GLOBAL CLIMATE CHANGE

Liberty High School
County of San Diego, CA

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EXECUTIVE SUMMARY

This analysis has been completed in order to quantify Greenhouse Gas (GHG) emissions from the Project and was prepared according to guidelines established within the California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB32), Senate Bill 97 (SB97), California Environmental Quality Act (CEQA) and the County of San Diego's Guidelines. Greenhouse Gasses analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simplify greenhouse gas calculations, both CH_4 and N_2O are converted to equivalent amounts of CO_2 and are identified as CO_2e.

The proposed Liberty High Project consists of the construction of a new Charter High School site. The proposed Project consists of the construction of a new Charter High School on an 7.7 acre parcel. The Project requests a Major Use Permit (MUP) to allow for the development of a 450 student high school (9^{th} thru 12^{th} grade). Classes will be held in a proposed 48,000 square foot, two–story building that will contain 22 classrooms and an administrative office.

The Project would also construct at least a 90-Kilowatt (KW) solar/photovoltaic (PV) system and install low flow water fixtures within the development. Furthermore, the Project would install 2 Level II Electric Vehicle (EV) chargers or one dual port Level II EV charger within the common parking area of this Project

All phases (i.e. grading, paving and construction) of the proposed Project are anticipated to start early 2020 with construction and full operations would be expected in the 2020-2021 school year. Based on findings within the Air Quality (AQ) report, Tier 4 equipment with Diesel Particulate Filters (DPF) or better equipment was recommended as a mitigation measure and have been applied to this GHG analysis.

During construction of the Project, it's expected that approximately 409.871 Metric Tons (MT) of CO_2e will be generated. Given this, the Project would generate 13.66 MT CO_2e per year over the amortized 30-year minimum life of the Project. After Construction and during operations of the Project, a combined GHG emissions of 829.73 MT CO_2e is expected. Since the Project would be allowed under the General Plan (Pending approval of the proposed Major Use Permit (MUP)), the Project would be consistent with the County's Climate Action Plan (CAP) and would require completion of the CAP Checklist which is provided as Attachment A to this report.

The Project was also analyzed using an alternative approach for consistency with SB 32. Based on this approach, the Project would be required to generate fewer per capita emission than 2.94 MT CO_2e per service population (SP). Under this Project-specific locally appropriate efficiency-based threshold, the Project would generate 829.73 MT CO_2e with both annualized construction and annual operations GHG emissions. The proposed Project would have a Projected SP of 488

during operations which would yield a 1.7 MT CO_2e per SP (829.73 MT CO_2e/488 persons). Based on this, the proposed Project would generate fewer emissions than a County-specific localized efficiency metric of 2.94 MT CO_2e per SP. Given this, the Project would still generate a less than significant impact.

It should also be noted that the Liberty Charter High School is the 9-12th grade program that serves the families that have enrolled their students in Literacy First Charter Schools. The large majority of those students live in the East County of San Diego. The proposed school campus near the corner of Chase Avenue and Jamacha Boulevard will replace the current campus, temporarily located in Lemon Grove. The relocated High School will be closer to the Elementary and Middle Schools which are likely the High Schools future student base. The Project applicant had a memo prepared by the Project traffic engineer and the analysis states that the relocation of the High School site would bring a significant reduction on VMT based on the existing population of Middle and Elementary School students that would be likely to attend the High School in the upcoming years. This memo has been provided as ***Attachment E*** to this report. Additionally, the Project has dedicated parking for vanpool/clean vehicle and carpool only. The Project will promote a carpool program to reduce commute trips. The Project will plumb and install up to two EV charging stations for employees and public use.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Greenhouse Gas (GHG) Assessment is to show conformance to the California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB32) and Senate Bill 97 (SB97). AB32 requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels and SB97 a "companion" bill directed amendments to the California Environmental Quality Act (CEQA) statute to specifically establish that GHG emissions and their impacts are appropriate subjects for CEQA analysis. Should impacts be determined, the intent of this study would be to recommend suitable design measures to bring the Project to a level considered less than significant.

1.2 Project Location

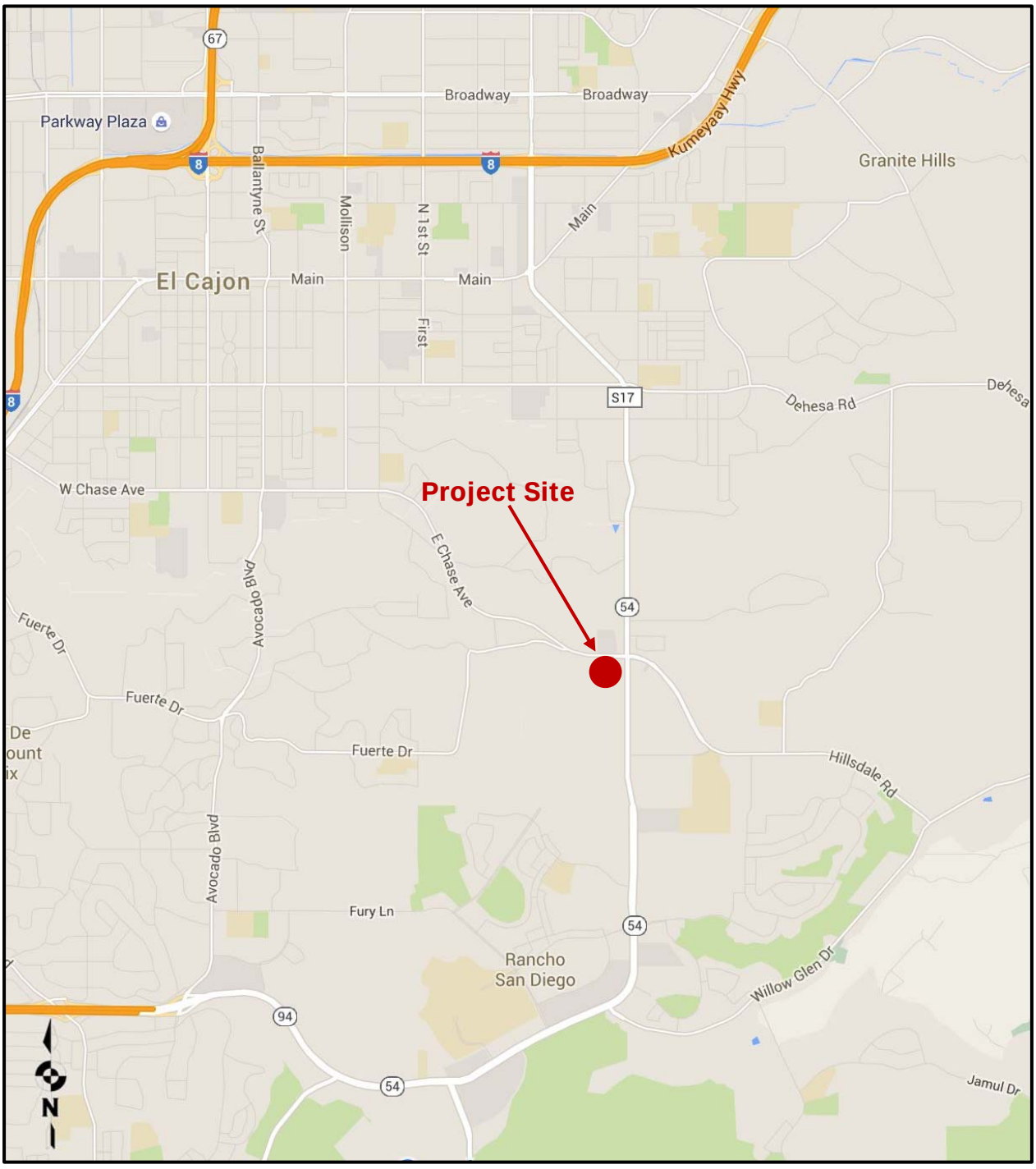
The proposed development is located in the County of San Diego within the Community of Valle de Oro. The Project is located along the south side of Chase Avenue just West of Jamacha Road. Access to the Project site is provided along the south side of Chase Avenue with entry only and exit only driveways 600 feet and 400 feet west of Jamacha Road, respectively. There are no structures located on the property except for a paved parking area in the northeast section of the site which will remain paved and is not considered part of this Project. Land uses surrounding the Project site include existing commercial and single family residential with Valhalla High School located approximately ¾ miles to the east of the property. A general Project vicinity map is shown in Figure 1–A on the following page.

1.3 Project Description

The proposed Liberty High Project consists of the construction of a new Charter High School on an 7.7 acre parcel. The Project requests a Major Use Permit (MUP) to allow for the development of a 450 student high school (9th thru 12th grade). Classes will be held in a proposed 48,000 square foot, two–story building that will contain 22 classrooms and an administrative office. A gymnasium will also be provided for school assemblies and sports events. The school is anticipated to hire 33 faculty and staff.

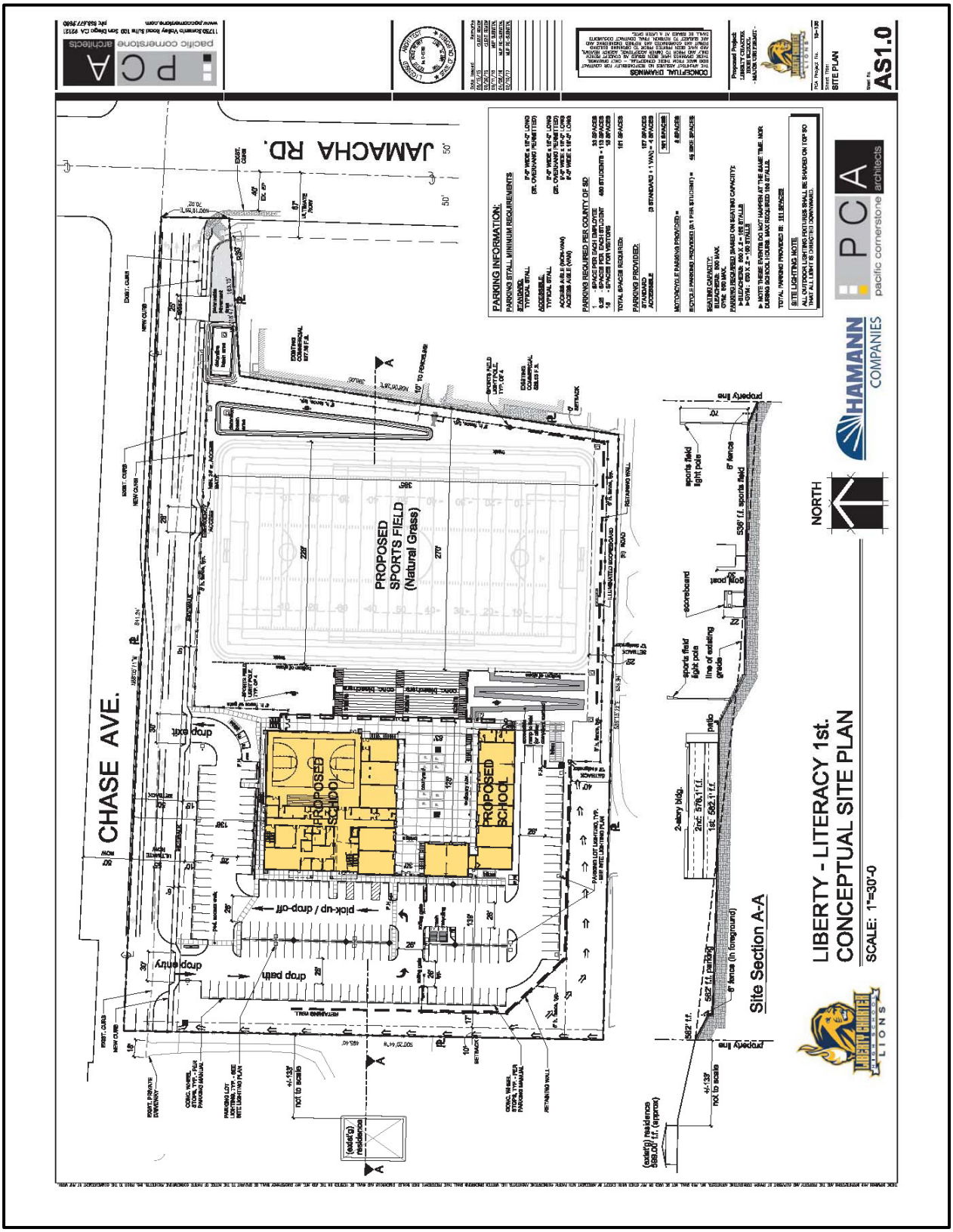
The Project also includes parking areas with up to 161 spaces along with a designated student drop off and pick up route. The school will operate during a normal school year calendar (August through June) and during the hours of 8:00 am to 3:30 pm Mondays through Fridays with additional hours for after school activities. The Project site plan is shown in Figure 1-B.

