36.6535	8.5200e-003	0.0000	36.8664
Total	0.0180	0.1506	0.2678	4.2000e-004	0.0742	7.0600e-003	0.0813	0.0112	6.7000e-003	0.0179	0.0000	36.6535	36.6535	8.5200e-003	0.0000	36.8664

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1300e-003	0.0745	0.0192	3.1000e-004	9.2900e-003	4.5000e-004	9.7400e-003	2.5500e-003	4.3000e-004	2.9800e-003	0.0000	31.0507	31.0507	1.7500e-003	4.9300e-003	32.5644
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6700e-003	2.0300e-003	0.0286	8.0000e-005	9.8600e-003	6.0000e-005	9.9200e-003	2.6200e-003	5.0000e-005	2.6700e-003	0.0000	7.7853	7.7853	1.9000e-004	1.9000e-004	7.8466
Total	3.8000e-003	0.0765	0.0479	3.9000e-004	0.0192	5.1000e-004	0.0197	5.1700e-003	4.8000e-004	5.6500e-003	0.0000	38.8360	38.8360	1.9400e-003	5.1200e-003	40.4110

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.2 Demolition - 2024****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0290	0.0000	0.0290	4.3800e-003	0.0000	4.3800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8300e-003	0.0210	0.2981	4.2000e-004		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	36.6534	36.6534	8.5200e-003	0.0000	36.8664
Total	4.8300e-003	0.0210	0.2981	4.2000e-004	0.0290	6.4000e-004	0.0296	4.3800e-003	6.4000e-004	5.0200e-003	0.0000	36.6534	36.6534	8.5200e-003	0.0000	36.8664

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1300e-003	0.0745	0.0192	3.1000e-004	9.2900e-003	4.5000e-004	9.7400e-003	2.5500e-003	4.3000e-004	2.9800e-003	0.0000	31.0507	31.0507	1.7500e-003	4.9300e-003	32.5644
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6700e-003	2.0300e-003	0.0286	8.0000e-005	9.8600e-003	6.0000e-005	9.9200e-003	2.6200e-003	5.0000e-005	2.6700e-003	0.0000	7.7853	7.7853	1.9000e-004	1.9000e-004	7.8466
Total	3.8000e-003	0.0765	0.0479	3.9000e-004	0.0192	5.1000e-004	0.0197	5.1700e-003	4.8000e-004	5.6500e-003	0.0000	38.8360	38.8360	1.9400e-003	5.1200e-003	40.4110

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2024****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0266	0.0000	0.0266	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.8400e-003	0.0766	0.0819	1.5000e-004		3.4200e-003	3.4200e-003		3.1500e-003	3.1500e-003	0.0000	13.5796	13.5796	4.3900e-003	0.0000	13.6894
Total	7.8400e-003	0.0766	0.0819	1.5000e-004	0.0266	3.4200e-003	0.0300	0.0128	3.1500e-003	0.0160	0.0000	13.5796	13.5796	4.3900e-003	0.0000	13.6894

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	6.8000e-004	9.5500e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.5951	2.5951	6.0000e-005	6.0000e-005	2.6155
Total	8.9000e-004	6.8000e-004	9.5500e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.5951	2.5951	6.0000e-005	6.0000e-005	2.6155

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.3 Site Preparation - 2024****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0104	0.0000	0.0104	5.0100e-003	0.0000	5.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9000e-003	8.2200e-003	0.0981	1.5000e-004		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	13.5796	13.5796	4.3900e-003	0.0000	13.6894
Total	1.9000e-003	8.2200e-003	0.0981	1.5000e-004	0.0104	2.5000e-004	0.0106	5.0100e-003	2.5000e-004	5.2600e-003	0.0000	13.5796	13.5796	4.3900e-003	0.0000	13.6894

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	6.8000e-004	9.5500e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.5951	2.5951	6.0000e-005	6.0000e-005	2.6155
Total	8.9000e-004	6.8000e-004	9.5500e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	8.9000e-004	0.0000	2.5951	2.5951	6.0000e-005	6.0000e-005	2.6155

