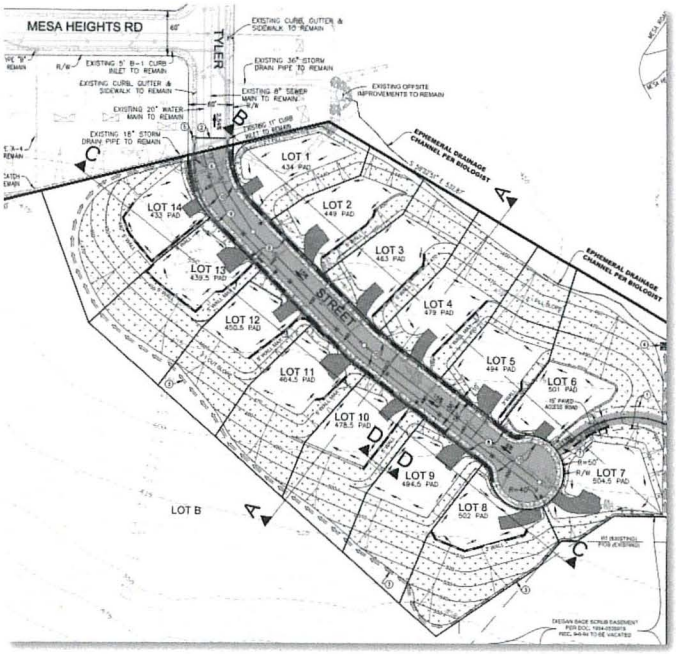
Air Quality/Greenhouse Gas Report

Tyler Street Project

City of Santee



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AIR ANALYSES

August 2020

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Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
AAQS	ambient air quality standard
AB	Assembly Bill
ADAM	CARB's Aerometric Data Analysis and Management System
AMSL	above mean sea level
AQIA	Air Quality Impact Assessment
AQR	Air Quality Report
AR4	4th Assessment Report
BAU	business as usual
CAAQS	California Ambient Air Quality Standards
CalEEMod™	California Emissions Estimator Model
CalGreen Code	California Green Building Standards Code
CAFE	Corporate Average Fuel Economy
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Control Board
CAT	Climate Action Team
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbon
CH_4	methane
City	City of Santee
Checklist	Santee's CEQA Project Consistency Checklist
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DPM	diesel particulate matter
EISA	Energy Independence and Security Act of 2007
EPA	United States Environmental Protection Agency
ft^2	square foot
FCAA	Federal Clean Air Act
GHG	greenhouse gas
GP	General Plan
GWP	global warming potential
HFC	hydrofluorocarbon
IPCC	International Panel on Climate Change
M	million
$MtCO_2e$	million tonnes of carbon dioxide equivalents

Acronyms and Abbreviations

N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Transportation Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	respirable particulate matter of 10 micrometers or less in size
$PM_{2.5}$	fine particulate matter of 2.5 micrometers or less in size
ppd	pounds per day
ppm	parts per million
RAQS	San Diego County Regional Air Quality Strategy
ROG	reactive organic gases
SANDAG	San Diego Association of Governments
SAR	Second Assessment Report
SB	Senate Bill
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SLT	screening level thresholds
SSP	Sustainable Santee Plan
SO_2	sulfur dioxide
t	abbreviation for tonne (or metric ton)
TAC	toxic air contaminants
tCO_2e	tonne of carbon dioxide equivalents
UNFCCC	United Nations Framework Convention on Climate Change
VOC	volatile organic compounds
WRI	World Resources Institute

SECTION 1.0 – INTRODUCTION

1.1. Report Purpose

The purpose of this Air Quality/Greenhouse Gas Report (AQR or Report) is to analyze the potential air quality and climate change impacts that could occur with the construction and operation of the Tyler Street Project (Project), in the City of Santee, California. This assessment was conducted within the context of the California Environmental Quality Act (CEQA), California Public Resources Code Sections 21000 et seq.).

1.2. Project Location

The Project site consists of currently a vacant lot located in the City of Santee in San Diego County (see Figure 1). More specifically, the Project site is located immediately south of the intersection of Mesa Heights Road and Tyler Street (see Figure 2).

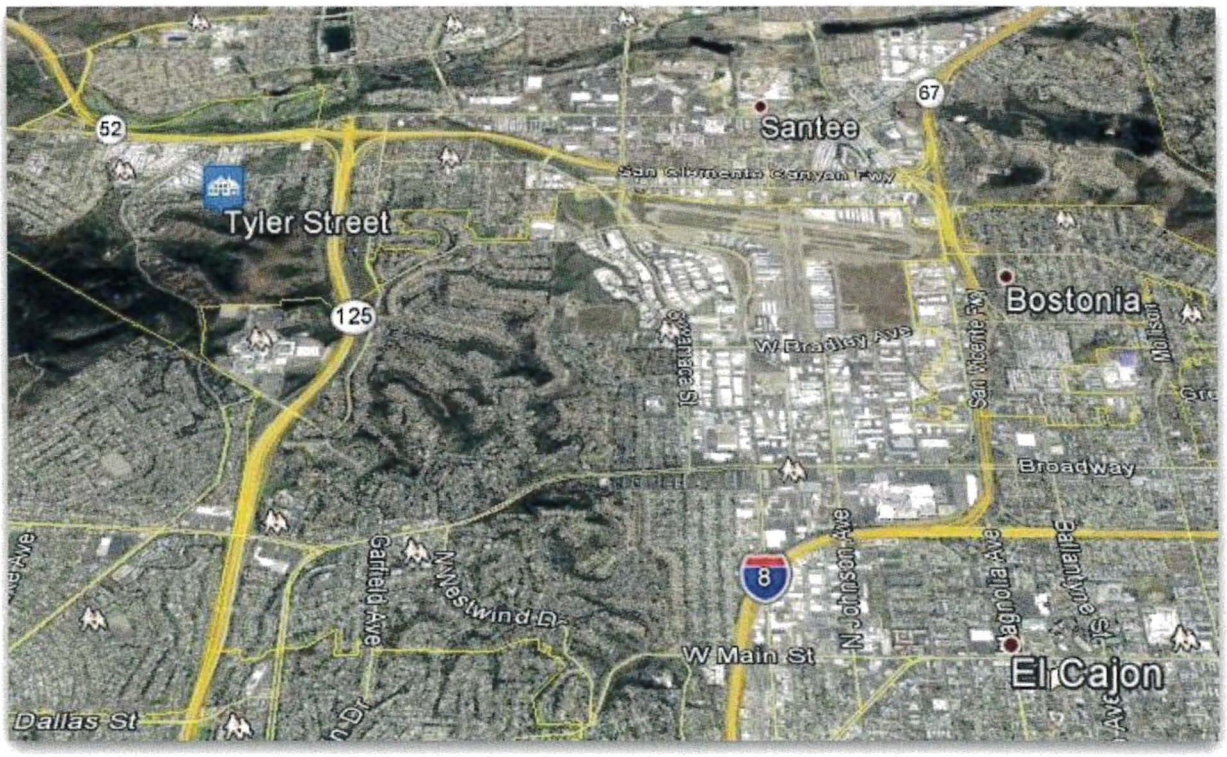

Figure 1 – Vicinity

1.3. Project Description

The Project would consist of producing the building pads for 14 single family homes on lots over 15,000 square foot (ft^2) each on less than 8 gross acres of currently vacant land, which is zoned Low Density Residential. All structure building would be the responsibility of the new owners. This Report will analyze the building construction and add operational emissions for informational purposes only.

Figure 2 - Location

SECTION 2.0 – BACKGROUND CONDITIONS

Air quality is determined primarily by the type and quantity of contaminants emitted into the atmosphere, the size and topography of the air basin, and its meteorological conditions. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollution emissions and air quality.

2.1. Climatology / Meteorology

Meteorology is the study of weather and climate. Weather refers to the state of the atmosphere at a given time and place regarding temperature, air pressure, humidity, cloudiness, and precipitation. The term "weather" refers to conditions over short periods; however, conditions over long periods, generally at least 30 to 50 years, are referred to as climate. Climate, in a narrow sense, is usually defined as the "average weather," or more rigorously as the statistical description in terms of the mean and variability of relevant quantities over a period ranging from months to thousands or millions of years. These quantities are most commonly surface variables such as temperature, precipitation, and wind.

General climatic conditions in San Diego County is characterized by warm, dry summers and mild winters. One of the main determinants of the climatology is a semi-permanent high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation.

2.1.1 Temperature and Precipitation

The nearest National Weather Service Cooperative Observer Program weather station to the project is the station in El Cajon, located approximately 2.3 miles southeast of the Project. At the El Cajon [1]Station, average recorded rainfall during the Period of Record (1979 to 2016) measured 12.04 inches, with over 91 percent of precipitation occurring between November and April and 60 percent in just January through March. Monthly average maximum temperatures at this station vary annually by only 19.6 degrees Fahrenheit (ºF); 88.9 °F at the hottest to 69.3 ºF at the coldest and monthly average minimum temperatures only vary by 22.9 °F annually; i.e. from 41.3 °F to 64.2 ºF.