Figure 1-A: Project Vicinity Map



Source: (Google, 2019)

Figure 1-B: Proposed Project Site Plan



1.4 Project Design Features

Project design features have been incorporated into the Project to reduce emissions associated with operations of this Project. This report will define specifically which design features were included within air quality estimation software and it should be expected that whenever a design feature is included within air quality and greenhouse gas modeling that those particular design features would be required for the Project to implement such that the County can recommend approval. If mitigation measures are required for compliance, they will be identified later in this analysis. Air Quality mitigation measures and a list of design features included within the GHG analysis are shown below:

- The Project will install at least a 90-Kilowatt (KW) solar/photovoltaic (PV) system.
- The Project would install low flow water fixtures within the development
- Plumb and install 2 Level II Electric Vehicle (EV) chargers or one dual port Level II EV charger within the common parking areas of this Project.
- To mitigate significant health risk impacts identified in the Project air quality study, the Project will utilize Tier 4 diesel construction equipment with Diesel Particulate Filters (DPF) attached.

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Understanding Greenhouse Gasses

GHGs such as water vapor and carbon dioxide are abundant in the earth's atmosphere. These gases are called "Greenhouse Gases" because they absorb and emit thermal infrared radiation which acts like an insulator to the planet. Without these gases, the earth's ambient temperature would be extremely hot during the day and blistering cold at night. However, because these gases can both absorb and emit heat, the earth's temperature does not sway too far in either direction.

Over the years as human activities resulting in the burning of fossil fuels, stored carbon is released into the air in the form of carbon dioxide (CO_2) and to a much lesser extent carbon monoxide (CO). Over the years, scientists have measured this rise in CO_2 and there is consensus in the scientific community that this increase in CO_2 concentrations is increasing the average temperature of the planet. Additionally, it is thought that other greenhouse gases such as Methane (CH_4) and Nitrous Oxide (N_2O) contribute to this effect.

Greenhouse Gasses of concern as analyzed in this study are CO_2, CH_4, and N_2O. To simply GHG calculations, both CH_4 and N_2O can be converted to an equivalent amount of CO_2 or CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). CalEEMod 2016 uses the Intergovernmental Panel on Climate Change (IPCC) report as source data for GWP factors for both CH_4 and N_2O (CAPCOA, September 2016), using the 100-year period factors of 25 and 298, respectively (IPCC, 2007).

2.2 Existing Setting

The currently vacant site is rectangular in shape with approximately 800 feet of frontage along Chase Avenue and a relatively narrow appendage in the northeast portion of the site that extends to the intersection of Chase Avenue and Jamacha Road. The Project site has a General Plan Designation of Semi-Rural Residential (SR-0.5) with a Regional Category of Semi-Rural. The zoning of the site is Rural Residential (RR) with a minimum lot size of 0.5 acres.

There are no structures or improvements located on the property with the exception of a paved parking area located in the northeastern portion of the site. This portion of the site is under lease to the adjacent commercial shopping center and will not be modified as part of this Project.

Land uses immediately adjacent to the Project site include existing commercial shopping centers to the east and northeast, a vacant commercial nursery to the north, and single-

family homes to the northwest, west and south. Valhalla High School is located approximately 0.75 miles to the east of the Project site on Hillsdale Road.

2.3 Climate and Meteorology

Climate within the San Diego Air Basin (SDAB), is largely dominated by the semi-permanent high-pressure system over the Pacific Ocean, known as the Pacific High. This high-pressure ridge over the West Coast often creates a pattern of late-night and early-morning low clouds, hazy afternoon sunshine, daytime onshore breezes, and little temperature variation throughout the year. The climatic classification for San Diego is a warm with dry summers and mild wet winters (County of San Diego, 2007).

Meteorological trends within the El Cajon area generally show daytime highs ranging between 67 degrees Fahrenheit (ºF) in the winter to approximately 85ºF in the summer with August usually being the hottest month. Median temperatures range from approximately 55ºF in the winter to approximately 73ºF in the summer. Precipitation is generally about 12.9 inches per year (WRCC, 2016). Prevailing wind patterns for the area vary during any given month during the year and also vary depending on the time of day or night. The predominant pattern though throughout the year is usually from the west or westerly (WRCC, 2018).

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT

3.1 Federal

Massachusetts v. EPA

On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs— Carbon Dioxide CO_2, CH_4, N_2O, Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF_6)— in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

3.2 State

State Greenhouse Gas Targets

Executive Order S-3-05

EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan

In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, the California Air Resources Board (CARB) is responsible for and is recognized as having the expertise to carry out and develop the programs and regulations necessary to achieve the GHG emissions reduction mandate of AB 32. Therefore, in furtherance of AB 32, CARB adopted regulations requiring the reporting and verification of GHG emissions from specified sources, such as industrial facilities, fuel suppliers and electricity importers (see Health & Safety Code Section 35830; Cal. Code Regs., tit. 17, §§95100 et seq.). CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 million metric tons (MMT) CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (*Scoping Plan*) in accordance with Health and Safety Code Section 38561. The *Scoping Plan* established an overall framework for the measures that will be implemented to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The 2008 *Scoping Plan* evaluated opportunities for sector-specific reductions, integrated all CARB and Climate Action Team[1] early actions and additional GHG reduction features by both entities, identified additional measures to be pursued as regulations, and outlined the role of a cap-and-trade program. The key elements of the 2008 *Scoping Plan* include the following (CARB, 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33 percent
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard

[1] The Climate Action Team is comprised of state agency secretaries and heads of state agencies, boards and departments; these members work to coordinate statewide efforts to implement GHG emissions reduction programs and adaptation programs.

6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

In the 2008 *Scoping Plan*, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise Projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the *Scoping Plan's* Functional Equivalent Document, CARB revised its estimates of the Projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations (CARB, 2011). Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. When the 2020 emissions level Projection was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (12 percent to 20 percent), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (*First Update*). The stated purpose of the *First Update* was to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the *First Update*, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050." Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The *First Update* identified key

recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the *First Update*, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies.

As part of the *First Update*, CARB recalculated the state's 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level Projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

In November 2017, CARB released *California's 2017 Climate Change Scoping Plan* (*Second Update*) for public review and comment (CARB, 2017). This update proposes CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32 (discussed below). The strategy includes continuing the Cap-and-Trade Program through 2030,[2] inclusive policies and broad support for clean technologies, enhanced industrial efficiency and competitiveness, prioritization of transportation sustainability, continued leadership on clean energy, putting waste resources to beneficial use, supporting resilient agricultural and rural economics and natural and working lands, securing California's water supplies, and cleaning the air and public health. When discussing Project-level GHG emissions reduction actions and thresholds, the *Second Update* states "[a]chieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development." However, the *Second Update* also recognizes that such an achievement "may not be feasible or appropriate for every Project ... and the inability of a Project to mitigate its GHG emissions to net zero does not imply the Project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA." CARB's Governing Board adopted the *Second Update* in December 2017.

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim goal of reducing statewide GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG

[2] In July 2017, AB 398 was enacted into law, thereby extending the legislatively-authorized lifetime of the Cap-and-Trade Program to December 31, 2030.

emissions to 80 percent below 1990 levels by 2050 as set forth in S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's *Scoping Plan* to express the 2030 target in terms of MMT CO_2e. The EO also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were required to prepare GHG reduction plans by September 2015, followed by a report on action taken in relation to these plans in June 2016.

SB 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction target; make changes to CARB's membership, and increase legislative oversight of CARB's climate change-based activities; and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members. The legislation further requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and identify specific information for GHG emissions reduction measures when updating the scoping plan, including information regarding the range of Projected GHG emissions and air pollution reductions that result from each measure and the cost-effectiveness (including avoided social costs) of each measure (see Health & Safety Code Section 38562.7).

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new buildings and alterations or additions to existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply

reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2013 Title 24 standards went into effect on July 1, 2014 and were estimated to reduce energy uses between 3.8% to 36.4%, depending on the energy source and land (Architectural Energy Corporation (AEC), 2013).

The 2016 Title 24 standards, which went into effect on January 1, 2017, are the currently applicable standards. When comparing the 2013 and 2016 standards for electrical consumption, it is expected that low-rise, single-family detached homes and multi-family homes would use 12% and 15% less electricity under the 2016 standards, respectively. Similarly, implementation of the 2016 standards is expected to reduce natural gas consumption by 21% in single-family homes and 31% in multi-family homes. Newly constructed non-residential buildings are estimated to achieve a 5% reduction in electricity consumption under the 2016 standards and no significant change relative to natural gas consumption (California Energy Commission, 2015). The current version of CalEEMod used in this analysis employs, as a default parameter, the 2016 Title 24 standards to estimate GHG emissions.

The Project would be required, at a minimum, to comply with the latest version of Title 24 standards at the time the Project seeks building permits. This will likely be the 2019 standards, as those standards will go into effect on January 1, 2020. The 2019 standards continue to improve upon the 2016 standards for residential and nonresidential buildings. One of the most notable changes in the 2019 standards is the requirement for the installation of rooftop solar on residential buildings (California Energy Commission, 2017). It should be noted that the State updates these regulations every three years. Thus, throughout Project construction, buildings will need comply with the most recently adopted standards.

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen

2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- Sixty-five (65) percent of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements; stricter water conservation, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 75 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.

The newest CALGreen Standards were updated in 2019 and will become effective on January 1, 2020. The updated Code includes modifications to current codes under Division 5.1 (Planning and Design), Division 5.3 (Water Efficiency and Conservation), Division 5.4 and 5.5 (Material Conservation and Resource Efficiency) and (Environmental Quality). (California Title 24, Part 11, 2019). Should building permits be required after January 2020, CALGreen standards would be applicable.

Zero Net Energy Design Goals

As recognized in the *First Update* to the *Scoping Plan*, the California Public Utilities Commission, CEC, and CARB also have a shared, established goal of achieving zero net energy (ZNE) for new construction in California. As background, the California Public Utilities Commission first set forth its zero net energy goals in the 2008 Energy Efficiency Strategic Plan and the 2011 Big Bold Energy Efficiency Strategies. The key policy timelines include: (1)

all new residential construction in California will be zero net energy by 2020, and (2) all new commercial construction in California will be zero net energy by 2030. As most recently defined by the CEC in its 2015 *Integrated Energy Policy Report*, a zero net energy code building is one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building using the CEC's Time Dependent Valuation metric. It should be noted that Title 24 (2019) which will be effective in 2020 requires rooftop solar for all new residential units.

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Mobile Sources

AB 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30 percent (CARB, Clean Car Standards - Pavley, Assembly Bill 1493, 2017).

EO S-1-07

Issued in January 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

In 2018, CARB extended and expanded the Low Carbon Fuel Standard regulations to include a 20 percent target for reduction in carbon intensity by 2030.

SB 375

SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPOs) are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible and if implemented, the GHG reduction targets. If a SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), a SCS does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for SANDAG adopted in 2010 are a 7 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035; the targets are expressed as a percent change in per capita passenger vehicle GHG emissions relative to 2005.

In October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*, which contains the region's current SCS. In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region. More specifically, as set forth in CARB Executive Order G-15-075, CARB determined that SANDAG's SCS would achieve a 15 percent per capita reduction by 2020 and a 21 percent per capita reduction by 2035.

In 2018, CARB updated the SB 375 targets. For purposes of SANDAG, the updated targets include a 15 percent reduction in emissions per capita by 2020 and a 19 percent reduction by 2035. SANDAG is in the process of preparing its next SCS, which will consider whether and how the region could attain these reduction targets.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2017). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025 (CARB, 2012).

EO B-16-12

EO B-16-12 (March 2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution of ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet. As of January 2018, the Governor has called for as many as 1.5 million EV by 2025 and up to five million EV by 2030 (Office of Governor Edmund G. Brown Jr., 2018).