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Grading - 2024****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0797	0.0000	0.0797	0.0385	0.0000	0.0385	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0228	0.2232	0.2395	4.5000e-004		9.7000e-003	9.7000e-003		8.9300e-003	8.9300e-003	0.0000	39.5331	39.5331	0.0128	0.0000	39.8528
Total	0.0228	0.2232	0.2395	4.5000e-004	0.0797	9.7000e-003	0.0894	0.0385	8.9300e-003	0.0475	0.0000	39.5331	39.5331	0.0128	0.0000	39.8528

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6700e-003	2.0300e-003	0.0286	8.0000e-005	9.8600e-003	6.0000e-005	9.9200e-003	2.6200e-003	5.0000e-005	2.6700e-003	0.0000	7.7853	7.7853	1.9000e-004	1.9000e-004	7.8466
Total	2.6700e-003	2.0300e-003	0.0286	8.0000e-005	9.8600e-003	6.0000e-005	9.9200e-003	2.6200e-003	5.0000e-005	2.6700e-003	0.0000	7.7853	7.7853	1.9000e-004	1.9000e-004	7.8466

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.4 Grading - 2024****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0311	0.0000	0.0311	0.0150	0.0000	0.0150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5200e-003	0.0239	0.2879	4.5000e-004		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	39.5331	39.5331	0.0128	0.0000	39.8527
Total	5.5200e-003	0.0239	0.2879	4.5000e-004	0.0311	7.4000e-004	0.0318	0.0150	7.4000e-004	0.0158	0.0000	39.5331	39.5331	0.0128	0.0000	39.8527

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6700e-003	2.0300e-003	0.0286	8.0000e-005	9.8600e-003	6.0000e-005	9.9200e-003	2.6200e-003	5.0000e-005	2.6700e-003	0.0000	7.7853	7.7853	1.9000e-004	1.9000e-004	7.8466
Total	2.6700e-003	2.0300e-003	0.0286	8.0000e-005	9.8600e-003	6.0000e-005	9.9200e-003	2.6200e-003	5.0000e-005	2.6700e-003	0.0000	7.7853	7.7853	1.9000e-004	1.9000e-004	7.8466

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2024****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0137	0.1322	0.2029	3.2000e-004		6.5000e-003	6.5000e-003		5.9800e-003	5.9800e-003	0.0000	27.7868	27.7868	8.9900e-003	0.0000	28.0115
Paving	4.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0181	0.1322	0.2029	3.2000e-004		6.5000e-003	6.5000e-003		5.9800e-003	5.9800e-003	0.0000	27.7868	27.7868	8.9900e-003	0.0000	28.0115

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-004	7.4700e-003	2.7300e-003	3.0000e-005	1.1700e-003	4.0000e-005	1.2000e-003	3.4000e-004	3.0000e-005	3.7000e-004	0.0000	3.3132	3.3132	1.1000e-004	4.8000e-004	3.4583
Worker	2.1900e-003	1.6700e-003	0.0236	7.0000e-005	8.1100e-003	5.0000e-005	8.1600e-003	2.1500e-003	4.0000e-005	2.2000e-003	0.0000	6.4012	6.4012	1.6000e-004	1.6000e-004	6.4517
Total	2.3900e-003	9.1400e-003	0.0263	1.0000e-004	9.2800e-003	9.0000e-005	9.3600e-003	2.4900e-003	7.0000e-005	2.5700e-003	0.0000	9.7145	9.7145	2.7000e-004	6.4000e-004	9.9100

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2024****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8900e-003	0.0169	0.2400	3.2000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	27.7868	27.7868	8.9900e-003	0.0000	28.0115
Paving	4.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.3200e-003	0.0169	0.2400	3.2000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	27.7868	27.7868	8.9900e-003	0.0000	28.0115