2.1.2 Inversions

A common atmospheric condition known as a temperature inversion affects air quality in the San Diego area. During an inversion, air temperatures get warmer rather than cooler with increasing height. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific high-pressure cell encounters cool marine air. The boundary between the layers of air represents a temperature inversion, which is located approximately 2,000 feet above mean sea level (AMSL) during the months of May through October and approximately 3,000 feet AMSL during the winter months (November through April). Inversion layers are important determinants of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality.

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[1] Western U.S. Climate Historical Summaries. Western Regional Climate Center. http://www.wrcc.dri.edu/Climsum.html. Accessed August 2020.

Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high ozone concentrations, as measured at air pollutant monitoring stations within the County. The transport of air pollutants from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of ozone are transported.

SECTION 3.0 – REGULATORY ENVIRONMENT

Air pollutants are regulated at the national, State, and air basin level; each agency has a different degree of control. The United States Environmental Protection Agency (EPA) regulates at the national level; the California Air Resources Board (CARB) regulates at the State level; and the San Diego Air Pollution Control District (SDAPCD) regulates at the air basin level in the Project area.

3.1. Regulatory Agencies

3.1.1 Environmental Protection Agency (EPA)

EPA is the federal agency responsible for overseeing state air programs as they relate to the Federal Clean Air Act (FCAA), approving State Implementation Plans (SIPs), establishing National Ambient Air Quality Standards (NAAQS) and setting emission standards for mobile sources under federal jurisdiction. EPA has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

3.1.2 California Air Resources Board (CARB)

CARB is the state agency responsible for establishing California Ambient Air Quality Standards (CAAQS), adopting and enforcing emission standards for various sources including mobile sources (except where federal law preempts their authority), fuels, consumer products, and toxic air contaminants. CARB is also responsible for providing technical support to California's 35 local air districts, which are organized at the county or regional level, overseeing local air district compliance with State and federal law, approving local air plans and submitting the SIP to the EPA. CARB also regulates mobile emission sources in California, such as construction equipment, trucks, and automobiles.

For the purposes of managing air quality in California, the California Health & Safety Codes Section 39606(a)(2) gave the CARB the responsibility to "based upon similar meteorological and geographic conditions and consideration for political boundary lines whenever practicable, divide the State into air basins to fulfill the purposes of this division". San Diego County is located within the San Diego Air Basin (SDAB or Basin).

3.1.3 San Diego Air Pollution Control District (SDAPCD)

The SDAPCD shares responsibility with CARB for ensuring that all State and federal ambient air quality standards are achieved and maintained within the County. State law assigns to local air pollution control districts the primary responsibility for control of air pollution from stationary sources, while reserving an oversight role for CARB. Generally, the air pollution control districts must meet minimum State and EPA program requirements. The air pollution control district is also responsible for the inspection of stationary sources, monitoring of ambient air quality, and planning activities such as modeling and maintenance of the emission inventory. Air pollution control districts in State nonattainment areas are also responsible for developing and implementing transportation control measures necessary to achieve the state ambient air quality.

3.2. Criteria Air Pollutants

As required by the FCAA, the EPA has identified criteria pollutants and established NAAQS to protect public health and welfare. NAAQS have been established for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended particulate matter (PM), and lead. Suspended PM has standards for both PM with an

aerodynamic diameter of 10 micrometers or less (respirable PM, or PM_{10}) and PM with an aerodynamic diameter of 2.5 micrometers or less (fine PM, or $PM_{2.5}$). The CARB has established separate standards for the State, i.e. the CAAQS. CARB established CAAQS for all the federal pollutants and sulfates, hydrogen sulfide, and visibility-reducing particles.

Table 1 – National and State Ambient Air Quality Standards[2]

Air Pollutant	Averaging Time	California Standard	National Standard
Ozone	1 hour 8 hour	0.09 ppm 0.070 ppm	— 0.070 ppm
Respirable particulate matter (PM_{10})	24 hour Mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 —
Fine particulate matter ($PM_{2.5}$)	24 hour Mean	— 12 µg/m^3	35 µg/m^3 12.0 µg/m^3
Carbon monoxide (CO)	1 hour 8 hour	20 ppm 9.0 ppm	35 ppm 9 ppm
Nitrogen dioxide (NO_2)	1 hour Mean	0.18 ppm 0.030 ppm	100 ppb 0.053 ppm
Sulfur dioxide (SO_2)	1 hour 24 hour	0.25 ppm 0.04 ppm	75 ppb —
Lead	30-day Rolling 3-month	1.5 µg/m^3 —	— 0.15 µg/m^3
Sulfates	24 hour	25 µg/m^3	**No Federal Standard**
Hydrogen sulfide	1 hour	0.03 ppm	
Vinyl chloride	24 hour	0.01 ppm	
Visibility-reducing particles	8 hour	Extinction coefficient of 0.23 per kilometer, visibility of ten miles or more due to particles when relative humidity is less than 70%.	

Abbreviations:
ppm = parts per million ppb = parts per billion 30-day = 30-day average
µg/m^3 = micrograms per cubic meter Mean = Annual Arithmetic Mean

For some of the pollutants, the identified air quality standards are expressed in more than one averaging time to address the typical exposures found in the environment. For example, CO is expressed as a one-hour averaging time

[2] Ambient Air Quality Standards. California Air Resources Board. https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed August 2020.

and an eight-hour averaging time. Regulations have set NAAQS and CAAQS limits in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). The standards are presented in **Table 1** and the following text provides descriptions and health effects of each.

3.2.1 Ozone

Ozone is not emitted directly to the atmosphere but is formed by photochemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight. The long, hot, humid days of summer are particularly contributing to ozone formation; thus, ozone levels are of concern primarily during the months of May through September.

- **Reactive organic gases (ROG)** are defined as any compound of carbon, excluding CO, carbon dioxide (CO_2), carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participate in atmospheric photochemical reactions. It should be noted that there are no State or national ambient air quality standard for ROG because ROGs are not classified as criteria pollutants. They are regulated, however, because a reduction in ROG emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROGs are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
- **Nitrogen oxides (NO_X)** serve as integral participants in the process of photochemical smog production. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_X is an ozone precursor. A precursor is a directly emitted air contaminant that, when released into the atmosphere, forms, causes to be formed, or contributes to the formation of a secondary air contaminant for which an ambient air quality standard (AAQS) has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more AAQSs. When NO_X and ROG are released in the atmosphere, they can chemically react with one another in the presence of sunlight to form ozone.

Ozone is a strong chemical oxidant that adversely affects human health through effects on respiratory function. Ozone can also damage forests and crops. Ozone is not emitted directly by industrial sources or motor vehicles but instead, is formed in the lower atmosphere, the troposphere. Ozone is formed by a complex series of chemical reactions involving NO_X, the result of combustion processes and evaporative ROGs such as industrial solvents, toluene, xylene, and hexane as well as the various hydrocarbons that are evaporated from the gasoline used by motor vehicles or emitted through the tailpipe following combustion. Additionally, ROGs are emitted by natural sources such as trees and crops. Ozone formation is promoted by strong sunlight, warm temperatures, and winds. High concentrations tend to be a problem in the San Diego County only during the hot summer months when these conditions frequently occur.

3.2.2 Particulate matter (PM)

PM is a general term used to describe a complex group of airborne solid, liquid, or semi-volatile materials of various size and composition. Primary PM is emitted directly into the atmosphere from both human activities (including agricultural operations, industrial processes, construction and demolition activities, and entrainment of road dust into the air) and non-anthropogenic activities (such as windblown dust and ash resulting from forest fires). Secondary PM is formed in the atmosphere from predominantly gaseous combustion by-product precursors, such as sulfur oxides and NO_X, and ROGs. The overwhelming majority of airborne PM in San Diego County is primary PM. The major source of primary PM is fugitive windblown dust, with other contributions from entrained road dust, farming,

and construction activities.

Particle size is a critical characteristic of PM that primarily determines the location of PM deposition along the respiratory system (and associated health effects) as well as the degradation of visibility through light scattering. In the United States, federal and state agencies have established two types of PM air quality standards as shown in **Table 1**. PM_{10} corresponds to the fraction of PM no greater than 10 microns in aerodynamic diameter and is commonly called respirable particulate matter, while $PM_{2.5}$ refers to the subset of PM_{10} of aerodynamic diameter smaller than 2.5 microns, which is commonly called fine particulate matter.

PM air pollution has undesirable and detrimental environmental effects. PM affects vegetation, both directly (e.g. deposition of nitrates and sulfates may cause direct foliar damage) and indirectly (e.g. coating of plants upon gravitational settling reduces light absorption). PM also accumulates to form regional haze, which reduces visibility due to scattering of light. Agencies concerned with haze include the National Park Service, the U.S. Forest Service, the Western Regional Air Partnership, and the Western States Air Resources Council.