SB 350

In 2015, SB 350 – the Clean Energy and Pollution Reduction Act – was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

Renewable Energy Procurement

SB 1078

SB 1078 (2002) established the Renewables Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010.

SB X1 2

SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350

SB 350 (2015) further expanded the RPS by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030 be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency.

SB 100

SB 100 (2018) has further accelerated and expanded the RPS, requiring achievement of a 50 percent RPS by December 31, 2026 and a 60 percent RPS by December 31, 2030. SB 100 also established a new statewide policy goal that calls for eligible renewable energy resources and zero-carbon resources to supply 100 percent of electricity retail sales and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Water

EO B-29-15

In response to drought-related concerns, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development Projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (Public Resources Code Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority

strategies that CalRecycle believes would assist the state in reaching the 75 percent goal by 2020.

Increasing the amount of commercial solid waste that is recycled, reused, or composted will reduce GHG emissions primarily by 1) reducing the energy requirements associated with the extraction, harvest, and processing of raw materials and 2) using recyclable materials that require less energy than raw materials to manufacture finished products (CalRecycle, 2018). Increased diversion of organic materials (green and food waste) will also reduce GHG emissions (CO_2 and CH_4) resulting from decomposition in landfills by redirecting this material to processes that use the solid waste material to produce vehicle fuels, heat, electricity, or compost.

3.3 Project Specific Guidelines

Appendix G of the CEQA Guidelines

Amendments to Appendix G of the CEQA Guidelines were finalized in December 2018. According to Appendix G of the CEQA Guidelines, a Project would have a significant environmental impact related to GHGs if it would:

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

For purposes of this analysis, the two Appendix G checklist questions set forth above are utilized as the thresholds of significance when evaluating the environmental effects of the Project's GHG emissions. In applying these thresholds, reference is made to CEQA Guidelines Section 15064.4(b)(1)-(3).

County of San Diego General Plan

A Project's adherence to the County's General Plan can be determined through demonstrating consistency with General Plan land use assumption and policies. If a Project would generate fewer GHG emissions than the maximum allowable buildout of the site under the General Plan land use designations, the Project would be consistent with the estimated GHG emissions for that site. Further consistency with the General Plan can be demonstrated through compliance with applicable General Plan policies.

County of San Diego Climate Action Plan

Per County guidelines, the thresholds of significance for climate change are:

"A proposed Project would have a less than significant cumulatively considerable contribution to climate change impacts if it is found to be consistent with the County's Climate Action Plan; and, would normally have a cumulatively considerable contribution to climate change impacts if it is found to be inconsistent with the County's Climate Action Plan." Consistency with the CAP is determined through the CAP Consistency Review Checklist (Checklist) and provides a streamlined CEQA review process for proposed discretionary development Projects. The Checklist is the mechanism that is used to demonstrate consistency with the CAP. If a Project does not comply with required actions in the Checklist, it would be determined to be inconsistent with the CAP.

If a Project is consistent with the Projections in the CAP, its associated growth in terms of GHG emissions was accounted for in the CAP's Projections and would not increase emissions beyond what is anticipated in the CAP or inhibit the County from meeting its reduction targets. If a land use and/or zoning designation amendment results in a more GHG-intensive Project, the Project is required to demonstrate consistency with applicable CAP measures and offset the increase in emissions.

As explained in the CAP, the Checklist is the mechanism that is used to demonstrate consistency with the CAP. If a Project does not comply with required actions in the Checklist, it would be determined to be inconsistent with the CAP. Also, per the County's CAP all Projects subject to CEQA are required to complete a CAP checklist. It should be noted that regardless of the status of legal proceedings associated with the CAP, the Project has completed the CAP Consistency Review Checklist which is provided as ***Attachment A*** to this analysis.

If a Project is consistent with the Projections in the CAP, then its associated growth in terms of GHG emissions was accounted for in the CAP's Projections and would not increase emissions beyond what is anticipated in the CAP or inhibit the County from reaching its reduction targets. If a Project is consistent with the Projections in the CAP, its GHG emissions would not conflict with an applicable plan adopted for the purpose of reducing the emissions of greenhouse gases. Additionally, if a Project is consistent with the CAP, the Project would be consistent with reduction targets CARB's Scoping Plan Update's recommended community targets, as well as the State's 2014 GHG emissions inventory and the targets established by AB 32, SB 32, and EOs B-30-15 and S-3-05. Therefore, the Project would be in compliance with Appendix G of the CEQA Guidelines and would result in a less than significant impact.

Project-Specific Efficiency Threshold

The CAP and its EIR remain applicable while the County appeals the trial court's decision. The Project-specific efficiency threshold analysis prepared for the proposed Project did not rely on the CAP to streamline the Project's environmental analysis under CEQA Guidelines Section 15183.5. Rather, this proposed Project's significance determination used the criteria contained in CEQA Guidelines Appendix G, (informed by CEQA Guidelines Section 15064.4) and mitigation strategies (informed by CEQA Guidelines Section 15126.4(c)) that are independent of the CAP.[3] As such, in the event that the CAP does not withstand judicial scrutiny, the Project uses a Project-specific threshold and analysis for determining whether the Project's GHG emissions would significantly impact the environment.

A number of air districts in the State of California have recommended or adopted efficiency metrics or service population (SP) thresholds as a method for analyzing cumulative GHG emissions and significance of impacts under CEQA. For this Project, the Project's SP refers to a Project's students plus employees that would be generated by the proposed Project's development. This efficiency metric is expressed as MT CO_2e per SP per year (MT CO_2e/year/SP).

With the release of the 2017 Climate Change Scoping Plan Update, CARB recognized the need to balance population growth with emissions reductions and in doing so, provided a new local plan level methodology for target setting that provides consistency with state GHG reduction goals using per capita efficiency targets. These statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32. The targets are generated by dividing the statewide 2030 GHG emissions targets by the statewide 2030 SP.

As discussed, at this time, the State has codified a target or reducing emissions to 40 percent below 1990 emissions levels by 2030 (SB 32) and has developed a Scoping Plan to demonstrate how the State will achieve the 2030 target and make substantial progress toward the 2050 goal of 80% reduction in 1990 GHG emissions levels set by EO S-3-05. In the recently signed EO B-55-18, which identifies a new goal of carbon neutrality by 2045 and supersedes the goal established by EO S-3-05, CARB has been tasked with including a pathway toward EO B-55-18 goals in the next Scoping Plan update. While state and regional regulatory of energy and transportation systems, along with the State's CAP and Trade

[3] Individual Projects may be approved using thresholds developed on a Project-by-Project basis. While lead agencies can adopt a significance threshold for general use pursuant to CEQA Guidelines§ 15064.7, they can alternately determine a threshold on a Project-by Project basis, which is specifically allowed pursuant to CEQA Guidelines § 15064.4(a), case law and several other expert sources. Under the CEQA Guidelines, lead agencies have the discretion to determine the appropriate method for evaluating GHG emissions, based to the extent possible on scientific and factual data.

Program, are designed to be set at limits to achieve most of the reductions needed to hit the State's long term targets, local government can do their fair share toward meeting the State's targets by siting and approving Projects that accommodate population growth with Project's that are GHG-efficient.

The Association of Environmental Professionals (AEP) Climate Change Committee recommends that CEQA GHG analysis evaluate Project emission in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans, legislation or EOs (AEP, 2016). Consistent with AEP Climate Change Committee recommendations. horizon year Projects of 2021 or later, such as this Project, are analyzed in terms of whether the Project would impede "substantial progress" toward meeting the reduction goal identified in SB 32 and now EO B-55-18. As SB 32 is considered an interim target toward meeting the 2045 State goal, consistency with SB 32 would be considered contributing substantial progress toward meeting the State's long-term State targets is important as these targets have been set at levels that reduce California's fair share of emissions toward international targets that will stabilize global climate change effects and avoid the adverse environmental consequences described herein (Executive Order B-55-18).

In the Scoping Plan Update, CARB suggested substantial progress could be made if a regional or County-wide GHG reduction plan targeted reducing emissions to 6 MT CO_2e per capita by 2030 and 2 MTCO_2e per capita by 2050, but do not necessarily need to be Project-specific targets. We note that considering the overall statewide emissions in 1990 and 2014 and the Projected statewide population in 2030 and 2050, these per-capita goals would be equivalent to reducing 2014 emissions by 40 percent by 2030[4]. The per-capita targets were determined to be applicable to the County because the County seeks to achieve State goals and CARB's per-capita metrics provide the means to accomplish that. However, following court guidance in (Golden Door Properties, LLC v. County of San Diego., 2018) and (Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Ranch, 2015) to make the Project-specific efficiency threshold locally appropriate, one must use local data to establish

[4] Setting a target with respect to a baseline year, such as 2014, is standard industry practice in climate action planning. The original 2008 Scoping Plan developed by CARB recommended a reduction below baseline levels as a valid reduction target, in recognition of the challenges in developing a 1990 inventory for a local jurisdiction. Data used for developing the 2014 inventory represent the best available data, based on improved inventory methodologies and data collection procedures. The same level of rigor cannot be applied to a 1990 inventory and any attempts to extrapolate activity data (e.g., vehicle miles traveled, energy consumption) for 1990 would introduce a large margin of error and provide an inaccurate accounting of county emissions. Therefore, reliance on State data to determine relative reduction levels that can be applied to local 2014 emissions levels is a valid methodology to determine reduction targets.

an analytical path between the threshold and a Project providing its fair share contribution towards meeting State targets using the Project population's efficient generation of GHG.

Local Data

During preparation of the County's baseline emissions inventory, the University of San Diego's Energy Policy Initiatives Center (EPIC) calculated GHG emissions for the County for both community-wide sectors and County government operations for the year 2014, with emissions Projections for 2030 and 2050. EPIC concluded that total emissions in the County of San Diego in 2014 comprised approximately 3,211,505 MT CO_2e (University of San Diego's Energy Policy Initiatives Center (EPIC), 2014).

Based on SB 32 and the Scoping Plan's recommendation, a 40% reduction from the baseline year GHG emissions in the County of San Diego would represent a communitywide emissions reduction target of 1,926,903 MT CO_2e/year in 2030.

SANDAG, San Diego's regional planning agency, Projects and estimates population for all jurisdictions in the San Diego region (SANDAG, Data Surver, 2019). There are no estimates from SANDAG on the population or the number of civilian jobs in the unincorporated County for 2030. Therefore, the population and civilian jobs in 2030 are interpolated here based on SANDAG Series 13 Projection year 2020 and Projection year 2035.

The population used in this analysis is the unincorporated County population of County residents, which in 2030 is interpolated to be 551,712. Population estimates and Projections were available from SANDAG's Data Surfer online query tool, and GP-related growth data was available from the County. Additionally, based on the interpolation of SANDAG data described above, the number of civilian jobs in the unincorporated County for 2030 is interpolated to be 104,157 jobs (SANDAG, Data Surver, 2019). Therefore, the SP for the unincorporated County in 2030 is the summation of the population and the employment which equates to 655,869 (551,712 plus 104,157).

Thus, in order to achieve a County emission level of 1,926,903 MT CO_2e based on the reductions needed per SB 32, the required per SP efficiency target in 2030 would be approximately 2.94 MT CO_2e (1,926,903/655,869) per SP.

4.0 METHODOLOGY

4.1 Construction CO_2e Emissions Calculation Methodology

The Construction of the proposed Project would take roughly one year to complete. Table 4.1 below shows the expected timeframes and would include site preparation, grading which would include all necessary trenching and infrastructure improvements, paving, and Building Construction of all the facilities at the proposed Project location. All equipment was selected based on default settings within CalEEMod and reviewed by the Project applicant.

Table 4.1: Expected Construction Equipment and Schedule

Equipment Identification	Proposed Dates	Quantity
Site Preparation	1/1/2020– 1/14/2020	
Rubber Tired Dozers		3
Tractors/Loaders/Backhoes		4
Grading	1/15/2020 – 2/28/2020	
Excavators		1
Graders		1
Rubber Tired Dozers		1
Tractors/Loaders/Backhoes		3
Paving	3/1/2020– 3/20/2020	
Pavers		2
Paving Equipment		2
Rollers		2
Building Construction	3/22/2020 – 12/30/2020	
Cranes		1
Forklifts		3
Generator Sets		1
Tractors/Loaders/Backhoes		3
Welders		1
Architectural Coating	5/1/2020 – 12/31/2020	
Air Compressors		1
This equipment list is based upon equipment inventory within CalEEMod.		