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-004	7.4700e-003	2.7300e-003	3.0000e-005	1.1700e-003	4.0000e-005	1.2000e-003	3.4000e-004	3.0000e-005	3.7000e-004	0.0000	3.3132	3.3132	1.1000e-004	4.8000e-004	3.4583
Worker	2.1900e-003	1.6700e-003	0.0236	7.0000e-005	8.1100e-003	5.0000e-005	8.1600e-003	2.1500e-003	4.0000e-005	2.2000e-003	0.0000	6.4012	6.4012	1.6000e-004	1.6000e-004	6.4517
Total	2.3900e-003	9.1400e-003	0.0263	1.0000e-004	9.2800e-003	9.0000e-005	9.3600e-003	2.4900e-003	7.0000e-005	2.5700e-003	0.0000	9.7145	9.7145	2.7000e-004	6.4000e-004	9.9100

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2025****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7500e-003	0.0257	0.0437	7.0000e-005		1.2600e-003	1.2600e-003		1.1600e-003	1.1600e-003	0.0000	6.0058	6.0058	1.9400e-003	0.0000	6.0543
Paving	9.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.7100e-003	0.0257	0.0437	7.0000e-005		1.2600e-003	1.2600e-003		1.1600e-003	1.1600e-003	0.0000	6.0058	6.0058	1.9400e-003	0.0000	6.0543

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.6100e-003	5.8000e-004	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.7035	0.7035	2.0000e-005	1.0000e-004	0.7343
Worker	4.4000e-004	3.2000e-004	4.7500e-003	1.0000e-005	1.7500e-003	1.0000e-005	1.7600e-003	4.7000e-004	1.0000e-005	4.7000e-004	0.0000	1.3503	1.3503	3.0000e-005	3.0000e-005	1.3605
Total	4.8000e-004	1.9300e-003	5.3300e-003	2.0000e-005	2.0000e-003	2.0000e-005	2.0200e-003	5.4000e-004	2.0000e-005	5.5000e-004	0.0000	2.0538	2.0538	5.0000e-005	1.3000e-004	2.0948

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.5 Paving - 2025****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.4000e-004	3.6500e-003	0.0519	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	6.0058	6.0058	1.9400e-003	0.0000	6.0543
Paving	9.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.8000e-003	3.6500e-003	0.0519	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	6.0058	6.0058	1.9400e-003	0.0000	6.0543

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.6100e-003	5.8000e-004	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.7035	0.7035	2.0000e-005	1.0000e-004	0.7343
Worker	4.4000e-004	3.2000e-004	4.7500e-003	1.0000e-005	1.7500e-003	1.0000e-005	1.7600e-003	4.7000e-004	1.0000e-005	4.7000e-004	0.0000	1.3503	1.3503	3.0000e-005	3.0000e-005	1.3605
Total	4.8000e-004	1.9300e-003	5.3300e-003	2.0000e-005	2.0000e-003	2.0000e-005	2.0200e-003	5.4000e-004	2.0000e-005	5.5000e-004	0.0000	2.0538	2.0538	5.0000e-005	1.3000e-004	2.0948

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Building Construction - 2025****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1094	1.0520	1.4705	2.4800e-003		0.0386	0.0386		0.0365	0.0365	0.0000	212.9876	212.9876	0.0494	0.0000	214.2237
Total	0.1094	1.0520	1.4705	2.4800e-003		0.0386	0.0386		0.0365	0.0365	0.0000	212.9876	212.9876	0.0494	0.0000	214.2237

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8800e-003	0.0712	0.0257	3.2000e-004	0.0112	3.5000e-004	0.0115	3.2200e-003	3.3000e-004	3.5500e-003	0.0000	31.1470	31.1470	1.0900e-003	4.4900e-003	32.5121
Worker	0.0281	0.0205	0.3003	9.0000e-004	0.1109	6.2000e-004	0.1115	0.0295	5.7000e-004	0.0300	0.0000	85.4064	85.4064	1.9200e-003	1.9900e-003	86.0486
Total	0.0300	0.0916	0.3260	1.2200e-003	0.1221	9.7000e-004	0.1230	0.0327	9.0000e-004	0.0336	0.0000	116.5533	116.5533	3.0100e-003	6.4800e-003	118.5607