PM_{10} is respirable, with fine and ultrafine particles reaching the alveoli deep in the lungs, and larger particles depositing principally in the nose and throat area. PM_{10} deposition in the lungs results in irritation that triggers a range of inflammation responses, such as mucus secretion and bronchoconstriction, and exacerbates pulmonary dysfunctions, such as asthma, emphysema, and chronic bronchitis. Sufficiently small particles may penetrate into the bloodstream and impact functions such as blood coagulation, cardiac autonomic control, and mobilization of inflammatory cells from the bone marrow. Individuals susceptible to higher health risks from exposure to PM_{10} airborne pollution include children, the elderly, smokers, and people of all ages with low pulmonary/ cardiovascular function. For these individuals, adverse health effects of PM_{10} pollution include coughing, wheezing, shortness of breath, phlegm, bronchitis, and aggravation of lung or heart disease, leading for example to increased risks of hospitalization and mortality from asthma attacks and heart attacks.

3.2.3 Carbon Monoxide (CO)

CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the Project location, automobile exhaust accounts for most CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

3.2.4 Sulfur Dioxide (SO_2)

SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

3.2.5 Lead

Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline, the manufacturing of batteries, paint, ink, ceramics, and ammunition and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance including intelligence quotient performance, psychomotor performance, reaction time, and growth.

3.3. Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Assembly Bill (AB) 1807[3] sets forth a procedure for the identification and control of TAC in California defines a TAC as an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. Almost 200 compounds have been designated as TACs in California. The ten TACs posing the greatest known health risk in California, based primarily on ambient air quality data, are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, formaldehyde, methylene chloride, para-dichlorobenzene, perchloroethylene, and diesel particulate matter (DPM).

TACs do not have ambient air quality standards. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure.

The top three contributors of the potential cancer risk come primarily from motor vehicles - DPM, 1,3 butadiene, and benzene. Cleaner motor vehicles and fuels are reducing the risks from these priority toxic air pollutants. The remaining toxic air pollutants, such as hexavalent chromium and perchloroethylene, while not appearing to contribute as much to the overall risks, can present high risks to people living close to a source. CARB has control measures that are either already on the books, in development, or under evaluation for most of the remaining top ten, where actions are suitable through our motor vehicle, consumer products, or industrial source programs. Of these top ten, carbon tetrachloride is unique in that most of the health risk from this toxic air pollutant is not attributable to specific sources, but rather to background concentrations.

3.4. Sensitive Receptors

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These people include children, the elderly, and persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather are defined as sensitive receptors by the SDAPCD.

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[3] Enacted in September 1983. Health and Safety Code section 39650 et seq., Food and Agriculture Code Section 14021 et seq.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as most of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

To the north and east of the Project are residential districts and to the south and west of the Project are open spaces. Two educational facilities are within a mile of the Project site. The Chet F. Harritt Elementary School is located at 8120 Arlette Street, which is approximately 0.4 miles west-northwest of the Project and the Prospect Avenue Elementary School is located at 9303 Prospect Avenue, which is approximately 0.8 miles east of the Project.

3.5. Greenhouse Gases

Constituent gases that trap heat in the Earth's atmosphere are called greenhouse gases (GHGs), analogous to the way a greenhouse retains heat. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which would otherwise have escaped into space. Prominent GHGs contributing to this process include CO_2, methane (CH_4), nitrous oxide (N_2O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Without the natural heat-trapping effect of GHG, the earth's surface would be about 34 °F cooler[4]. This is a natural phenomenon, known as the "Greenhouse Effect," and is responsible for maintaining a habitable climate. However, anthropogenic emissions of these GHGs in excess of natural ambient concentrations are responsible for the enhancement of the "Greenhouse Effect" and have led to a trend of unnatural warming of the Earth's natural climate known as global warming or climate change, or more accurately Global Climate Disruption. Emissions of these gases that induce global climate disruption are attributable to human activities associated with industrial/manufacturing/ commercial, utilities, transportation, residential, and agricultural sectors.

The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. Individual GHG compounds have varying GWP and atmospheric lifetimes. The reference gas for the GWP is CO_2; CO_2 has a GWP of one. The calculation of the CO_2 equivalent (CO_2e) is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. CH_4's warming potential of 25 indicates that CH_4 has a 25 times greater warming affect than CO_2 on a molecular basis. The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that period on a molecular basis. The period usually used for GWPs is 100 years. GWPs for the three GHGs produced by the Project are presented in **Table 2**. A CO_2e is the mass emissions of an individual GHG multiplied by its GWP. GHGs are often presented in units called tonnes (t) (i.e. metric tons) of CO_2e (tCO_2e).

3.5.1 Carbon Dioxide (CO_2)

CO_2 is a colorless, odorless gas consisting of molecules made up of two oxygen atoms and one carbon atom. CO_2 is produced when an organic carbon compound (such as wood) or fossilized organic matter, (such as coal, oil, or

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[4] *Climate Action Team Report to Governor Schwarzenegger and the California Legislature.* California Environmental Protection Agency, Climate Action Team. March 2006.

natural gas) is burned in the presence of oxygen. CO_2 is removed from the atmosphere by CO_2 "sinks", such as absorption by seawater and photosynthesis by ocean-dwelling plankton and land plants, including forests and grasslands. However, seawater is also a source of CO_2 to the atmosphere, along with land plants, animals, and soils, when CO_2 is released during respiration. Whereas the natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean, humankind has altered the natural carbon cycle by the increased burning of coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s, each of these activities has increased in scale and distribution. Prior to the industrial revolution, global concentrations CO_2 were stable at a range of 275 to 285 parts per million (ppm)[5]. The Bulletin of the American Meteorological Society[6] indicates that global average concentration of CO_2 was 405.0 ppm in 2017, the highest in the modern atmospheric measurement record and in ice core records dating back as far as 800,000 years. In addition, the monthly mean of CO_2 globally was measured at 414.38 ppm in July 2020[7], up from 411.74 ppm the previous year.

Table 2 – Global Warming Potentials[8]

Pollutant	GWP for 100-year time horizon	
	Second assessment report (SAR)[9]	4th assessment report (AR4) [10]
Carbon dioxide (CO_2)	1	1
Methane (CH_4)	21	25
Nitrous oxide (N_2O)	310	298

Note: Current protocol is to use the AR4 values, however, the SAR values are also provided since they are the values used by many inventories and public documents.

3.5.2 Methane (CH_4)

CH_4 is a colorless, odorless non-toxic gas consisting of molecules made up of four hydrogen atoms and one carbon atom. CH_4 is combustible, and it is the main constituent of natural gas—a fossil fuel. CH_4 is also released when organic matter decomposes in low oxygen environments. Natural sources include wetlands, swamps and marshes,

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5 *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007*. Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

6 *State of the Climate in 2017.* Special Supplement to the Bulletin of the American Meteorological Society. Blunden, J., D.S. Arndt, and Hartfield, G. Eds., Vol. 99, No. 8, S1–S275. August 2018.

7 *Trends in Atmospheric Carbon Dioxide*. National Oceanic & Atmospheric Administration/Earth Systems Research Laboratory. (www.esrl.noaa.gov/gmd/ccgg/trends/) Accessed August 2020.

8 Global Warming Potentials. Greenhouse Gas Protocol. World Resources Institute and World Business Council on Sustainable Development. http://www.ghgprotocol.org/files/ghgp/tools/Global-Warming-Potential-Values.pdf. Accessed May 2015.

9 Second Assessment Report. Climate Change 1995: WG I - The Science of Climate Change. Intergovernmental Panel on Climate Change. 1996

10 Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. 2007

termites, and oceans. Human sources include the mining of fossil fuels and transportation and use of natural gas, digestive processes in ruminant animals such as cattle, rice paddies, and the buried waste in landfills. Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH_4.

3.5.3 Nitrous Oxide (N_2O)

N_2O is a colorless, non-flammable gas with a sweetish odor, commonly known as "laughing gas", and sometimes used as an anesthetic. N_2O is naturally produced in the oceans and in rainforests. Man-made sources of N_2O include the use of fertilizers in agriculture, nylon and nitric acid production, cars with catalytic converters, and the burning of organic matter. Concentrations of N_2O also began to rise at the beginning of the industrial revolution.

3.5.4 Chlorofluorocarbon (CFC)

CFCs are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically un-reactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Because of the discovery that they can destroy stratospheric ozone, an ongoing global effort to halt their production was undertaken and has been extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

3.5.5 Hydrofluorocarbon (HFC)

HFCs are synthesized chemicals that are used as a substitute for CFCs. Out of all the GHGs, HFCs are one of three groups with the highest GWP. HFCs are synthesized for applications such as automobile air conditioners and refrigerants.

3.5.6 Perfluorocarbon (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface can destroy the compounds. Because of this, PFCs have exceptionally long lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

3.5.7 Sulfur Hexafluoride (SF_6)

SF_6 is an extremely potent GHG and very persistent, with an atmospheric lifetime of more than a thousand years. Thus, a relatively small amount of SF_6 can have a significant long-term impact on global climate change. SF_6 is human-made, and the primary user of SF_6 is the electric power industry. Because of its inertness and dielectric properties, it is the industry's preferred gas for electrical insulation, current interruption, and arc quenching (to prevent fires) in the transmission and distribution of electricity. SF_6 is used extensively in high voltage circuit breakers and switchgear, and in the magnesium metal casting industry.