GHG impacts related to construction will be calculated using the latest CalEEMod 2016.3.2 model which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD). CalEEMod incorporates emission factors from the EMFAC2014 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions. Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively minimal portion of the overall lifetime Project GHG emissions. To adequately include GHG emission from construction in the lifetime/operational GHG estimates,

construction emissions are amortized over a 30-year Project lifetime (SCAQMD, 2008). During construction, grading activities will remove mostly disturbed vegetation and soils. New vegetation, including trees and other landscaping, planted during building construction would ultimately sequester more carbon during operations than existing, disturbed vegetation. GHG reductions from new sequestration this were not taken in this analysis, thus the Project would likely result in fewer $MTCO_2e$ annually than reported in this analysis. The annual CalEEMod inputs are shown in ***Attachments B*** at the end of this report.

4.2 Operational Emissions Calculation Methodology

Once construction is completed the proposed Project would generate GHG emissions from daily operations which would include sources such as area, energy, mobile, solid waste and water uses, which are calculated within CalEEMod. Area Sources for high schools include landscaping, consumer products, and architectural coatings as part of regular maintenance. Energy sources would be from uses such as electricity and natural gas consumption. Solid waste generated in the form of trash is also considered as decomposition of organic material breaks down to form GHGs. Water and wastewater emissions from the school generate emissions from offsite water conveyance and wastewater treatment facilities. Finally, the Project would also generate air emissions and GHG through the use of carbon fuel burning vehicles for transportation. Energy Intensities as recommended by CalEEMod inputs were assumed within this report. Title 24 efficiencies as modeled within CalEEMod 2016.3.2 utilize Title 24 (2016) as defaults, though the Project will need to comply with Title 24 (2019) which would further improve upon building efficiency requirements.

Electrical energy-intensity factors were updated within CalEEMod to reflect San Diego Gas and Electric's (SDG&E) emissions rate variations from 2009 which is the default rate data used by CalEEMod. In 2009, SDG&E achieved 10.5 percent procurement of renewable energy (California Public Utilities Commission, 2016) and in 2020 will have up to 46% in place. For purposes of analysis however the State's 33% requirement was assumed. After 2020, in 2030, an additional 17% reduction would be required or 1.7% per year. Given this, SDG&E energy-intensity factors for 2021 were calculated and were modeled as such within CalEEMod as shown in Table 4.3 and are shown in ***Attachment C*** to this report.

Table 4.3: SDG&E Energy Intensity Factors

GHG	2009 Factors (lbs/MWh) w/10.5% RPS	2021 Factors – 34.7% Renewables (lbs/MWh)
Carbon Dioxide (CO_2)	720.49	525.68
Methane (CH_4)	0.029	0.021
Nitrous Oxide (N_2O)	0.006	0.004

The Project would implement design features to include low flow water fixtures, at least a 90 KW PV system and the inclusion of at least two Level II EV chargers. For purposes of analysis, CalEEMod was updated to include low flow fixtures for the water and wastewater calculations internal to CalEEMod. For reductions associated with the PV design feature, annual energy estimates were provided by the National Renewable Energy Laboratory (NREL, 2019) and shown as ***Attachment D*** to this report. Based on this, the Project would be estimated to generate 149,002 kWh of annual electrical energy.

As background to EVs, a standard petroleum-based car is rated in miles per gallon (MPG), Zero Emission Vehicles (ZEVs) such as EV are typically rated in kilowatt hours per 100 miles traveled. The U.S. Department of Energy has developed a mile per gallon gasoline equivalent unit (MPGe) of 0.337 kWh/100 miles traveled (Department of Energy, 2000). EV efficiency just like petroleum-based cars varies depending on manufacture and capabilities of the vehicle. The U.S. Department of Energy estimates that the average fuel economy for ZEVs in 2017 is as high as 136 MPGe for the midsize Hyundai Ioniq, having a range of 124 miles. The higher range Tesla Model S can achieve a range of 335 miles with a fuel efficiency of 102 MPGe. For purposes of this analysis, a worst-case average of 100 MPGe per vehicle is used.

Also, consistent with the CAP, it was assumed that each charging location would be utilized for 3 hours per day for 180 days per year. Each Level 2 charging Location runs on a 220-volt system and is capable of providing 6.6 to 19.2 kW of power. Based on this, for a 100 MPGe vehicle, each hour of charging will provide a range of 56.97 miles. Given this, each vehicle mile traveled would consume 0.337 kWh for every mile of zero-emission driving.

5.0 FINDINGS

5.1 Project Related Construction Emissions

Utilizing the CalEEMod inputs for the model as shown in Table 4.1 above, we find that grading and construction of the Project will produce approximately 409.87 $MTCO_2e$ over the construction life of the Project. Based on SQAQMD methodology, it is recommended to average the construction emissions over the Project life which is assumed to be 30 years. Given this, the annual construction emission would be 13.66 MT CO_2e per year. A summary of the construction emissions is shown in Table 5.1 below. The analysis of GHG emissions generated during construction activities includes the application of the mitigation measure identified in the Project's air quality study. This mitigation includes the application of Tier 4 Diesel Equipment with Diesel Particulate Filters attached.

Table 5.1: Expected Construction CO_2e Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2020	0.000	407.859	407.859	0.081	0.000	409.87
Total						**409.87**
Yearly Average Construction Emissions (Metric Tons/year over 30 years)						**13.66**
Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Table 4.1 above.						

5.2 Project-Related Operational Emissions

As previously discussed, emissions generated from area, energy, mobile, solid waste and water uses are calculated within CalEEMod. These settings which are automatically populated throughout the model are based on the inputted land use and intensities expected at the Project site. Unless stated within this report, default values generated within CalEEMod were used. The Project specific traffic study estimated that the Project would generate 854 daily trips along with average urban trip distances as estimated by CalEEMod 2016.3.2.daily trips (Kimley Horn, 2018). It should be noted that the default settings in CalEEMod is 1.7 trips per student though this was increased to 1.9 manually to be consistent with the Project traffic study. The calculated operational emissions for 2020 are identified in Table 5.2 on the following page.

Each onsite EV charging station is estimated to be utilized on average 3 hours per day and would provide enough charge for 170.91 miles. The installation of 2 level II EV charging

locations would provide enough charge for approximately 341.82 zero emission-driven miles per day or 61,528 miles per year assuming 180 days per year (School Operational Year) not counting summer school. Based on a review of annual outputs from CalEEMod, the Project would generate 710.67 $MTCO_2e$ per year from mobile sources, for an annual Project travel distance of 1,753,695 miles or 0.000408 MT CO_2e per mile traveled. Based on this, the installation of 2 Level II charging stations would reduce CO_2e emissions by 0.000408 MT per mile traveled times 61,528 annual miles or 25.08 MT CO_2e per year. This reduction is applied outside of CalEEMod and shown in Table 5.2.

EV charging on-site results in an increase in electricity consumption, provided by SDG&E. Based on the calculations provided above, each EV charger would consume 0.337 kWh of electricity per mile of charge. The EV charging provided is estimated to provide charging for 61,528 miles, which would consume approximately 20,734.93 kWh (61,528 miles x 0.337 kWh/mile). Based upon the CalEEMod operational model, the Project energy consumption is 335,355 kWh and it would generate 80.22 MT CO_2e, which is equal to 0.000239 MT CO_2e per kWh. Assuming the same factor, the 20,734.93 kWh consume for EV Charging would generate 4.96 MT CO_2e each year.

Additionally, the GHG reductions from low flow water fixtures (***Attachment B***) have been included in Table 5.2 as well as PV reductions identified in ***Attachment D*** so that the reader can see the relative reductions from each design feature.

Table 5.2: Project Emissions Summary MT/Year

Source	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e (MT/Yr)
Area	0.00	0.01	0.01	0.00	0.00	0.01
Energy	0.00	98.82	98.82	0.00	0.00	99.20
Mobile	0.00	709.71	709.71	0.04	0.00	710.67
Waste	16.67	0.00	16.67	0.99	0.00	41.30
Water	0.63	19.66	20.29	0.07	0.00	22.42
					Sub Total	**873.60**
					2 EV Charging Stations	**-25.08**
					EV Charging Energy Consumption	**4.96**
					90 KW PV System	**-35.64**
					Low Flow Water Fixtures	**-1.77**
					Total (MT CO_2e /Year)	**816.07**
					Amortized Construction Emissions (Table 5.1 above)	**13.66**
					Total Operations (MT CO_2e /Year)	**829.73**
					Per 488 SP (MT CO_2e/SP)	**1.7**
Data is presented in decimal format and may have rounding errors.						

Under this analysis, the proposed Project would generate 1.7 MT CO_2e per SP in 2030. Based on this, the proposed Project would generate fewer emissions than the localized SB 32 efficiency metric of 2.94 MT CO_2e per SP. As the Project calculated 1.7 MT CO_2e SP is below the localized 2.94 MT CO_2e per SP metric, the Project would not impair the State's attainment of its SB 32 reduction target.

It should also be noted that the Liberty Charter High School is the 9-12th grade program that serves the families that have enrolled their students in Literacy First Charter Schools. The large majority of those students live in the East County of San Diego. The proposed school campus near the corner of Chase Avenue and Jamacha Boulevard will replace the current campus, temporarily located in Lemon Grove. The relocated High School will be closer to the Elementary and Middle Schools which are likely the High Schools future student base. The Project applicant had a memo prepared by the Project traffic engineer and the analysis states that the relocation of the High School site would bring a significant reduction on VMT based on the existing population of Middle and Elementary School students that would be likely to attend the High School in the upcoming years. This memo has been provided as ***Attachment E*** to this report. Additionally, the Project has dedicated parking for vanpool/clean vehicle and carpool only. The Project will promote a carpool program to reduce commute trips. The Project will plumb and install up to two EV charging stations for employees and public use.

6.0 REFERENCES

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7.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the Projected CO_2e emissions from the Project development based upon the best available information at the time of preparation. The report was prepared by Jeremy Louden; a County approved CEQA Consultant for Air Quality and Greenhouse Gas.

Jeremy Louden, Principal
Ldn Consulting, Inc.
(760) 473-1253
jlouden@ldnconsulting.net

Date November 22, 2019

ATTACHMENT A

Liberty High CAP Checklist

Appendix A: Final Climate Action Plan Consistency Review Checklist

Introduction

The County of San Diego (County) Climate Action Plan (CAP), adopted by the Board of Supervisors on February 14, 2018, outlines actions that the County will undertake to meet its greenhouse gas (GHG) emissions reduction targets. Implementation of the CAP will require that new development projects incorporate more sustainable design standards and implement applicable reduction measures consistent with the CAP. To help plan and design projects consistent with the CAP, and to assist County staff in implementing the CAP and determining the consistency of proposed projects with the CAP during development review, the County has prepared a CAP Consistency Review Checklist (Checklist). This Checklist, in conjunction with the CAP, provides a streamlined review process for proposed discretionary projects that require environmental review pursuant to the California Environmental Quality Act (CEQA). Please refer to the County's Guidelines for Determining Significance for Climate Change (Guidelines) for more information on GHG emissions, climate change impact requirements, thresholds of significance, and compliance with CEQA Guidelines Section 15183.5.

The purpose of this Checklist is to implement GHG reduction measures from the CAP that apply to new development projects. The CAP presents the County's comprehensive strategy to reduce GHG emissions to meet its reduction targets. These reductions will be achieved through a combination of County initiatives and reduction actions for both existing and new development. Reduction actions that apply to existing and new development will be implemented through a combination of mandatory requirements and incentives. This Checklist specifically applies to proposed discretionary projects that require environmental review pursuant to CEQA. Therefore, the Checklist represents one implementation tool in the County's overall strategy to implement the CAP. Implementation of measures that do not apply to new development projects will occur through the implementation mechanisms identified in Chapter 5 of the CAP. Implementation of applicable reduction measures in new development projects will help the County achieve incremental reductions towards its targets, with additional reductions occurring through County initiatives and measures related to existing development that are implemented outside of the Checklist process.