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Building Construction - 2025****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0301	0.2078	1.6310	2.4800e-003		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	212.9873	212.9873	0.0494	0.0000	214.2234
Total	0.0301	0.2078	1.6310	2.4800e-003		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	212.9873	212.9873	0.0494	0.0000	214.2234

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8800e-003	0.0712	0.0257	3.2000e-004	0.0112	3.5000e-004	0.0115	3.2200e-003	3.3000e-004	3.5500e-003	0.0000	31.1470	31.1470	1.0900e-003	4.4900e-003	32.5121
Worker	0.0281	0.0205	0.3003	9.0000e-004	0.1109	6.2000e-004	0.1115	0.0295	5.7000e-004	0.0300	0.0000	85.4064	85.4064	1.9200e-003	1.9900e-003	86.0486
Total	0.0300	0.0916	0.3260	1.2200e-003	0.1221	9.7000e-004	0.1230	0.0327	9.0000e-004	0.0336	0.0000	116.5533	116.5533	3.0100e-003	6.4800e-003	118.5607

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Building Construction - 2026****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0463	0.4449	0.6219	1.0500e-003		0.0163	0.0163		0.0154	0.0154	0.0000	90.0778	90.0778	0.0209	0.0000	90.6005
Total	0.0463	0.4449	0.6219	1.0500e-003		0.0163	0.0163		0.0154	0.0154	0.0000	90.0778	90.0778	0.0209	0.0000	90.6005

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.8000e-004	0.0299	0.0107	1.3000e-004	4.7200e-003	1.5000e-004	4.8700e-003	1.3600e-003	1.4000e-004	1.5000e-003	0.0000	12.9285	12.9285	4.6000e-004	1.8600e-003	13.4957
Worker	0.0112	7.8500e-003	0.1194	3.7000e-004	0.0469	2.5000e-004	0.0472	0.0125	2.3000e-004	0.0127	0.0000	35.3096	35.3096	7.4000e-004	7.9000e-004	35.5648
Total	0.0120	0.0377	0.1301	5.0000e-004	0.0516	4.0000e-004	0.0520	0.0138	3.7000e-004	0.0142	0.0000	48.2381	48.2381	1.2000e-003	2.6500e-003	49.0605

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.6 Building Construction - 2026****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0127	0.0879	0.6898	1.0500e-003		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	90.0776	90.0776	0.0209	0.0000	90.6004
Total	0.0127	0.0879	0.6898	1.0500e-003		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	90.0776	90.0776	0.0209	0.0000	90.6004

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.8000e-004	0.0299	0.0107	1.3000e-004	4.7200e-003	1.5000e-004	4.8700e-003	1.3600e-003	1.4000e-004	1.5000e-003	0.0000	12.9285	12.9285	4.6000e-004	1.8600e-003	13.4957
Worker	0.0112	7.8500e-003	0.1194	3.7000e-004	0.0469	2.5000e-004	0.0472	0.0125	2.3000e-004	0.0127	0.0000	35.3096	35.3096	7.4000e-004	7.9000e-004	35.5648
Total	0.0120	0.0377	0.1301	5.0000e-004	0.0516	4.0000e-004	0.0520	0.0138	3.7000e-004	0.0142	0.0000	48.2381	48.2381	1.2000e-003	2.6500e-003	49.0605

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 Architectural Coating - 2026****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1037	0.1774	2.9000e-004		3.9300e-003	3.9300e-003		3.8900e-003	3.8900e-003	0.0000	24.7030	24.7030	3.3600e-003	0.0000	24.7869
Total	0.3105	0.1037	0.1774	2.9000e-004		3.9300e-003	3.9300e-003		3.8900e-003	3.8900e-003	0.0000	24.7030	24.7030	3.3600e-003	0.0000	24.7869