3.6. Legislative Framework

This section contains a discussion of the federal, State, and local air quality regulations, plans, and policies. Federal, State, and local authorities have adopted rules and regulations that govern the emissions of air pollutants from any facility. The local and federal authorities each have specific criteria for the evaluation of a source and its emissions and the authority to issue permit conditions and specify recordkeeping and reporting requirements that must be met

in order to operate a source of air pollutants. This section focuses on current air quality regulations and their impact on the Project.

3.6.1 Federal Regulations and Standards

The FCAA was enacted in 1970 and last amended in 1990 (42 USC 7401, et seq.) with the purpose of controlling air pollution and providing a framework for national, state, and local air pollution control efforts. Basic components of the FCAA and its amendments include NAAQS for major air pollutants, hazardous air pollutants standards, SIP requirements, motor vehicle emissions standards, and enforcement provisions. The FCAA was enacted for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity.

3.6.2 State Regulations and Standards

CARB is responsible for responding to the FCAA, regulating emissions from motor vehicles and consumer products, and implementing the CCAA. The CCAA outlines a program to attain the CAAQSs for ozone, sulfur dioxide, and CO by the earliest practical date. Since CAAQSs are more stringent than NAAQSs in most cases, attainment of the CAAQS will require more emissions reductions than what would be required to show attainment of the NAAQS. The CCAA requires attainment of CAAQS by the earliest practicable date. The state standards are generally more stringent than the corresponding federal standards. Attainment plans are required for air basins in violation of the State ozone, PM_{10}, CO, SO_2, or NO_2 standards. Responsibility for achieving State standards is placed on CARB and local air pollution control districts. District plans for nonattainment areas must be designed to achieve a 5% annual reduction in emissions. Preparation of and adherence to attainment plans are the responsibility of the local air pollution control districts or air quality management districts.

3.6.3 Local Regulations and Standards

The SDAPCD also has the authority to adopt and enforce regulations dealing with controls for specific types of sources, emissions of hazardous air pollutants, and New Source Review. The SDAPCD Rules and Regulations are part of the SIP and are separately enforceable by the EPA. The following SDAPCD rules potentially apply to the proposed project:

- **Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or tend to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.
- **Rule 55: Fugitive Dust Control.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.
- **Rule 67.0.1: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce volatile organic compounds[11] (VOC) emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- **Rule 67.7: Cutback and Emulsified Asphalts.** Requires manufacturers, distributors, and end users of cutback

[11] Emissions of organic gases are typically reported only as aggregate organics, either as VOC or as ROG. These terms are meant to reflect what specific compounds have been included or excluded from the aggregate estimate. Although EPA defines VOC to exclude both methane and ethane, and CARB defines ROG to exclude only methane, in practice it is assumed that VOC and ROG are essentially synonymous.

and emulsified asphalt materials for the paving, construction, or maintenance of parking lots, driveways, streets, and highways to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC evaporation content.

3.7. Attainment Status

EPA has identified nonattainment and attainment areas for each NAAQS. Under amendments to the FCAA, EPA has designated air basins or portions thereof as attainment, nonattainment, or unclassifiable, based on whether the national standards have been achieved. The State designates air basins or portions thereof for all CAAQS. The State designation criteria specify four categories: nonattainment, nonattainment-transitional, attainment, and unclassified.

In addition, the FCAA uses a classification system to design clean-up requirements appropriate for the severity of the pollution and set realistic deadlines for reaching clean-up goals. If an air basin is not in federal attainment for a pollutant, the Basin is classified as a marginal, moderate, serious, severe, or extreme nonattainment area, based on the estimated time it would take to reach attainment. Nonattainment areas must take steps towards attainment by a specific timeline. **Air Quality** Management Plans

3.7.1 Regional Air Quality Strategy (RAQS)

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego County Regional Air Quality Strategy (RAQS) was initially adopted in 1991 and is updated on a triennial basis, most recently in 2016 (2016 RAQS). The 2016 RAQS outlines the SDAPCD's plans and control measures designed to attain the State air quality standards for ozone. The SDAPCD has also developed the air basin's input to the SIP, which is required under the FCAA for areas that are out of attainment of air quality standards.

Table 3 shows the federal and State attainment designations for the Basin.

3.7.2 SDAB Attainment Designations

The portion of the SDAB where the Project is located is a marginal nonattainment area for the 2008 8-hour NAAQS for ozone. The SDAB is attainment/maintenance for CO; attainment for SO_2; unclassifiable for PM_{10}; and unclassifiable/attainment for all other criteria pollutants under the NAAQS.

The SDAB is currently designated nonattainment for ozone and particulate matter, PM_{10} and $PM_{2.5}$, under the CAAQS. It is designated attainment for the CAAQS for CO, NO_2, SO_2, lead, and sulfates (see **Air Quality** Management Plans

3.7.3 Regional Air Quality Strategy (RAQS)

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Table 3).

3.8. Air Quality Management Plans

3.8.1 Regional Air Quality Strategy (RAQS)

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Table 3 – Designations/Classifications for the SDAB[13] [14]

Pollutant	State Designation	Federal Designation (Classification)
Ozone	Nonattainment	Nonattainment (Moderate)*
Respirable PM (PM_{10})	Nonattainment	Unclassifiable
Fine PM ($PM_{2.5}$)	Nonattainment	Attainment
Carbon Monoxide (CO)	Attainment	Attainment (Maintenance)
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	**No Federal Standard**
Hydrogen Sulfide	Unclassified	
Visibility reducing Particles	Unclassified	

- *San Diego County was initially designated a Marginal nonattainment area for the 2008 eight-hour ozone NAAQS, effective July 20, 2012. As marginal areas were required to attain the 2008 eight-hour ozone NAAQS by July 20, 2015 and the region did not meet this attainment deadline, on June 3, 2016, the EPA reclassified San Diego County as a Moderate nonattainment area[15].*

The 2016 RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source

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12 *2016 Revision of the Regional Air Quality Strategy for San Diego County*. San Diego Air Pollution Control District. December 2016

13 2018 Amendments to Area Designations for State Ambient Air Quality Standards, Initial Statement of Reasons for Rulemaking, Appendix C: Maps and Tables of Area Designations for State and National Ambient Air Quality Standards. California Air Resources Board. December 31, 2018.

14 Nonattainment Areas for Criteria Pollutants (Green Book). United States Environmental Protection Agency. https://www.epa.gov/green-book. Accessed September 2019.

15 *2008 Eight-Hour Ozone Attainment Plan for San Diego County.* San Diego County Air Pollution Control District. December 2016.

emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of the County's General Plan. Therefore, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the 2016 RAQS. If a project would propose development which is less dense than anticipated within the general plan, the project would likewise be consistent with the 2016 RAQS. If a project proposes development that is greater than that anticipated in the General Plan and SANDAG's growth projections, the project might conflict with the 2016 RAQS and SIP and might have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for ozone.

3.8.2 Eight-Hour Ozone Attainment Plan

The Eight-Hour Ozone Attainment Plan (2016 Ozone Plan)[16] for San Diego County indicates that local controls and state programs would allow the region to reach attainment of the federal 8-hour ozone standard by the conclusion of the 2017 ozone season. SDAPCD relies on the 2016 Ozone Plan to demonstrate how the region will comply with the federal ozone standard. The 2016 Ozone Plan details how the region will manage and reduce ozone precursors (NOx and VOC by identifying measures and regulations intended to reduce these contaminants. The control measures identified in the 2016 Ozone Plan generally focus on stationary sources; however, the emissions inventories and projections in the Plan address all potential sources, including those under the authority of CARB, the EPA, and other federal agencies, specifically addressing conformity issues related to federal planned military growth and planned growth of the San Diego International Airport. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS.

3.9. Climate Change

3.9.1 Federal Climate Change Legislation

The federal government is taking several common-sense steps to address the challenge of climate change. EPA collects several types of GHG emissions data. This data helps policy makers, businesses, and EPA track GHG emissions trends and identify opportunities for reducing emissions and increasing efficiency. EPA has been collecting a national inventory of GHG emissions since 1990 and in 2009 established mandatory reporting of GHG emissions from large GHG emissions sources.

EPA is also getting GHG reductions through partnerships and initiatives; evaluating policy options, costs, and benefits; advancing the science; partnering internationally and with states, localities, and tribes; and helping communities adapt. Below are a list of laws and programs that have been implemented by the federal government.

3.9.1.1 Climate Action Plan

In June 2013, President Obama unveiled his Climate Action Plan. The plan was a national blueprint to slow the

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16 *2008 Eight-Hour Ozone Attainment Plan for San Diego County.* San Diego County Air Pollution Control District. December 2016.

effects of climate change and focuses on both CO_2 and short-lived climate pollutants, such as CH_4 and HFCs. Whereas, components of the plan are still active, the current administration is "committed to eliminating harmful and unnecessary policies such as the Climate Action Plan"[17].

3.9.1.2 Corporate Average Fuel Economy Standards (CAFE)

First enacted by Congress in 1975, the purpose of CAFE is to reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Transportation Safety Administration (NHTSA) has recently set standards to increase CAFE levels rapidly over the next several years, which will improve our nation's energy security and save consumers money at the pump. This site contains an immense amount of information about the CAFE program including a CAFE overview, rulemaking actions, fleet characteristics data, compliance activities, summaries of manufacturers' fuel economy performances since 1978, and related studies.