The Checklist follows a two-step process to determine if projects are consistent with the CAP and whether they may have a significant cumulative impact under the County's adopted GHG thresholds of significance. The Checklist first assesses a project's consistency with the growth projections and land use assumptions that formed the basis of CAP emissions projections. If a project is consistent with the projections and land use assumptions in the CAP, its associated growth in terms of GHG emissions would have been accounted for in the CAP's projections and project implementation of the CAP reduction measures will contribute towards reducing the County's emissions and meeting the County's reduction targets. Projects that include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project

when compared to existing designation, would also be within the projections assumed in the CAP. Projects responding in the affirmative to Step 1 questions can move forward to Step 2 of the Checklist. If a land use and/or zoning designation amendment results in a more GHG-intensive project, the project is required to demonstrate consistency with applicable CAP measures and offset the increase in emissions as described in the Guidelines. Step 2 of the Checklist contains the CAP GHG reduction measures that projects are required to implement to ensure compliance with the CAP. Implementation of these measures would ensure that new development is consistent with relevant CAP strategies and measures and will contribute towards achieving the identified GHG reduction targets. Projects that are consistent with the CAP, as determined using this Checklist, may rely on the CAP for the cumulative impacts analysis of GHG emissions under CEQA.

A project's incremental contribution to cumulative GHG emissions may be determined to not be cumulatively considerable if it is determined to be consistent with the CAP. As specified in the CEQA Guidelines, the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the project's incremental effects are "cumulatively considerable" (CCR, Title 14, Division 6, Chapter 3, Section 15064[h][4]). Projects requiring discretionary review that cannot demonstrate consistency with the CAP using this Checklist may have a cumulatively considerable contribution to a significant cumulative impact and would be required to prepare a separate, more detailed project-level GHG analysis as part of the CEQA document prepared for the project.

Checklist Applicability

This Checklist only applies to development projects that require discretionary review and are subject to environmental review (i.e., not statutorily or categorically exempt projects) pursuant to CEQA. Projects that are limited to ministerial review and approval (e.g., only building permits) would not be subject to the Checklist. The CAP contains other measures that, when implemented, would apply broadly to all ministerial and discretionary projects. These measures are included for discretionary projects in this Checklist, but could also apply more broadly once the County takes action to codify specific requirements or standards.

Checklist Procedures

General procedures for Checklist compliance and review are described below. Specific guidance is also provided under each of the questions under Steps 1 and 2 of the Checklist in subsequent pages.

1. The County's Department of Planning & Development Services (PDS) reviews development applications and makes determinations regarding environmental review requirements under CEQA. Procedures for CEQA can be found on the County's Process Guidance & Regulations/Statutes Homepage. The Director of PDS will determine whether environmental review is required, and if so, whether completion of the CAP Checklist is required for a proposed project or whether a separate project-level GHG analysis is required.

2. The specific applicable requirements outlined in the Checklist shall be required as a condition of project approval.

3. The project must provide substantial evidence that demonstrates how the proposed project will implement each applicable Checklist requirement described herein to the satisfaction of the Director of PDS.

4. If a question in the Checklist is deemed not applicable (N/A) to a project, substantial evidence shall be provided to the satisfaction of the Director of PDS demonstrating why the Checklist item is not applicable. Feasibility of reduction measures for new projects was assessed in development of the

CAP and measures determined to be feasible were incorporated into the Checklist. Therefore, it is expected that projects would have the ability to comply with all applicable Checklist measures.

5. Development projects requiring discretionary review that cannot demonstrate consistency with the CAP using this Checklist shall prepare a separate, project-level GHG analysis as part of the CEQA document prepared for the project and may be required to prepare an Environmental Impact Report (EIR). Guidance for project-specific GHG Technical Reports is outlined in the Report Format and Content Requirements for Climate Change document, provided under separate cover. The Report Format and Content Requirements document provides guidance on the outline and content of GHG analyses for discretionary projects processed by PDS that cannot show compliance with the CAP Checklist.

Checklist Updates

The Guidelines and Checklist may be administratively updated by the County from time to time to comply with amendments to State laws or court directives, or to remove measures that may become mandatory through future updates to State or local codes. Administrative revisions to the Guidelines and Checklist will be limited to changes that do not trigger a subsequent EIR or a supplement to the SEIR for the CAP pursuant to CEQA Guidelines Section 15162. Administrative revisions, as described above, will not require approval by the Board of Supervisors (Board). All other changes to the Guidelines and Checklist require Board approval.

Comprehensive updates to the Guidelines and Checklist will be coordinated with each CAP update (i.e., every five years beginning in 2025) and would require Board approval. Future updates of the CAP, Guidelines, and Checklist shall comply with CEQA.

Application Information

Contact Information

Project No. and Name: Liberty Charter High School PDS2015-MUP-15-027

Property Address and APN: 1530 Jamacha Road; APN: 498-330-39

Applicant Name and Co.: Jerry Keough, Literacy First Charter Schools

Contact Phone: 619-993-3272 Contact Email: jerry.keough@lfcsinc.org

Was a consultant retained to complete this checklist? ■ Yes ☐ No

If Yes, complete the following:

Consultant Name: Jeremy Louden Contact Phone: 760-473-1253

Company Name: Ldn Consulting Contact Email: jlouden@ldnconsulting.net

Project Information

1. What is the size of the project site (acres [gross and net])? 7.7 gross / 6.6 net

2. Identify all applicable proposed land uses (indicate square footage [gross and net]):

   ☐ Residential (indicate # of single-family dwelling units): _____

   ☐ Residential (indicate # of multi-family dwelling units): _____

   ☐ Commercial (indicate total square footage [gross and net]): _____

   ☐ Industrial (indicate total square footage [gross and net]): _____

   ☐ Agricultural (indicate total acreage [gross and net]): _____

   ■ Other (describe): Institutional 48,000 SF

3. Provide a description of the project proposed. This description should match the project description used for the CEQA document. The description may be attached to the Checklist if there are space constraints.

The proposed Liberty High project consists of the construction of a new Charter High School on a 7.7 acre parcel. The project requests a Major Use Permit (MUP) to allow for the development of a 450 student high school (9th thru 12th grades). Classes will be held in a proposed 48,000 square foot, two–story building that will contain 22 classrooms and an administrative office. A gymnasium will also be provided for school assemblies and sports events. The school is expected to hire roughly 33 faculty and staff.

The proposed development is located in the County of San Diego within the Community of Valle de Oro.

The Project is located along the south side of Chase Avenue approximately 400 feet west Jamacha Road.

CAP Consistency Checklist Questions

Step 1: Land Use Consistency

For projects that are subject to CAP consistency review, the first step in determining consistency is to assess the project's consistency with the growth projections used in the development of the CAP. This section allows the County to determine a project's consistency with the land use assumptions used in the CAP.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide explanation and supporting documentation for your answer)	Yes	No
1. Is the proposed project consistent with the existing General Plan regional category, land use designations, and zoning designations? If **"Yes,"** provide substantiation below and then proceed to Step 2 (CAP Measures Consistency) of the Checklist. If **"No,"** proceed to question 2 below.	☒	☐
Project Detail: Please substantiate how the project satisfies question 1. The project site has a General Plan Designation of Semi-Rural Residential (SR-0.5) with a Regional Category of Semi-Rural. However that the proposed project would be considered an allowed use onsite based on the underlying zoning. Therefore, the proposed project use is consistent with the General Plan Designation.		
2. Does the project include a land use element and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations? If **"Yes,"** the project must provide estimated project GHG emissions under both existing and proposed designation(s) for comparison to substantiate the response and proceed to Step 2 (CAP Measures Consistency) of the Checklist. If **"No,"** (i.e., the project proposes an increase in density or intensity above that which is allowed under existing General Plan designations and consequently would not result in an equivalent or less GHG-intensive project when compared to the existing designations), the project must prepare a separate, more detailed project-level GHG analysis. As outlined in the County's Guidelines for Determining Significance for Climate Change and Report Format and Content Requirements for Climate Change, this analysis must demonstrate how the project would offset the increase in GHG emissions over the existing designations or baseline conditions. The project must also incorporate each of the CAP measures identified in Step 2 to mitigate cumulative GHG emissions impacts. Proceed and complete a separate project-specific GHG analysis and Step 2 of the Checklist. Refer to Section 4 of the County's Guidelines for procedures on analyzing General Plan Amendments.	☐	☐
Project Detail: Please substantiate how the project satisfies question 2.		

Step 2: CAP Measures Consistency

The second step of the CAP consistency review is to review and evaluate a project's consistency with the applicable measures of the CAP. Each checklist item is associated with a specific GHG reduction measure(s) in the County CAP.

Step 2: CAP Measures Consistency				
Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
Step 2A: Project Operations (All projects with an operational component must fill out this portion of the Checklist)				
Reducing Vehicle Miles Traveled				
1a. Reducing Vehicle Miles Traveled <u>Non-Residential:</u> For non-residential projects with anticipated tenant-occupants of 25 or more, will the project achieve a 15% reduction in emissions from commute vehicle miles traveled (VMT), and commit to monitoring and reporting results to demonstrate on-going compliance? VMT reduction may be achieved through a combination of Transportation Demand Management (TDM) and parking strategies, as long as the 15% reduction can be substantiated. VMT reduction actions though TDM may include, but are not limited to: ☐ Telecommuting ☐ Car Sharing ☐ Shuttle Service ■ Carpools ☐ Vanpools ■ Bicycle Parking Facilities ☐ Transit Subsidies Shared and reduced parking strategies may include, but are not limited to:[1] ☐ Shared parking facilities ■ Carpool/vanpool-only parking spaces ☐ Shuttle facilities ■ Electric Vehicle-only parking spaces The project may incorporate the measures listed above, and propose additional trip reduction measures, as long as a 15% reduction in emissions from commute VMT can be demonstrated through substantial evidence. Check "N/A" if the project is a residential project or if the project would not accommodate more than 25 tenant-occupants.	T-2.2 and T-2.4	☒	☐	☐

1b. Project Detail:
Please substantiate how the project satisfies question 1a.

Based on the use, the project would have more than 25 employees. The project has dedicated parking for vanpool/clean vehicle and carpool only. The project will promote a carpool program to reduce commute trips. The project will plumb and install up to two EV charging stations for employees and public use. The proposed Project will replace the current campus, temporarily located in Lemon Grove. The traffic engineer determined that the relocation of the High School site would bring a reduction on VMT based on the existing Elementary and Middle Schools which are likely the High Schools future student base. Refer to Attachment E of this analysis for more information.

[1] Reduction actions and strategies under 1a may be used to achieve a 10% reduction in emissions from commute VMT under 2a

Step 2: CAP Measures Consistency				
Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
Shared and Reduced Parking				
2a. Shared and Reduced Parking Non-Residential: For non-residential projects with anticipated tenant-occupants of 24 or less, will the project implement shared and reduced parking strategies that achieves a 10% reduction in emissions from commute VMT? Shared and reduced parking strategies may include, but are not limited to: ☐ Shared parking facilities ☐ Carpool/vanpool-only parking spaces ☐ Shuttle facilities ☐ Electric Vehicle-only parking spaces Check "N/A" if the project is a residential project or if the project would accommodate 25 or more tenant-occupants.	T-2.4	☐	☐	☒
2b. Project Detail: Please substantiate how the project satisfies question 2a. Project has more than 25 employees, please see 1a.				
Water Heating Systems				
3a. Electric or Alternatively-Fueled Water Heating Systems Residential: For projects that include residential construction, will the project, as a condition of approval, install the following types of electric or alternatively-fueled water heating system(s)? Please check which types of system(s) will be installed: ☐ Solar thermal water heater ☐ Tankless electric water heater ☐ Storage electric water heaters ☐ Electric heat pump water heater ☐ Tankless gas water heater ☐ Other Check "N/A" if the project does not contain any residential buildings.	E-1.2	☐	☐	☒
3b. Project Detail: Please substantiate how the project satisfies question 3a. Project does not propose or consist of any residential uses				

Step 2: CAP Measures Consistency				
Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
Water-Efficient Appliances and Plumbing Fixtures				
4a. Water Efficient Appliances and Plumbing Fixtures Residential: For new residential projects, will the project comply with all of the following water efficiency and conservation BMPs[2]? ☐ Kitchen Faucets: The maximum flow rate of kitchen faucets shall not exceed 1.5 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.5 gallons per minute at 60 psi[3]. ☐ Energy Efficient Appliances: Install at least one qualified ENERGY STAR dishwasher or clothes washer per unit. Check "N/A" if the project is a non-residential project.	W-1.1	☐	☐	☒
4b. Project Detail: Please substantiate how the project satisfies question 4a. Project does not propose or consist of any residential uses				
Rain Barrel Installations				
5a. Rain Barrel Installations Residential: For new residential projects, will the project make use of incentives to install one rain barrel per every 500 square feet of available roof area? Check "N/A" if the project is a non-residential project; if State, regional or local incentives/rebates to purchase rain barrels are not available; or if funding for programs/rebates has been exhausted.	W-2.1	☐	☐	☒
5b. Project Detail: Please substantiate how the project satisfies question 5a. Project does not propose or consist of any residential uses				