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.8000e-003	6.4000e-004	1.0000e-005	2.8000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.7768	0.7768	3.0000e-005	1.1000e-004	0.8108
Worker	9.4000e-004	6.6000e-004	0.0100	3.0000e-005	3.9400e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	2.9700	2.9700	6.0000e-005	7.0000e-005	2.9914
Total	9.9000e-004	2.4600e-003	0.0107	4.0000e-005	4.2200e-003	3.0000e-005	4.2600e-003	1.1300e-003	3.0000e-005	1.1600e-003	0.0000	3.7467	3.7467	9.0000e-005	1.8000e-004	3.8023

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**3.7 Architectural Coating - 2026****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-003	0.0565	0.1882	2.9000e-004		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	24.7030	24.7030	3.3600e-003	0.0000	24.7868
Total	0.3013	0.0565	0.1882	2.9000e-004		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	24.7030	24.7030	3.3600e-003	0.0000	24.7868

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.8000e-003	6.4000e-004	1.0000e-005	2.8000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.7768	0.7768	3.0000e-005	1.1000e-004	0.8108
Worker	9.4000e-004	6.6000e-004	0.0100	3.0000e-005	3.9400e-003	2.0000e-005	3.9700e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	2.9700	2.9700	6.0000e-005	7.0000e-005	2.9914
Total	9.9000e-004	2.4600e-003	0.0107	4.0000e-005	4.2200e-003	3.0000e-005	4.2600e-003	1.1300e-003	3.0000e-005	1.1600e-003	0.0000	3.7467	3.7467	9.0000e-005	1.8000e-004	3.8023

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3545	0.3802	3.5292	7.6500e-003	0.8587	5.6000e-003	0.8643	0.2291	5.2000e-003	0.2343	0.0000	730.8212	730.8212	0.0501	0.0313	741.3920
Unmitigated	0.3545	0.3802	3.5292	7.6500e-003	0.8587	5.6000e-003	0.8643	0.2291	5.2000e-003	0.2343	0.0000	730.8212	730.8212	0.0501	0.0313	741.3920

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Industrial Park	759.16	759.16	759.16	2,285,269	2,285,269
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	759.16	759.16	759.16	2,285,269	2,285,269

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	33.00	48.00	19.00	21	51	28
Industrial Park	8.27	8.40	6.90	100.00	0.00	0.00	100	0	0

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unenclosed Parking with	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.537891	0.065289	0.189998	0.126515	0.023567	0.006518	0.011114	0.008084	0.000933	0.000591	0.025474	0.000708	0.003318
Industrial Park	0.537891	0.065289	0.189998	0.126515	0.023567	0.006518	0.011114	0.008084	0.000933	0.000591	0.025474	0.000708	0.003318
Other Asphalt Surfaces	0.537891	0.065289	0.189998	0.126515	0.023567	0.006518	0.011114	0.008084	0.000933	0.000591	0.025474	0.000708	0.003318
Parking Lot	0.537891	0.065289	0.189998	0.126515	0.023567	0.006518	0.011114	0.008084	0.000933	0.000591	0.025474	0.000708	0.003318
Unenclosed Parking with Elevator	0.537891	0.065289	0.189998	0.126515	0.023567	0.006518	0.011114	0.008084	0.000933	0.000591	0.025474	0.000708	0.003318

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	343.7686	343.7686	0.0164	1.9900e-003	344.7706
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	343.7686	343.7686	0.0164	1.9900e-003	344.7706
NaturalGas Mitigated	5.0100e-003	0.0456	0.0383	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.5821	49.5821	9.5000e-004	9.1000e-004	49.8768
NaturalGas Unmitigated	5.0100e-003	0.0456	0.0383	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.5821	49.5821	9.5000e-004	9.1000e-004	49.8768

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	718975	3.8800e-003	0.0352	0.0296	2.1000e-004		2.6800e-003	2.6800e-003		2.6800e-003	2.6800e-003	0.0000	38.3672	38.3672	7.4000e-004	7.0000e-004	38.5952
Industrial Park	210159	1.1300e-003	0.0103	8.6500e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.2149	11.2149	2.1000e-004	2.1000e-004	11.2815
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		5.0100e-003	0.0455	0.0383	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.5821	49.5821	9.5000e-004	9.1000e-004	49.8768