3.9.1.3 Energy Independence and Security Act

On December 19, 2007, the Energy Independence and Security Act of 2007[18] (EISA) was signed into law. Among other key measures, EISA will do the following, which would aid in the reduction of national GHG emissions, both mobile and non-mobile:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.
- Require approximately 25 percent greater efficiency for light bulbs, by phasing out the incandescent light bulbs between 2012 and 2014; require approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020.
- While superseded by NHTSA and EPA actions described above, EISA also set mpg targets for cars and light trucks and directed the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs".

3.9.2 State Climate Change Legislation

3.9.2.1 Executive Order S 3-05

On June 1, 2005, the Governor issued Executive Order S 3-05 which set the following GHG emission reduction targets:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.

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17 *An America First Energy Plan. White House Issues*. White House. Accessed March 26, 2017. URL: https://www.whitehouse.gov/america-first-energy.

18 *Energy Independence and Security Act*. Public Law 110-140. Signed on December 19, 2007.

- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

To meet these targets, the Climate Action Team prepared a report to the Governor in 2006 that contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.

3.9.2.2 Assembly Bill 32 (AB 32)

In 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 focuses on reducing GHG emissions in California. GHGs, as defined under AB 32, include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. CARB is the state agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming to reduce emissions of GHGs. AB 32 also requires that by January 1, 2008, the CARB must determine what the statewide GHG emissions level was in 1990, and it must approve a statewide GHG emissions limit so it may be applied to the 2020 benchmark. CARB approved a 1990 GHG emissions level of 427 million tonnes of carbon dioxide equivalents ($MtCO_2e$), on December 6, 2007 in its Staff Report. Therefore, in 2020, emissions in California are required to be at or below 427 $MtCO_2e$.

Under the "business as usual or (BAU)" scenario established in 2008, Statewide emissions were increasing at a rate of approximately 1 percent per year as noted below. It was estimated that the 2020 estimated BAU of 596 $MtCO_2e$ would have required a 28 percent reduction to reach the 1990 level of 427 $MtCO_2e$.

3.9.2.3 Climate Change Scoping Plan

The Scoping Plan[19] released by CARB in 2008outlined the state's strategy to achieve the AB-32 goals. This Scoping Plan, developed by CARB in coordination with the Climate Action Team (CAT), proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health. It was adopted by CARB at its meeting in December 2008. According to the Scoping Plan, the 2020 target of 427 $MtCO_2e$ requires the reduction of 169 $MtCO_2e$, or approximately 28.3 percent, from the State's projected 2020 BAU emissions level of 596 $MtCO_2e$.

However, in August 2011, the Scoping Plan was re-approved by the Board and includes the Final Supplement to the Scoping Plan Functional Equivalent Document[20]. This document includes expanded analysis of project alternatives as well as updates the 2020 emission projections considering the current economic forecasts. Considering the updated 2020 BAU estimate of 507 $MtCO_2e$, only a 16 percent reduction below the estimated new BAU levels would be necessary to return to 1990 levels by 2020.

Again, in May 2014, CARB developed; in collaboration with the CAT, the First Update to California's Climate Change Scoping Plan[21] (Update), which shows that California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB-32. In accordance with the United Nations Framework Convention on Climate Change (UNFCCC), CARB is beginning to transition to

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19 *Climate Change Scoping Plan: a framework for change*. California Air Resources Board. December 2008.

20 *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document.* California Air Resources Board. August 19, 2011.

21 *First Update to the Climate Change Scoping Plan, Building on the Framework*. California Air Resources Board. May 2014.

the use of the AR4's 100-year GWPs in its climate change programs. CARB has recalculated the 1990 GHG emissions level with the AR4 GWPs to be 431 $MtCO_2e$, therefore the 2020 GHG emissions limit established in response to AB-32 is now slightly higher than the 427 $MtCO_2e$ in the initial Scoping Plan.

The 2017 Climate Change Scoping Plan (2017 Scoping Plan)[22] builds upon the former Scoping Plans and Updates by outlining priorities and recommendations for the State to achieve its long-term climate objectives. The 2017 Scoping Plan establishes a proposed framework of action for California to meet the climate target of a 40 percent reduction in GHGs by 2030, compared to 1990 levels. The major elements of the framework proposed are enhancement of the Renewables Portfolio Standard and the Low Carbon Fuel Standard; a Mobile Source Strategy, Sustainable Freight Action Plan, Short-Lived Climate Pollutant Reduction Strategy, Sustainable Communities Strategies, and a Post-2020 Cap-and-Trade Program; a 20 percent reduction in GHG emissions from the refinery sector and an Integrated Natural and Working Lands Action Plan.

3.9.2.4 Senate Bill 375 (SB 375)

SB 375 passed the Senate on August 30, 2008 and was signed by the Governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions and contributes over 40 percent of the GHG emissions in California, with automobiles and light trucks alone contributing almost 30 percent. SB 375 indicates that GHGs from automobiles and light trucks can be reduced by new vehicle technology. However, significant reductions from changed land use patterns and improved transportation also are necessary. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

3.9.2.5 Title 24

Although not originally intended to reduce GHGs, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. The 2008 standards became effective January 1, 2010. The requirement for when the 2008 standards must be followed is dependent on when the application for the building permit is submitted. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 standards have been published and will become effective July 1, 2017.

3.9.2.6 California Green Building Standards

Part 11 of Title 24 is specifically addressed as the California Green Building Standards Code (CalGreen Code). The 2016 CalGreen Code also became effective January 1, 2017. The specific purpose of the CalGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings with building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable

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22 *The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target.* California Air Resources Board. January 20, 2017. URL: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf

construction practices in the categories of planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

3.9.3 City of Santee

The Santee General Plan (GP)[23] was adopted in 2003, therefore did not include any specific goals and policies aimed at reducing GHG emissions. In 2019, the City of Santee adopted a Sustainable Santee Plan (SSP)[24]. The SSP identified regional and local GHG emissions reduction strategies and measures to help the City achieve its 2020 and 2035 GHG reduction targets. In addition, the SSP includes a GHG reduction strategy framework that includes reductions and measures. These Measures are specific, locally based programs and actions that the City will carry out to achieve its climate action goals and strategies. The SSP contains 8 existing regional GHG reduction measures and 14 GHG community-based reduction measures, which includes measures to increase energy efficiency in existing and new residential and commercial properties; decrease energy demand through reducing urban heat island effect; reducing vehicle miles traveled; increasing use of electric vehicles; improving traffic flow; reducing solid waste generation; and increasing clean energy use.

3.10. GHG Emission Levels

3.10.1.1 Global and State

Per the World Resources Institute[25] (WRI) in 2014, total worldwide GHG emissions were estimated to be 44,204 $MtCO_2e$ and GHG emissions per capita worldwide was 6.13 tCO_2e. These emissions exclude GHG emissions associated with the land use, land-use change, and forestry sector, and bunker fuels. The WRI reports that in 2014, total GHG emissions in the U.S. were 6,371 $MtCO_2e$, with average GHG emissions per capita of 20.00 tCO_2e and total GHG emissions in California were 454.5 $MtCO_2e$ in 2014, with average GHG emissions per capita of 11.75 tCO_2e.

California has a larger percentage of its total GHG emissions coming from the transportation sector (56%) than the U.S. emissions (31%) and a smaller percentage of its total GHG emissions from the electricity generation sector, i.e. California have 13 percent, but the U.S. has 43 percent.

3.10.1.2 City of Santee

In 2019 the City presented an inventory conducted in 2013 as a part of the SSP[26] of GHG emissions for the community-wide Santee. The baseline emissions year was 2005. Annual GHG community-wide emissions by sectors are presented in **Table 4.**

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23 *General Plan 2000-2020.* City of Santee. Adopted by City Council August 27, 2003.

24 *Sustainable Santee Plan – The City's Roadmap to Greenhouse Gas Reductions.* City of Santee. December 2019.

25 CAIT Climate Data Explorer. Historical Emissions. World Resources Institute. http://cait2.wri.org/historical/. Accessed May 2019.

26 *Sustainable Santee Plan – The City's Roadmap to Greenhouse Gas Reductions*. City of Santee. December 2019.

Table 4 – 2013 Community-Wide Santee Greenhouse Gas Emissions Inventory [27]

Sector	GHG Emissions	
	Tonnes of CO_2e	Percentage of Total
On-Road Transportation	242,499	60.2%
Residential Energy	78,651	19.5%
Commercial Energy	48,025	11.9%
Solid Waste	11,151	2.8%
Water	6,578	1.6%
Off-Road Sources	14,699	3.7%
Wastewater	971	0.2%
TOTAL	**402,574**	**100%**

3.10.2 Potential Environmental Effects

Worldwide, global mean surface temperatures are likely to increase by 3 °F to 7 °F by the end of the 21st century[28]. However, a global temperature increase does not directly translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography. One region of the Earth may experience increased temperature, increased incidents of drought, and similar warming effects, whereas another region may experience a relative cooling. According to the International Panel on Climate Change's (IPCC's) Working Group II Report[29], climate change impacts to North America may include diminishing snowpack, increasing evaporation, exacerbated shoreline erosion, exacerbated inundation from sea level rising, increased risk and frequency of wildfire, increased risk of insect outbreaks, increased experiences of heat waves, and rearrangement of ecosystems, as species and ecosystem zones shift northward and to higher elevations.