[2] CALGreen Tier 1 residential voluntary measure A4.303 of the California Green Building Standards Code.
[3] Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

Step 2: CAP Measures Consistency				
Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
Reduce Outdoor Water Use				
6a. Reduce Outdoor Water Use Residential: Will the project submit a Landscape Document Package that is compliant with the County's Water Conservation in Landscaping Ordinance[4] and demonstrates a 40% reduction in current Maximum Applied Water Allowance (MAWA) for outdoor use? Non-Residential: Will the project submit a Landscape Document Package that is compliant with the County's Water Conservation in Landscaping Ordinance and demonstrates a 40% reduction in current MAWA for outdoor use? Check "N/A" if the project does not propose any landscaping, or if the aggregate landscaped area is between 500 – 2,499 square feet and elects to comply with the Prescriptive Compliance Option within the Water Conservation in Landscaping Ordinance.	W-1.2	☒	☐	☐
6b. Project Detail: Please substantiate how the project satisfies question 6a. The Project shall submit a Landscape Document Package that complies with the referenced County Ordinance and demonstrates a 40 percent reduction in outdoor water use. The Landscape Document Package shall be submitted to the County for review and approval prior to issuance of any building permits and compliance with this measure shall be made a condition of the Project's approval.				
Agricultural and Farming Operations[5]				
7a. Agricultural and Farming Equipment Will the project use the San Diego County Air Pollution Control District's (SDAPCD's) farm equipment incentive program to convert gas- and diesel-powered farm equipment to electric equipment? Check "N/A" if the project does not contain any agricultural or farming operations; if the SDAPCD incentive program is no longer available; or if funding for the incentive program has been exhausted.	A-1.1	☐	☐	☒
7b. Project Detail: Please substantiate how the project satisfies question 7a. The Project does not propose any agricultural or farming operations.				

[4] http://www.sandiegocounty.gov/content/dam/sdc/cob/ordinances/ord10427.pdf.

[5] Existing agricultural operations would not be subject to questions 7 and 8 of the Checklist, unless a proposed expansion is subject to discretionary review and requires environmental review pursuant to CEQA.

Step 2: CAP Measures Consistency				
Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
8a. Electric Irrigation Pumps Will the project use SDAPCD's farm equipment incentive program to convert diesel- or gas-powered irrigation pumps to electric irrigation pumps? Check "N/A" if the project does not contain any agricultural or farming operations; if the SDAPCD incentive program is no longer available; or if funding for the incentive program has been exhausted.	A-1.2	☐	☐	☒

8b. Project Detail:
Please substantiate how the project satisfies question 8a.
The Project does not propose any agricultural or farming operations.

Tree Planting				
9a. Tree Planting <u>Residential:</u> For residential projects, will the project plant, at a minimum, two trees per every new residential dwelling unit proposed? Check "N/A" if the project is a non-residential project.	A-2.1	☐	☐	☒

9b. Project Detail:
Please substantiate how the project satisfies question 9a.
Project does not propose or consist of any residential uses but will plant trees.

ATTACHMENT B

CalEEMod Annual Input/Output

Liberty HS

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
High School	450.00	Student	6.25	59,697.44	0
Parking Lot	161.00	Space	1.45	64,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	525.68	**CH4 Intensity (lb/MWhr)**	0.021	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2021 RPS

Land Use - Site is 7.7 Acres

Construction Phase - CS

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - ce

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading -

Architectural Coating - rule 67 paint

Vehicle Trips - 854 per traffic study

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - rule 67 compliant paint

Energy Use -

Construction Off-road Equipment Mitigation - Tier III Required

Energy Mitigation - Per PV Watts 90KW system generates 149,002 kWh

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00

tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	100
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

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
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
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	230.00	203.00
tblConstructionPhase	NumDays	20.00	175.00
tblLandUse	LotAcreage	1.37	6.25
tblOffRoadEquipment	UsageHours	7.00	3.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.021
tblProjectCharacteristics	CO2IntensityFactor	720.49	525.68
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblVehicleTrips	WD_TR	1.71	1.90

2.0 Emissions Summary

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					
2020	0.6036	2.8235	2.4835	4.6300e-003	0.2649	0.1510	0.4158	0.1232	0.1420	0.2652	0.0000	407.8595	407.8595	0.0805	0.0000	409.8713
Maximum	**0.6036**	**2.8235**	**2.4835**	**4.6300e-003**	**0.2649**	**0.1510**	**0.4158**	**0.1232**	**0.1420**	**0.2652**	**0.0000**	**407.8595**	**407.8595**	**0.0805**	**0.0000**	**409.8713**

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					
2020	0.3623	0.5171	2.5658	4.6300e-003	0.2649	2.3200e-003	0.2672	0.1232	2.2400e-003	0.1254	0.0000	407.8591	407.8591	0.0805	0.0000	409.8710
Maximum	**0.3623**	**0.5171**	**2.5658**	**4.6300e-003**	**0.2649**	**2.3200e-003**	**0.2672**	**0.1232**	**2.2400e-003**	**0.1254**	**0.0000**	**407.8591**	**407.8591**	**0.0805**	**0.0000**	**409.8710**

	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	N20	CO2e
Percent Reduction	**39.97**	**81.69**	**-3.31**	**0.00**	**0.00**	**98.46**	**35.75**	**0.00**	**98.42**	**52.70**	**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)
9	1-1-2020	3-31-2020	0.8858	0.0772
10	4-1-2020	6-30-2020	0.7980	0.2392
11	7-1-2020	9-30-2020	0.8636	0.2795
		Highest	0.8858	0.2795

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	0.2678	5.0000e-005	5.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Energy	1.9100e-003	0.0173	0.0146	1.0000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	98.8227	98.8227	3.5600e-003	9.5000e-004	99.1959
Mobile	0.1961	0.8601	2.3062	7.7000e-003	0.6571	6.5800e-003	0.6637	0.1760	6.1500e-003	0.1821	0.0000	709.7139	709.7139	0.0381	0.0000	710.6674
Waste						0.0000	0.0000		0.0000	0.0000	16.6717	0.0000	16.6717	0.9853	0.0000	41.3033
Water						0.0000	0.0000		0.0000	0.0000	0.6289	19.6574	20.2863	0.0654	1.6700e-003	22.4198
Total	**0.4657**	**0.8775**	**2.3264**	**7.8000e-003**	**0.6571**	**7.9200e-003**	**0.6651**	**0.1760**	**7.4900e-003**	**0.1835**	**17.3005**	**828.2049**	**845.5055**	**1.0924**	**2.6200e-003**	**873.5980**

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	0.2678	5.0000e-005	5.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Energy	1.9100e-003	0.0173	0.0146	1.0000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	63.2940	63.2940	2.1400e-003	6.8000e-004	63.5512
Mobile	0.1961	0.8601	2.3062	7.7000e-003	0.6571	6.5800e-003	0.6637	0.1760	6.1500e-003	0.1821	0.0000	709.7139	709.7139	0.0381	0.0000	710.6674
Waste						0.0000	0.0000		0.0000	0.0000	16.6717	0.0000	16.6717	0.9853	0.0000	41.3033
Water						0.0000	0.0000		0.0000	0.0000	0.6289	19.6574	20.2863	0.0654	1.6700e-003	22.4198
Total	**0.4657**	**0.8775**	**2.3264**	**7.8000e-003**	**0.6571**	**7.9200e-003**	**0.6651**	**0.1760**	**7.4900e-003**	**0.1835**	**17.3005**	**792.6762**	**809.9768**	**1.0910**	**2.3500e-003**	**837.9533**

	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	N20	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**	**4.29**	**4.20**	**0.13**	**10.31**	**4.08**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	1/14/2020	5	10	
2	Grading	Grading	1/15/2020	2/28/2020	5	33	
3	Paving	Paving	3/1/2020	3/20/2020	5	15	
4	Building Construction	Building Construction	3/22/2020	12/30/2020	5	203	
5	Architectural Coating	Architectural Coating	5/1/2020	12/31/2020	5	175	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 16.5

Acres of Paving: 1.45

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 89,546; Non-Residential Outdoor: 29,849; Striped Parking Area: 3,864 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	3.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	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
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	52.00	20.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2020

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.2 Site Preparation - 2020

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	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	**3.3000e-004**	**2.5000e-004**	**2.4100e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6524**	**0.6524**	**2.0000e-005**	**0.0000**	**0.6529**

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**2.3300e-003**	**0.0101**	**0.1043**	**1.9000e-004**	**0.0903**	**5.0000e-005**	**0.0904**	**0.0497**	**5.0000e-005**	**0.0497**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.2 Site Preparation - 2020

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	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	**3.3000e-004**	**2.5000e-004**	**2.4100e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6524**	**0.6524**	**2.0000e-005**	**0.0000**	**0.6529**

3.3 Grading - 2020

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					0.1081	0.0000	0.1081	0.0556	0.0000	0.0556	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0401	0.4354	0.2649	4.9000e-004		0.0210	0.0210		0.0193	0.0193	0.0000	42.9969	42.9969	0.0139	0.0000	43.3446
Total	**0.0401**	**0.4354**	**0.2649**	**4.9000e-004**	**0.1081**	**0.0210**	**0.1291**	**0.0556**	**0.0193**	**0.0749**	**0.0000**	**42.9969**	**42.9969**	**0.0139**	**0.0000**	**43.3446**

3.3 Grading - 2020

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	9.1000e-004	6.8000e-004	6.6200e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7941	1.7941	5.0000e-005	0.0000	1.7954
Total	**9.1000e-004**	**6.8000e-004**	**6.6200e-003**	**2.0000e-005**	**1.9800e-003**	**1.0000e-005**	**2.0000e-003**	**5.3000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.7941**	**1.7941**	**5.0000e-005**	**0.0000**	**1.7954**

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					0.1081	0.0000	0.1081	0.0556	0.0000	0.0556	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9900e-003	0.0260	0.2929	4.9000e-004		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	42.9969	42.9969	0.0139	0.0000	43.3445
Total	**5.9900e-003**	**0.0260**	**0.2929**	**4.9000e-004**	**0.1081**	**1.2000e-004**	**0.1082**	**0.0556**	**1.2000e-004**	**0.0557**	**0.0000**	**42.9969**	**42.9969**	**0.0139**	**0.0000**	**43.3445**

3.3 Grading - 2020

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	9.1000e-004	6.8000e-004	6.6200e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7941	1.7941	5.0000e-005	0.0000	1.7954
Total	**9.1000e-004**	**6.8000e-004**	**6.6200e-003**	**2.0000e-005**	**1.9800e-003**	**1.0000e-005**	**2.0000e-003**	**5.3000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.7941**	**1.7941**	**5.0000e-005**	**0.0000**	**1.7954**

3.4 Paving - 2020

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	0.0102	0.1055	0.1099	1.7000e-004		5.6500e-003	5.6500e-003		5.1900e-003	5.1900e-003	0.0000	15.0212	15.0212	4.8600e-003	0.0000	15.1426
Paving	1.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0121**	**0.1055**	**0.1099**	**1.7000e-004**		**5.6500e-003**	**5.6500e-003**		**5.1900e-003**	**5.1900e-003**	**0.0000**	**15.0212**	**15.0212**	**4.8600e-003**	**0.0000**	**15.1426**

3.4 Paving - 2020

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	4.1000e-004	3.1000e-004	3.0100e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8155	0.8155	2.0000e-005	0.0000	0.8161
Total	**4.1000e-004**	**3.1000e-004**	**3.0100e-003**	**1.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8155**	**0.8155**	**2.0000e-005**	**0.0000**	**0.8161**

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	2.1000e-003	9.1200e-003	0.1297	1.7000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	15.0212	15.0212	4.8600e-003	0.0000	15.1426
Paving	1.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.0000e-003**	**9.1200e-003**	**0.1297**	**1.7000e-004**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**15.0212**	**15.0212**	**4.8600e-003**	**0.0000**	**15.1426**