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.2 Energy by Land Use - NaturalGas****Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	718975	3.8800e-003	0.0352	0.0296	2.1000e-004		2.6800e-003	2.6800e-003		2.6800e-003	2.6800e-003	0.0000	38.3672	38.3672	7.4000e-004	7.0000e-004	38.5952
Industrial Park	210159	1.1300e-003	0.0103	8.6500e-003	6.0000e-005		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	11.2149	11.2149	2.1000e-004	2.1000e-004	11.2815
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		5.0100e-003	0.0455	0.0383	2.7000e-004		3.4600e-003	3.4600e-003		3.4600e-003	3.4600e-003	0.0000	49.5821	49.5821	9.5000e-004	9.1000e-004	49.8768

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	434748	136.4572	6.5100e-003	7.9000e-004	136.8549
Industrial Park	254800	79.9758	3.8100e-003	4.6000e-004	80.2089
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	24360	7.6460	3.6000e-004	4.0000e-005	7.6683
Unenclosed Parking with Elevator	381326	119.6895	5.7100e-003	6.9000e-004	120.0384
Total		343.7686	0.0164	1.9800e-003	344.7706

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**5.3 Energy by Land Use - Electricity****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	434748	136.4572	6.5100e-003	7.9000e-004	136.8549
Industrial Park	254800	79.9758	3.8100e-003	4.6000e-004	80.2089
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	24360	7.6460	3.6000e-004	4.0000e-005	7.6683
Unenclosed Parking with Elevator	381326	119.6895	5.7100e-003	6.9000e-004	120.0384
Total		343.7686	0.0164	1.9800e-003	344.7706

6.0 Area Detail**6.1 Mitigation Measures Area**

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2763	5.0000e-005	5.5500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0108	0.0108	3.0000e-005	0.0000	0.0115
Unmitigated	0.2763	5.0000e-005	5.5500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0108	0.0108	3.0000e-005	0.0000	0.0115

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0332					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2426					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1000e-004	5.0000e-005	5.5500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0108	0.0108	3.0000e-005	0.0000	0.0115
Total	0.2763	5.0000e-005	5.5500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0108	0.0108	3.0000e-005	0.0000	0.0115

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0332					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2426					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1000e-004	5.0000e-005	5.5500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0108	0.0108	3.0000e-005	0.0000	0.0115
Total	0.2763	5.0000e-005	5.5500e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0108	0.0108	3.0000e-005	0.0000	0.0115

7.0 Water Detail**7.1 Mitigation Measures Water**

Use Water Efficient Irrigation System

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	44.9015	0.2783	6.7700e-003	53.8758
Unmitigated	45.3925	0.2783	6.7700e-003	54.3682

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	3.76607 / 2.30823	24.6359	0.1238	3.0300e-003	28.6356
Industrial Park	4.71288 / 0	20.7567	0.1545	3.7400e-003	25.7326
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		45.3925	0.2783	6.7700e-003	54.3682

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	3.76607 / 2.16743	24.1449	0.1238	3.0300e-003	28.1432
Industrial Park	4.71288 / 0	20.7567	0.1545	3.7400e-003	25.7326
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		44.9015	0.2783	6.7700e-003	53.8758

8.0 Waste Detail**8.1 Mitigation Measures Waste**

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	36.1689	2.1375	0.0000	89.6070
Unmitigated	36.1689	2.1375	0.0000	89.6070

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	152.91	31.0394	1.8344	0.0000	76.8987
Industrial Park	25.27	5.1296	0.3032	0.0000	12.7083
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		36.1689	2.1375	0.0000	89.6070

LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**8.2 Waste by Land Use****Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	152.91	31.0394	1.8344	0.0000	76.8987
Industrial Park	25.27	5.1296	0.3032	0.0000	12.7083
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		36.1689	2.1375	0.0000	89.6070

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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LADOT Electric Bus Maintenance Facility - Los Angeles-South Coast County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**User Defined Equipment**

Equipment Type	Number
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11.0 Vegetation