3.10.3 California Implications

Even though climate change is a global problem and GHGs are global pollutants, the specific potential effects of climate change on California have been studied. The third assessment produced by the California Natural Resources Agency (CNRA)[30] explores local and statewide vulnerabilities to climate change, highlighting opportunities for taking concrete actions to reduce climate-change impacts. Projected changes for the remainder of this century in California include:

- **Temperatures** – By 2050, California is projected to warm by approximately 2.7 °F above 2000 averages, a threefold increase in the rate of warming over the last century and springtime warming — a critical influence on snowmelt — will be particularly pronounced.

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27 *ibid*

28 *Climate Change 2007: Impacts, Adaptation, and Vulnerability*. Website http://www.ipcc.ch/ipccreports/ar4-wg2.htm. Accessed March 2013.

29 ibid

30 *Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California.* California Natural Resources Agency. July 2012 / CEC-500-2012-007

- **Rainfall** – Even though model projections continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability, improved climate models shift towards drier conditions by the mid-to-late 21st century in Central, and most notably, Southern California.
- **Wildfire** - Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning, with human activities continuing to be the biggest factor in ignition risk. Models are showing that estimated that property damage from wildfire risk could be as much as 35 percent lower if smart growth policies were adopted and followed than if there is no change in growth policies and patterns.

The third assessment by CNRA not only defines projected vulnerabilities to climatic changes but analyzes potential impacts from adaptation measures used to minimize harm and take advantage of beneficial opportunities that may arise from climate change.

The report highlights important new insights and data, using probabilistic and detailed climate projections and refined topographic, demographic, and land use information. The findings include:

- The state's electricity system is more vulnerable than was previously understood.
- The Sacramento-San Joaquin Delta is sinking, putting levees at growing risk.
- Wind and waves, in addition to faster rising seas, will worsen coastal flooding.
- Animals and plants need connected "migration corridors" to allow them to move to habitats that are more suitable to avoid serious impacts.
- Native freshwater fish are particularly threatened by climate change.
- Minority and low-income communities face the greatest risks from climate change.

3.11. Baseline Conditions

3.11.1 Local Ambient Air Quality

Existing levels of ambient air concentrations and historical trends and projections in the project area are best documented by measurements made by the SDAPCD and CARB. The nearest monitoring station to the Project site is approximately 4.7 miles southeast of the Project site. The El Cajon-Lexington Elementary School station is in El Cajon on Redwood Avenue. The station monitors ozone, $PM_{2.5}$, PM_{10}, and NO_2. **Table 5** summarizes 2016 through 2018 published monitoring data from the CARB's Aerometric Data Analysis and Management System[31] (ADAM).

The monitoring data shows that the El Cajon station exceeded the State and federal 8-hour in all years except 2016, where the federal standard was not exceeded. No State 1-hour ozone; PM_{10}; $PM_{2.5}$; or NO_2 exceedances were detected.

[31] iADAM: Air Quality Data Statistics. California Air Resources Board. http://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed August 2020.

Table 5 – Ambient Air Quality Monitoring Summary[32]

Air Pollutant	Monitoring Year		
Ozone	**2016**	**2017**	**2018**
Max 1 Hour (ppm)	0.087	0.096	0.087
Days > CAAQS (0.09 ppm)	0	1	0
Max 8 Hour (ppm)	**0.074**	**0.081**	**0.079**
Days > NAAQS (0.075 ppm)	0	5	2
Days > CAAQS (0.070 ppm)	1	9	2
PM_{10}	**2016**	**2017**	**2018**
Max Daily California Measurement	44.1	49.4	44.7
Days > NAAQS (150 µg/m^3)	0	0	0
Days > CAAQS (50 µg/m^3)	0	0	0
$PM_{2.5}$	**2016**	**2017**	**2018**
Max Daily National Measurement	23.9	31.8	36.2
Days > NAAQS (35 µg/m^3)	0	0	1
NO_2	**2016**	**2017**	**2018**
Max Hourly (ppb)	48.0	45.0	45.0
Days > NAAQS (100 ppb)	0	0	0
Days > CAAQS (0.18 ppm)	0	0	0

Abbreviations:

> = exceed ***Bold** = exceedance* *N/A = not available*
ppm = parts per million *ppb = parts per billion* *µg/m^3 = micrograms per cubic meter*
CAAQS = California Ambient Air Quality Standard *NAAQS = National Ambient Air Quality Standard*

32 *ibid*

SECTION 4.0 – SIGNIFICANCE CRITERIA

4.1. Guidelines for the Determination of Air Quality Significance

4.1.1 CEQA Significance

The proposed Project would have a significant adverse effect on air quality if any of the following would occur because of a Project-related component. Would the Project:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State AAQS.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

4.1.2 SDAPCD Screening Level Threshold

In addition, as part of its air quality permitting process, the SDAPCD has established screening level thresholds (SLTs) in Rule 20.2 requiring the preparation of an Air Quality Impact Assessment (AQIA) for permitted stationary sources. The SDAPCD sets forth quantitative emission thresholds below which a stationary source would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in **Table 6** are exceeded. The pounds per day standards apply to the proposed project.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality.

Table 6 – Screening Level Threshold for Criteria Pollutants[33]

Pollutant	Emissions (ppd)	
	Construction	Operations
Reactive Organic Gases (ROG)	137	137
Nitrogen Oxide (NO_X)	250	250
Carbon Monoxide (CO)	550	550
Respirable Particulate Matter (PM_{10})	100	100
Fine Particulate Matter ($PM_{2.5}$)	55	55

The thresholds listed in **Table 6** represent SLTs that can be used to evaluate whether project-related emissions could cause a significant impact on air quality. Emissions below the screening-level thresholds would not cause a

[33] Rule 20.2 - New Source Review, Non-Major Stationary Sources. San Diego Air Pollution Control District. Revision Adopted November 4, 1998.

significant impact. If emissions exceed these thresholds, modeling would be required to demonstrate that the proposed project's total air quality impacts result in ground-level concentrations that are below the CAAQS and NAAQS, including appropriate background levels. For nonattainment pollutants, if emissions exceed the thresholds shown in **Table 6**, the proposed project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality.

Although the County proposes a significance threshold for lead, emissions of this pollutant are not calculated by CalEEMod. Emissions of lead have significantly decreased due to the near elimination of it as an anti-knock gasoline additive and lead emissions from gasoline engines are no longer a principal pollutant of concern. There are no other known emission sources of lead associated with the proposed Project.

4.2. Guidelines for the Determination of Climate Change Significance

The proposed Project would have a significant adverse effect on climate change because of GHG emissions if any of the following would occur because of a Project-related component. Would the Project:

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

4.2.1 California Air Pollution Control Officers Association Screening Thresholds

In lieu of specific quantitative GHG thresholds statewide, in 2008 the California Air Pollution Control Officers Association (CAPCOA) offered a recommendation of a unit-based screening threshold that was based on market capture of various land use densities and project types[34]. This White Paper proposed that projects that would meet or fall below the screening threshold of 900 tCO_2e per year of GHG could be expected to result a level that the climate change impacts would be considered less than significant.

4.2.2 Local Significance Thresholds

Neither the SDAPCD nor the City of Santee have adopted emission-based quantitative significance threshold for GHG. However, since the proper context for addressing GHG emissions is with an assessment of cumulative impacts, the City's SSP[35] established a CEQA Project Consistency Checklist (Checklist) that is intended to be used for future project specific GHG emissions analyses. Projects that meet the requirements of the Checklist would be deemed consistent with the SSP and would be found to have a less that significant contribution to cumulative GHG.

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34 *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act.* California Air Pollution Control Officers Association. January 2008. Available at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf.

35 *ibid*

SECTION 5.0 – IMPACT ANALYSES

5.1. Methodology and Assumptions

Information and analysis have been compiled based on an understanding of the existing ambient air quality of the SDAB and review of existing technical data, aerial maps, and applicable laws, regulations, and guidelines. The California Emissions Estimator Model[36] (CalEEMod®) Version 2013.3.2 land use and air emissions model were utilized to estimate daily criteria emissions and annual GHG emissions from construction and operation of the project. Construction of the Project would result in temporary emissions of ROG, CO, NO_X, SO_X, PM_{10}, $PM_{2.5}$, and GHGs. Emissions from construction activities would result from fuel combustion and exhaust from construction equipment and vehicle traffic (i.e., worker commute and delivery truck trips), and grading and site work. Long-term operational emissions will come from mobile sources and area sources, such as landscaping and architectural coatings. For GHG emissions, CalEEMod also estimates indirect emissions from energy use, water supply, wastewater, and solid waste. Criteria pollutant emissions were estimated in pounds per day (ppd) and GHG emissions in tonnes per year. A detailed summary of the assumptions and model data used to estimate the Project's emissions are provided in Appendix A.