3.4 Paving - 2020

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	4.1000e-004	3.1000e-004	3.0100e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8155	0.8155	2.0000e-005	0.0000	0.8161
Total	**4.1000e-004**	**3.1000e-004**	**3.0100e-003**	**1.0000e-005**	**9.0000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8155**	**0.8155**	**2.0000e-005**	**0.0000**	**0.8161**

3.5 Building Construction - 2020

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	0.1922	1.6738	1.6028	2.4400e-003		0.1021	0.1021		0.0962	0.0962	0.0000	209.3577	209.3577	0.0490	0.0000	210.5835
Total	**0.1922**	**1.6738**	**1.6028**	**2.4400e-003**		**0.1021**	**0.1021**		**0.0962**	**0.0962**	**0.0000**	**209.3577**	**209.3577**	**0.0490**	**0.0000**	**210.5835**

3.5 Building Construction - 2020

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	7.7300e-003	0.2314	0.0615	5.5000e-004	0.0135	1.1300e-003	0.0146	3.8900e-003	1.0800e-003	4.9700e-003	0.0000	53.5639	53.5639	4.1100e-003	0.0000	53.6665
Worker	0.0195	0.0144	0.1412	4.2000e-004	0.0423	3.0000e-004	0.0426	0.0113	2.8000e-004	0.0115	0.0000	38.2589	38.2589	1.1500e-003	0.0000	38.2877
Total	**0.0272**	**0.2458**	**0.2027**	**9.7000e-004**	**0.0558**	**1.4300e-003**	**0.0572**	**0.0151**	**1.3600e-003**	**0.0165**	**0.0000**	**91.8228**	**91.8228**	**5.2600e-003**	**0.0000**	**91.9542**

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	0.0297	0.2112	1.6403	2.4400e-003		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	209.3574	209.3574	0.0490	0.0000	210.5832
Total	**0.0297**	**0.2112**	**1.6403**	**2.4400e-003**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**209.3574**	**209.3574**	**0.0490**	**0.0000**	**210.5832**

3.5 Building Construction - 2020

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	7.7300e-003	0.2314	0.0615	5.5000e-004	0.0135	1.1300e-003	0.0146	3.8900e-003	1.0800e-003	4.9700e-003	0.0000	53.5639	53.5639	4.1100e-003	0.0000	53.6665
Worker	0.0195	0.0144	0.1412	4.2000e-004	0.0423	3.0000e-004	0.0426	0.0113	2.8000e-004	0.0115	0.0000	38.2589	38.2589	1.1500e-003	0.0000	38.2877
Total	**0.0272**	**0.2458**	**0.2027**	**9.7000e-004**	**0.0558**	**1.4300e-003**	**0.0572**	**0.0151**	**1.3600e-003**	**0.0165**	**0.0000**	**91.8228**	**91.8228**	**5.2600e-003**	**0.0000**	**91.9542**

3.6 Architectural Coating - 2020

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	0.2857					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0212	0.1473	0.1603	2.6000e-004		9.7100e-003	9.7100e-003		9.7100e-003	9.7100e-003	0.0000	22.3410	22.3410	1.7300e-003	0.0000	22.3842
Total	**0.3068**	**0.1473**	**0.1603**	**2.6000e-004**		**9.7100e-003**	**9.7100e-003**		**9.7100e-003**	**9.7100e-003**	**0.0000**	**22.3410**	**22.3410**	**1.7300e-003**	**0.0000**	**22.3842**

3.6 Architectural Coating - 2020

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	3.2300e-003	2.3900e-003	0.0234	7.0000e-005	7.0200e-003	5.0000e-005	7.0700e-003	1.8600e-003	5.0000e-005	1.9100e-003	0.0000	6.3427	6.3427	1.9000e-004	0.0000	6.3474
Total	**3.2300e-003**	**2.3900e-003**	**0.0234**	**7.0000e-005**	**7.0200e-003**	**5.0000e-005**	**7.0700e-003**	**1.8600e-003**	**5.0000e-005**	**1.9100e-003**	**0.0000**	**6.3427**	**6.3427**	**1.9000e-004**	**0.0000**	**6.3474**

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	0.2857					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6000e-003	0.0113	0.1603	2.6000e-004		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	22.3409	22.3409	1.7300e-003	0.0000	22.3842
Total	**0.2883**	**0.0113**	**0.1603**	**2.6000e-004**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**22.3409**	**22.3409**	**1.7300e-003**	**0.0000**	**22.3842**

3.6 Architectural Coating - 2020

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	3.2300e-003	2.3900e-003	0.0234	7.0000e-005	7.0200e-003	5.0000e-005	7.0700e-003	1.8600e-003	5.0000e-005	1.9100e-003	0.0000	6.3427	6.3427	1.9000e-004	0.0000	6.3474
Total	**3.2300e-003**	**2.3900e-003**	**0.0234**	**7.0000e-005**	**7.0200e-003**	**5.0000e-005**	**7.0700e-003**	**1.8600e-003**	**5.0000e-005**	**1.9100e-003**	**0.0000**	**6.3427**	**6.3427**	**1.9000e-004**	**0.0000**	**6.3474**

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	0.1961	0.8601	2.3062	7.7000e-003	0.6571	6.5800e-003	0.6637	0.1760	6.1500e-003	0.1821	0.0000	709.7139	709.7139	0.0381	0.0000	710.6674
Unmitigated	0.1961	0.8601	2.3062	7.7000e-003	0.6571	6.5800e-003	0.6637	0.1760	6.1500e-003	0.1821	0.0000	709.7139	709.7139	0.0381	0.0000	710.6674

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
High School	855.00	274.50	112.50	1,743,695	1,743,695
Parking Lot	0.00	0.00	0.00		
Total	855.00	274.50	112.50	1,743,695	1,743,695

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
High School	9.50	7.30	7.30	77.80	17.20	5.00	75	19	6
Parking Lot	9.50	7.30	7.30	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
High School	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193
Parking Lot	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	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	44.4347	44.4347	1.7800e-003	3.4000e-004	44.5799
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	79.9634	79.9634	3.1900e-003	6.1000e-004	80.2246
NaturalGas Mitigated	1.9100e-003	0.0173	0.0146	1.0000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	18.8592	18.8592	3.6000e-004	3.5000e-004	18.9713
NaturalGas Unmitigated	1.9100e-003	0.0173	0.0146	1.0000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	18.8592	18.8592	3.6000e-004	3.5000e-004	18.9713

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					
High School	353409	1.9100e-003	0.0173	0.0146	1.0000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	18.8592	18.8592	3.6000e-004	3.5000e-004	18.9713
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
Total		**1.9100e-003**	**0.0173**	**0.0146**	**1.0000e-004**		**1.3200e-003**	**1.3200e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**18.8592**	**18.8592**	**3.6000e-004**	**3.5000e-004**	**18.9713**

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					
High School	353409	1.9100e-003	0.0173	0.0146	1.0000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	18.8592	18.8592	3.6000e-004	3.5000e-004	18.9713
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
Total		**1.9100e-003**	**0.0173**	**0.0146**	**1.0000e-004**		**1.3200e-003**	**1.3200e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**18.8592**	**18.8592**	**3.6000e-004**	**3.5000e-004**	**18.9713**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	312815	74.5889	2.9800e-003	5.7000e-004	74.8325
Parking Lot	22540	5.3745	2.1000e-004	4.0000e-005	5.3921
Total		**79.9634**	**3.1900e-003**	**6.1000e-004**	**80.2246**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
High School	238314	56.8246	2.2700e-003	4.3000e-004	57.0102
Parking Lot	-51961	-12.3898	-0.0005	-0.0001	-12.4303
Total		**44.4347**	**1.7800e-003**	**3.4000e-004**	**44.5799**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.2678	5.0000e-005	5.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Unmitigated	0.2678	5.0000e-005	5.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116

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	0.0299					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.3000e-004	5.0000e-005	5.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Total	**0.2678**	**5.0000e-005**	**5.6400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0109**	**0.0109**	**3.0000e-005**	**0.0000**	**0.0116**

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	0.0299					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.3000e-004	5.0000e-005	5.6400e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Total	**0.2678**	**5.0000e-005**	**5.6400e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0109**	**0.0109**	**3.0000e-005**	**0.0000**	**0.0116**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	20.2863	0.0654	1.6700e-003	22.4198
Unmitigated	20.2863	0.0654	1.6700e-003	22.4198

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	1.98223 / 5.09717	20.2863	0.0654	1.6700e-003	22.4198
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**20.2863**	**0.0654**	**1.6700e-003**	**22.4198**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
High School	1.98223 / 5.09717	20.2863	0.0654	1.6700e-003	22.4198
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**20.2863**	**0.0654**	**1.6700e-003**	**22.4198**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.6717	0.9853	0.0000	41.3033
Unmitigated	16.6717	0.9853	0.0000	41.3033

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	82.13	16.6717	0.9853	0.0000	41.3033
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6717**	**0.9853**	**0.0000**	**41.3033**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
High School	82.13	16.6717	0.9853	0.0000	41.3033
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6717**	**0.9853**	**0.0000**	**41.3033**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT C

RPS Calculations

SDG&E GHG Energy Emission Factors with RPS

Year	RPS Achieved	Co2 Intensity	CH4 Intensity	N2O Intensity	
2009	**10.50%**	**720.49**	**0.0290**	**0.0060**	
2015	**20.0%**	**644.01**	**0.0259**	**0.0054**	
2020	**33.0%**	**539.36**	**0.0217**	**0.0045**	**33% Required by Law**
2021	**34.7%**	**525.68**	**0.0212**	**0.0044**	
2022	**36.4%**	**511.99**	**0.0206**	**0.0043**	
2023	**38.1%**	**498.31**	**0.0201**	**0.0041**	
2024	**39.8%**	**484.62**	**0.0195**	**0.0040**	
2025	**41.5%**	**470.93**	**0.0190**	**0.0039**	
2026	**43.2%**	**457.25**	**0.0184**	**0.0038**	
2027	**44.9%**	**443.56**	**0.0179**	**0.0037**	
2028	**46.6%**	**429.88**	**0.0173**	**0.0036**	
2029	**48.3%**	**416.19**	**0.0168**	**0.0035**	
2030	**50.0%**	**402.51**	**0.0162**	**0.0034**	50% Required by Law

ATTACHMENT D

PV Calculations

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at https://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

149,002 kWh/Year*

System output may range from 143,221 to 149,941 kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Value ($)
January	4.58	9,801	1,602
February	5.08	9,850	1,610
March	6.25	13,144	2,149
April	6.65	13,440	2,197
May	6.95	14,233	2,327
June	7.35	14,260	2,332
July	7.39	14,812	2,422
August	7.43	14,650	2,395
September	6.93	13,194	2,157
October	5.92	12,001	1,962
November	4.98	10,020	1,638
December	4.42	9,597	1,569
Annual	**6.16**	**149,002**	**$ 24,360**

Location and Station Identification

Requested Location	chase avenue el cajon ca
Weather Data Source	Lat, Lon: 32.77, -116.94 0.4 mi
Latitude	32.77° N
Longitude	116.94° W

PV System Specifications *(Residential)*

DC System Size	90 kW
Module Type	Standard
Array Type	Fixed (roof mount)
Array Tilt	20°
Array Azimuth	180°
System Losses	14.08%
Inverter Efficiency	96%
DC to AC Size Ratio	1.2

Economics

Average Retail Electricity Rate	0.164 $/kWh

Performance Metrics

Capacity Factor	18.9%

ATTACHMENT E

Trip Mile Reduction Memo

Kimley»Horn

MEMORANDUM

To: Jerry Keough

From: Leo Espelet, P.E., T.E.

Kimley-Horn and Associates, Inc.

Date: May 24th, 2019

Subject: Liberty Charter High School - Current Student Enrollment

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The following are exhibits illustrating the current student enrollment by Zip Code for all Literacy First Charter Schools campuses. The data was broken down by Elementary, Middle and High School levels.