Other air quality impacts (i.e., local emissions of CO, odors, and construction- and operation-related TACs) were assessed in accordance with methodologies recommended by CARB and SDAPCD.

5.2. IMPACT ANALYSES

IMPACT AQ-1: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The RAQS establishes what could be thought of as an "emissions budget" for the SDAB. This budget considers existing conditions, planned growth based on General Plans for cities within the SANDAG region, and air quality control measures implemented by the SDAPCD.

The "emissions budget" accounts for current emissions associated with the proposed Project as well as previously approved projects consistent with current General Plan policies. Therefore, to determine whether the proposed Project is consistent with the RAQS requires a comparison of net emissions from the proposed development to the emissions associated with previously approved and accounted for plans (commonly known as the Consistency Criterion of the RAQS).

Since the Project's zoning will not be changed and the proposed site's currently planned use for residential it is included in the GP. The General plan was analyzed in the emissions budget; therefore, the Project is consistent with the EPA-approved ROG, NO_X, and CO budgets for future years and the Project would not conflict with or obstruct the implementation of the RAQS or applicable portions of the SIP.

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36 California Emissions Estimator Model (CalEEMod) Version 2013.3.2. California Air Pollution Control Officers Association

IMPACT AQ-2: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (AAQS)?

Construction

Construction of the Project would result in emissions of the criteria air pollutants ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$. Emissions from construction would result from fuel combustion and exhaust from construction equipment and vehicle traffic and fugitive dust from earth moving operations and roadways. Criteria pollutant emissions from off-road construction equipment use were estimated using the latest CalEEMod computer model.

Whereas, construction activity is planned in two phases, with the first phase consisting of the site preparation and grading necessary to produce the site building pads. The second phase will consist of building construction, paving, and architectural coating. CalEEMod defaults were used.

Table 7 presents ppd emissions for construction activities related to the Project. As **Table 7** shows, that the thresholds are not exceeded in either construction year. CalEEMod output is in Appendix A.

Table 7 – Construction Criteria Emissions

Year - Construction Phase	Criteria Emissions (ppd)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction in 2021	46.00	42.46	36.69	20.41	11.99
Construction in 2022	44.02	1.53	1.84	0.10	0.10
Taylor Street Maximum Daily	***46.0***	***42.5***	***36.7***	***20.4***	***12.0***
Significance Threshold	*137*	*250*	*550*	*100*	*55*
Exceed Thresholds?	*No*	*No*	*No*	*No*	*No*

Operational

CalEEMod was also used to estimate the predicted operational emissions of the Project. Operational emissions include emissions from mobile sources associated with the facility, natural gas usage, architectural coatings, consumer products, and landscaping equipment.

Emissions for each category are presented in **Table 8**. The thresholds of significance are also included in this table as well as information regarding whether annual operational emissions would exceed those thresholds. As shown in **Table 8,** operational emissions would be well below SDAPCD thresholds. Detailed emissions calculations are included in Appendix A.

Table 8 – Estimated Operational Criteria Emissions

Emission Category	Criteria Emissions (ppd)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Mobile	0.20	0.80	2.11	0.61	0.17
Energy	0.01	0.11	0.05	0.01	0.01
Area	0.82	0.25	1.26	0.03	0.03
Project Total	***1.0***	***1.2***	***3.4***	***0.7***	***0.2***
Significance Threshold	*137*	*250*	*550*	*100*	*55*
Exceed Thresholds?	*No*	*No*	*No*	*No*	*No*

Cumulative Impacts

In lieu of specific City guidelines, the County's Air Quality Guidelines[37] was used. The Guidelines state that even if direct air quality impacts from a proposed project are less than significant, the project may still have a cumulatively considerable impact on air quality if the emissions are in combination with other reasonably foreseeable future projects within proximity of the proposed action. Projects that would individually cause a significant direct air quality impact with respect to construction or operational PM_{10}, $PM_{2.5}$, NO_X, or VOC emissions would also be considered to have a cumulatively considerable net increase in emissions.

It has been shown that during construction and operational activities, no significance threshold was expected to be exceeded; therefore, the emissions of particulate matter and NO_X would not result in a significant cumulative health impact.

Additionally, the guidelines list special consideration of operational cumulatively considerable net increases due to the mobile nature of the emissions. The following guidelines for determining significance must be used for determining the cumulatively considerable net increases during the operational phase:

- A project that does not conform to the RAQS and/or has a significant direct impact on air quality with regard to operational emissions of PM_{10}, $PM_{2.5}$, NO_X, and/or VOCs would also have a significant cumulatively considerable net increase.
- Projects that cause road intersections to operate at or below a level of service E (analysis only required when the addition of peak-hour trips from the Proposed Project and the surrounding projects exceeds 2,000) and create a CO hotspot create a cumulatively considerable net increase of CO.

The Project is considered consistent with the current RAQS and area- and mobile-source emissions do not cause a significant impact during Project operations. Additionally, the Project does not create a CO hotspot.

IMPACT AQ-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are defined as land uses where sensitive population groups are likely to be located (e.g.,

[37] Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality. County of San Diego. Department of Planning and Land Use, Department of Public Works. March 19, 2007.

children, the elderly, the acutely ill, and the chronically ill). These land uses include residences, schools, childcare centers, retirement homes, convalescent homes, medical care facilities, and recreational facilities. Sensitive receptors that may be adversely affected by the Project include the surrounding residential land uses.

Since the Project site is adjacent to sensitive receptors, special attention is considered warranted to mitigate the potential for impact to these residences. Even though the construction management team is required to meet the SDAPCD Rule 55, Fugitive Dust Control requirements, which includes prohibition of dust leaving property line for more than 3 aggregated minutes per hour, special consideration should be observed during the grading activity nearest these residences. Therefore, the following mitigation is proposed:

MM-AQ-1 – The construction management team shall ensure that extra watering of disturbed exposed earth near the adjacent properties shall occur with the intent of minimizing dust emissions into the atmosphere beyond the property line.

Diesel Particulate Matter

During construction activities, diesel equipment will be operating and DPM is known to the State as a TAC. However, the risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined as 24 hours per day, 7 days per week, 365 days per year, for 70 years. The short-term nature of project construction would support that exposure to diesel exhaust emissions during construction would not be significant.

IMPACT AQ-4: Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The CEQA Guidelines indicate that a significant impact would occur if a project would create objectionable odors affecting a substantial number of people. While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SDAPCD. Because offensive odors rarely cause any physical harm and no requirements for their control are included in State or federal air quality regulations, the SDAPCD has no rules or standards related to odor emissions, other than its nuisance rule.

The proposed Project does not include elements that would generate objectionable odors, nor would they attract persons to an area where there would be a potential for exposure to objectionable odors. The impact would be less than significant.

IMPACT GHG-1: Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

The GHG emissions estimates for this analysis includes the following sources of annual direct and indirect emissions: (1) area sources (e.g., landscaping-related fuel combustion sources and natural gas fireplaces); (2) energy use associated with residential and non-residential buildings; (3) water and wastewater; (4) solid waste; (5) mobile sources (e.g., passenger vehicles and trucks); and (6) construction. The ongoing operational emissions consist of the first five categories, while the one-time emissions are associated with construction. The typical types of GHG emissions resulting from developments such as the Project are emissions of CO_2, CH_4, and N_2O.

One-time emissions are those construction emissions that are not reoccurring over the life of the Project. The major construction phase included in this analysis is grading and on-site earth balancing. Emissions are from off-road construction equipment and on-road vehicles like worker and vendor commuting and trucks for soil and material hauling.

Some emissions would occur every year after buildout. GHGs are emitted from buildings because of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions when associated with a building. GHGs are also emitted during the generation of the electricity from fossil fuels used by the project buildings, these emissions are indirect emissions. Indirect GHG emissions also result from the production of electricity used to convey, treat, and distribute water and wastewater. The amount of electricity required to convey, treat, and distribute water depends on the volume of water as well as the sources of the water. In addition, CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill using waste disposal rates by land use and overall composition.

The primary source of annual GHG emissions are associated with on-road mobile sources related to residents, workers, customers, and delivery vehicles visiting the land use types in the project. A summary of all GHG emissions from the proposed Project is presented in **Table 9.**

Table 9 – Proposed Project GHG Emissions

Category	CO_2e (t/year)
Direct – Mobile (Amortized Construction)	11.1
Direct – Mobile (Operational)	110.6
Direct – Area Source	11.3
Indirect – Purchased Electricity (Power)	39.2
Indirect – Purchased Natural Gas (Power)	23.0
Indirect – Purchased Electricity (Water)	7.2
Direct – Fugitive – Solid Waste	8.2
TOTAL	211

The estimated annual GHG emissions shown in **Table 9** are less than a CAPCOA recommended screening threshold of 900 tCO_2e per year and therefore, could potentially reach a level of significance. However, since the City has determined that the proper context for addressing GHG emissions is within an assessment of cumulative impacts, significance will be determined below in the discussion for **Impact 2**.