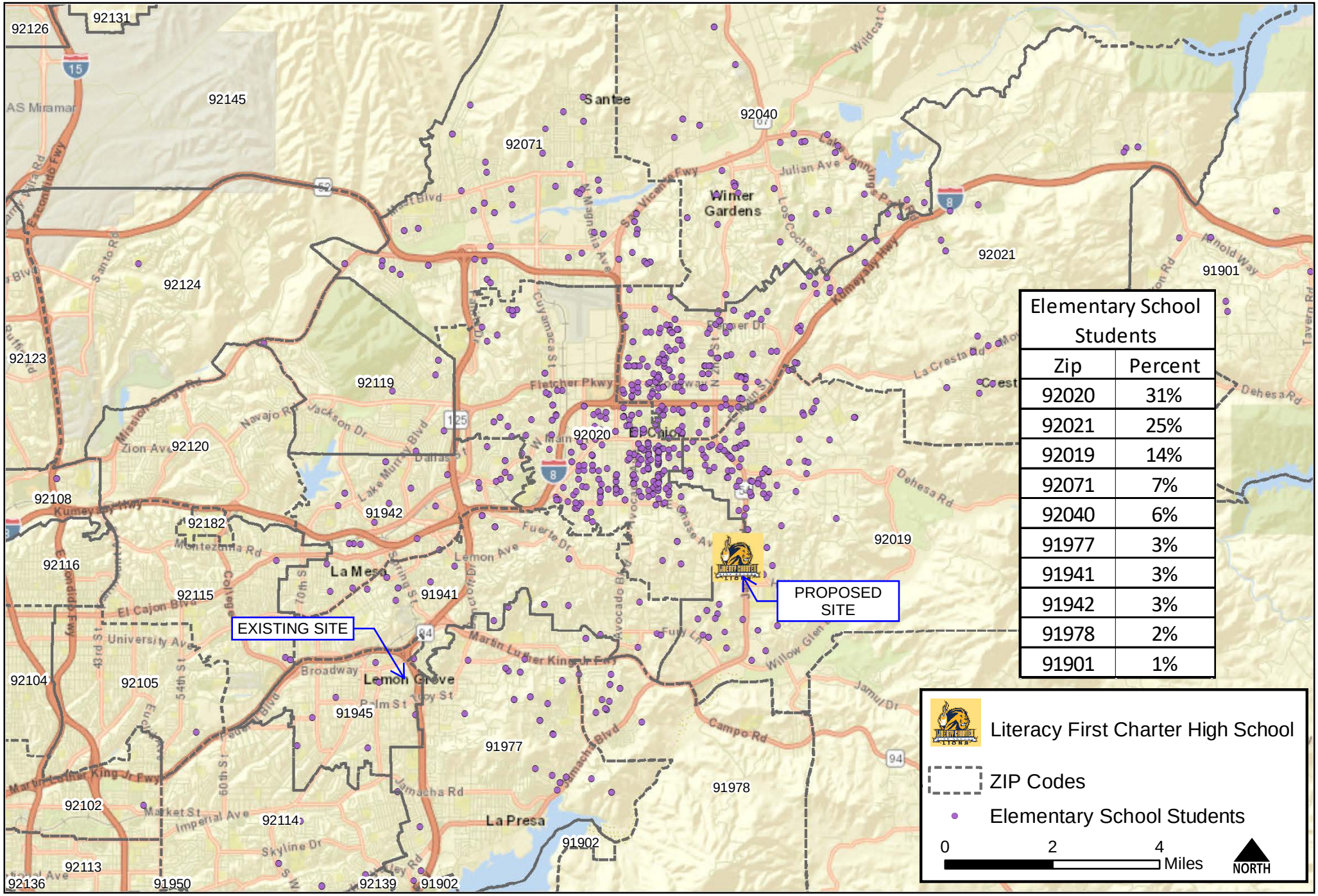
Table 1 illustrates the summary of a potential Vehicle Miles Travel (VMT) changed based on the relocation of the existing site from its current location in Lemon Grove (Zip Code 91945) to the proposed location (Zip Code 92020).

Table 1 - Estimated VMT analysis based on existing Student Population

Existing School Level	% of students with estimated reduction on VMT	% of students with approximately equal VMT	% of students with estimated increase on VMT
High School	32%	15%	49%
Middle School	73%	13%	14%
Elementary School	79%	13%	9%

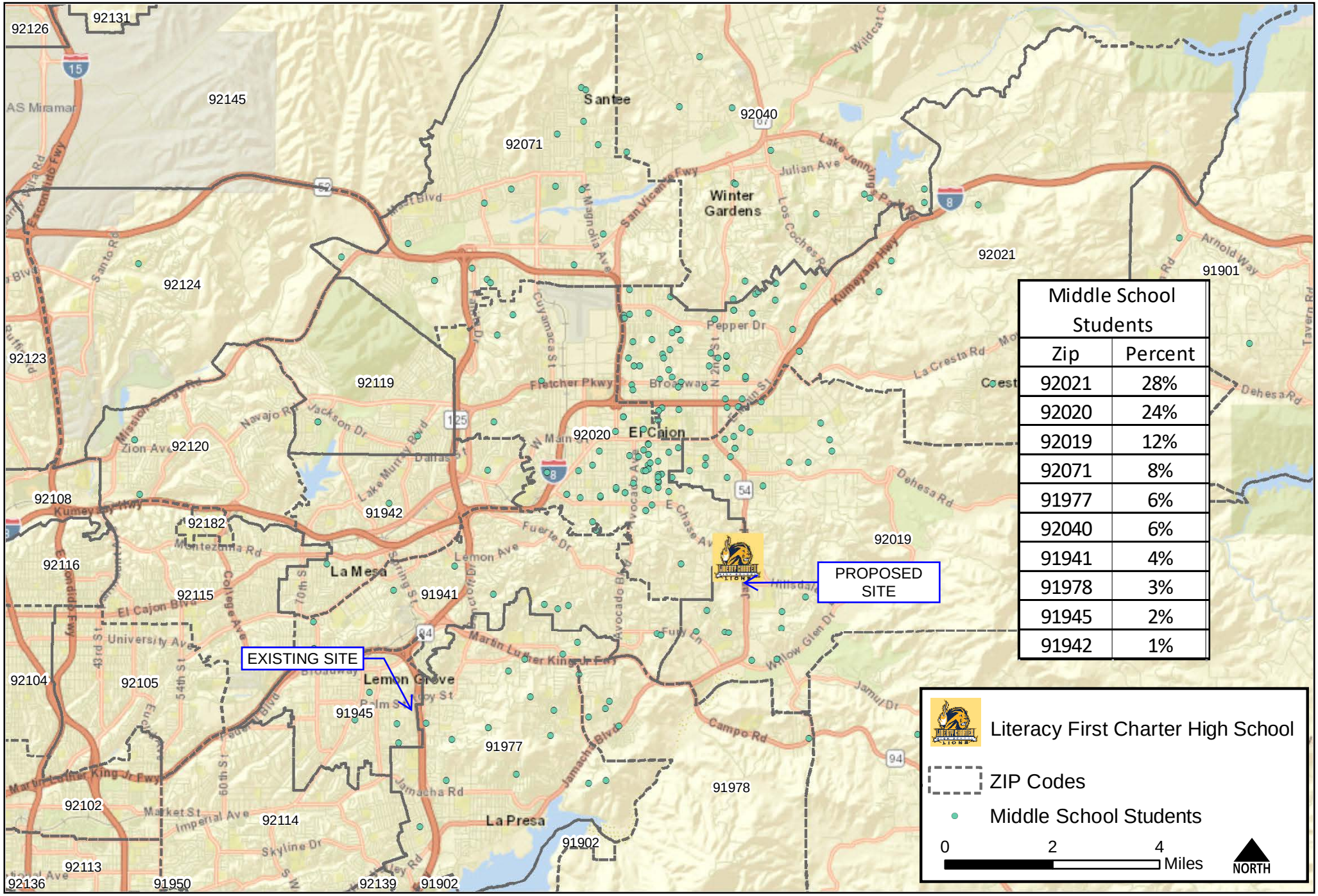
As shown in **Table 1**, based on the existing High School student population, approximately 49% of the students would have a larger driving distance compare to 32% that would have a shorter driving distance. However, when the future student population is evaluated (Existing Middle School and Elementary School students), the percentage of students with a potential shorter driving distance increases to 73% and 79%, respectively. The analysis shows that the relocation of the High School site would bring a significant reduction on VMT based on the existing population of Middle and Elementary School students that would be likely to attend the High School in the upcoming years.

STUDENT DISTRIBUTION

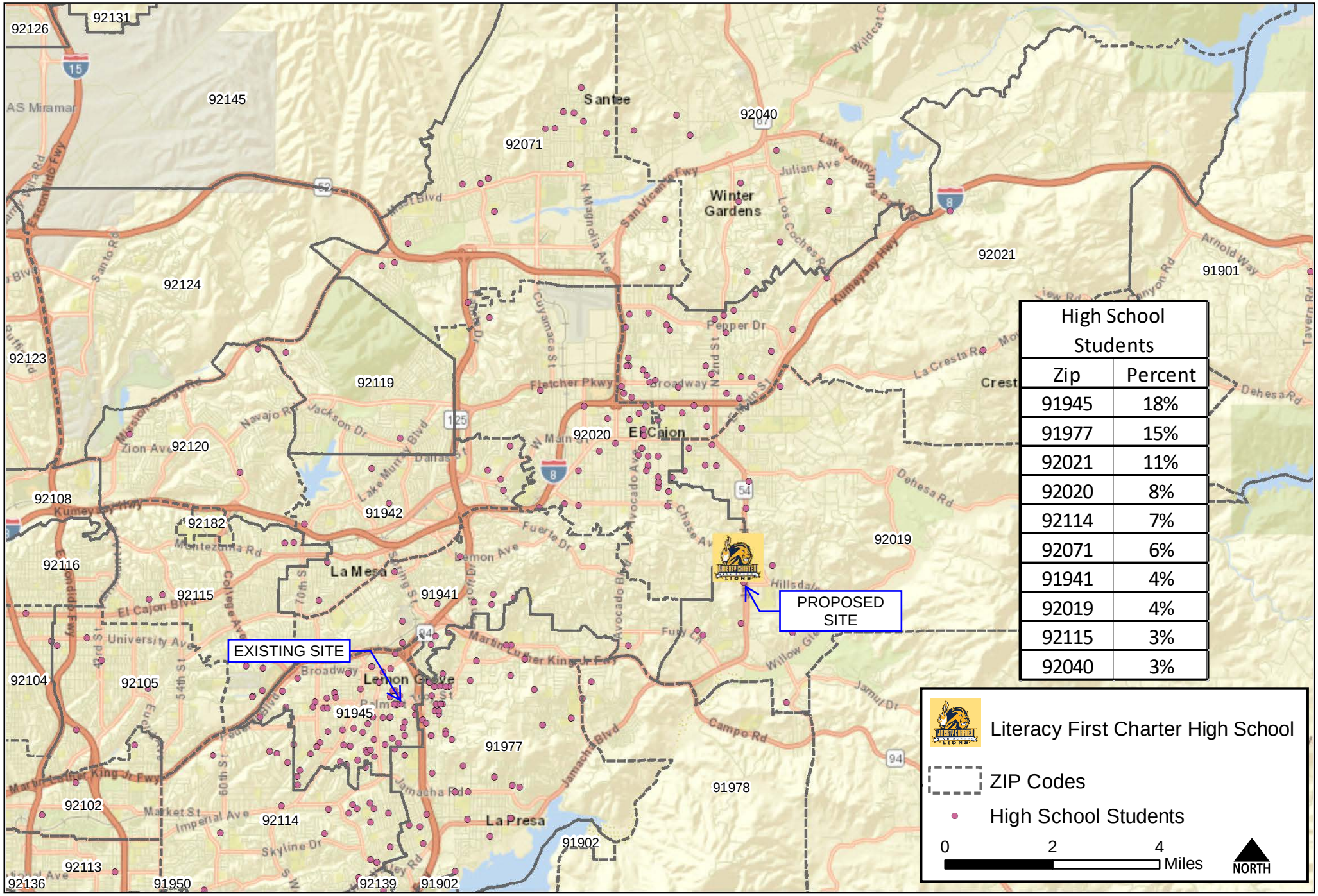


Elementary School Students	
Zip	Percent
92020	31%
92021	25%
92019	14%
92071	7%
92040	6%
91977	3%
91941	3%
91942	3%
91978	2%
91901	1%

STUDENT DISTRIBUTION



STUDENT DISTRIBUTION



High School Students	
Zip	Percent
91945	18%
91977	15%
92021	11%
92020	8%
92114	7%
92071	6%
91941	4%
92019	4%
92115	3%
92040	3%