IMPACT GHG-2: Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

The City recognizes that GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to the significant cumulative impact of global climate change and significance determinations should be assessed using cumulative impacts. The City has reasoned that project specific GHG emissions analyses should be based on consistency with the recently adopted SSP. The SSP supplies a Checklist as a method to demonstrate consistency with the SSP. A completed Checklist for the

Project is included as Appendix B of this Study and is summarized below:

STEP 1: The first step of the Checklist allows the City to determine the project's consistency with the land use assumptions used in the Plan.

The property is zoned Low Density Residential and does not require a General Plan Amendment; therefore, the Project is consistent for land uses.

STEP 2: The second step of the SSP consistency review is to review and evaluate a project's consistency with the applicable measures of the SSP. Each checklist item is associated with a specific GHG reduction measure(s) in the SSP.

- **Measure 1.2** – For existing Residential Unit Permit for Major Modifications that is considered a Project under CEQA must implement energy efficiency retrofits recommended from City Energy Audit.
  Not applicable because the project does not have any existing residential units.
- **Measure 2.1** – New residential construction meets or exceeds California Green Building Standards Tier 2 Voluntary Measures**.**
  It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
- **Measure 3.2** – For existing commercial units of 10,000 sq. ft. or more seeking building permits for modifications representing 30% or more sq. ft, and considered a Project under CEQA must implement energy efficiency retrofits recommended by the City to meet California Green Building Standards Tier 1 Voluntary Measures and explain the retrofits implemented.
  Not applicable because the project does not have a commercial component.
- **Measure 4.1** – New commercial units meet or exceed California Green Building Standards Tier 2 Voluntary Measures.
  Not applicable because the project does not have a commercial component.
- **Measure 5.1** – Project utilizes tree planting for shade and energy efficiency such as tree planting in parking lots and streetscapes.
  Not applicable because the project does not have a commercial component.
- **Measure 5.2** – Project uses light reflecting surfaces such as enhanced cool roofs on commercial buildings.
  Not applicable because the project does not have a commercial component.
- **Measure 6.1** – Proposed project streets include sidewalks, crosswalks, and other infrastructure that promotes non-motorized transportation options.
  Not applicable because the project is such size as to render this measure unfeasible.

- **Measure 6.2** – Proposed project installs bike paths to improve bike transit.
  Not applicable because the project is such size as to render this measure unfeasible.
- **Measure 7.1** – Install electric vehicle chargers in all new residential and commercial developments. a. For new Single Family Residential, install complete 40 Amp electrical service and one e charger.
  It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
- **Measure 8.1** – Implement traffic flow improvement program.
  Not applicable because the project is such size as to render this measure unfeasible.
- **Measure 9.1** – Reduce waste at landfills.
  Not applicable because the project is such size as to render this measure unfeasible.
- **Measure 10.1** – Increase distributed energy generation within City of Santee by implementing the following applicable photovoltaic solar systems: a. Single family residential to install at least 2kW per unit of PV solar systems, unless the installation is infeasible due to poor solar resources established in a solar feasibility study prepared by a qualified solar consultant submitted with an application.
  It will be completed as an item in the project's conditions of approval and as a note on the grading plan.

OB-1
AIR ANALYSES

APPENDIX A

Greenhouse Gas Calculations

Tyler Street Project - Detail

San Diego County, Annual

CalEEMod.2016.3.1

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	14	Dwelling Unit	4.55	25,200.00	40

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2019
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Woodstoves - Assuming 100% natural gas fireplaces

Vehicle Trips - Trip lengths taken from SANDAG

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberGas	7.7	14
tblFireplaces	NumberNoFireplace	1.4	0
tblFireplaces	NumberWood	4.9	0
tblProjectCharacteristics	OperationalYear	2018	2019
tblSequestration	NumberOfNewTrees	0	14
tblVehicleTrips	HO_TL	7.5	5.5
tblVehicleTrips	HS_TL	7.3	5.3
tblVehicleTrips	HW_TL	10.8	7.9
tblWoodstoves	NumberCatalytic	0.7	0
tblWoodstoves	NumberNoncatalytic	0.7	0

2.0 Emissions Summary

2.1 Overall Construction

Year	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
	tons/yr										MT/yr					
2017													298.7339	0.0732	0	300.5639
2018													25.1529	6.37E-03	0	25.312
Maximum													**298.7339**	**0.0732**	**0**	**300.5639**

2.2 Overall Operational

Category	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
	tons/yr										MT/yr					
Area													11.1969	3.80E-04	2.00E-04	11.2666
Energy													60.928	2.00E-03	7.20E-04	61.1928
Mobile													120.8257	7.18E-03	0	121.0052
Waste													3.3291	0.1967	0	8.2476
Water													6.2589	0.03	7.50E-04	7.2319
Total													**202.5385**	**0.2363**	**1.67E-03**	**208.9441**

2.3 Vegetation

Category	CO2e
	MT
New Trees	9.912
Total	**9.912**

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	2/1/2017	2/7/2017	5	5	
2	Grading	Grading	2/8/2017	2/17/2017	5	8	
3	Building Construction	Building Construction	2/18/2017	1/5/2018	5	230	
4	Paving	Paving	1/6/2018	1/31/2018	5	18	
5	Architectural Coating	Architectural Coating	2/1/2018	2/26/2018	5	18	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	247	0.4
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	1	8	158	0.38
Grading	Graders	1	8	187	0.41
Grading	Rubber Tired Dozers	1	8	247	0.4
Grading	Tractors/Loaders/Backhoes	3	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
Building Construction	Forklifts	3	8	89	0.2
Building Construction	Generator Sets	1	8	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
Building Construction	Welders	1	8	46	0.45
Paving	Cement and Mortar Mixers	2	6	9	0.56
Paving	Pavers	1	8	130	0.42
Paving	Paving Equipment	2	6	132	0.36
Paving	Rollers	2	6	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37
Architectural Coating	Air Compressors	1	6	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	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Grading	6	15	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5	1	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Paving	8	20	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT

3.2 Site Preparation - 2017

Construction On-Site

Category	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
	tons/yr										MT/yr					
Fugitive Dust													0	0	0	0
Off-Road													8.8336	2.71E-03	0	8.9013
Total													**8.8336**	**2.71E-03**	**0**	**8.9013**

Construction Off-Site

Category	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
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0	0	0	0
Worker													0.3574	1.00E-05	0	0.3577
Total													**0.3574**	**1.00E-05**	**0**	**0.3577**

3.3 Grading - 2017

Construction On-Site

Category	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
	tons/yr										MT/yr					
Fugitive Dust													0	0	0	0
Off-Road													11.0238	3.38E-03	0	11.1082
Total													**11.0238**	**3.38E-03**	**0**	**11.1082**

Construction Off-Site

Category	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
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0	0	0	0
Worker													0.4765	2.00E-05	0	0.4769
Total													**0.4765**	**2.00E-05**	**0**	**0.4769**

3.4 Building Construction - 2017

Construction On-Site

Category	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
	tons/yr										MT/yr					
Off-Road													270.5544	0.0667	0	272.2209
Total													**270.5544**	**0.0667**	**0**	**272.2209**

Construction Off-Site

Category	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
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													3.0214	2.60E-04	0	3.0279
Worker													4.4669	1.70E-04	0	4.4711
Total													**7.4883**	**4.30E-04**	**0**	**7.499**

3.4 Building Construction - 2018

Construction On-Site

Category	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
	tons/yr										MT/yr					
Off-Road													5.9442	1.46E-03	0	5.9806
Total													**5.9442**	**1.46E-03**	**0**	**5.9806**

Construction Off-Site

Category	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
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0.0669	1.00E-05	0	0.0671
Worker													0.0965	0	0	0.0966
Total													**0.1634**	**1.00E-05**	**0**	**0.1636**

3.5 Paving - 2018

Construction On-Site

Category	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
	tons/yr										MT/yr					
Off-Road													15.2887	4.63E-03	0	15.4045
Paving													0	0	0	0
Total													**15.2887**	**4.63E-03**	**0**	**15.4045**

Construction Off-Site

Category	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
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0	0	0	0
Worker													1.3892	5.00E-05	0	1.3904
Total													**1.3892**	**5.00E-05**	**0**	**1.3904**

3.6 Architectural Coating - 2018

Construction On-Site

Category	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
	tons/yr										MT/yr					
Archit. Coating													0	0	0	0
Off-Road													2.2979	2.20E-04	0	2.3034
Total													**2.2979**	**2.20E-04**	**0**	**2.3034**

Construction Off-Site

Category	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
	tons/yr										MT/yr					
Hauling													0	0	0	0
Vendor													0	0	0	0
Worker													0.0695	0	0	0.0695
Total													**0.0695**	**0**	**0**	**0.0695**

4.0 Operational Detail - Mobile

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	133.28	138.74	120.68	276,192	276,192
Total	133.28	138.74	120.68	276,192	276,192

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Single Family Housing	7.90	5.30	5.50	41.60	18.80	39.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.581689	0.044135	0.186694	0.113515	0.018244	0.0056	0.015197	0.022573	0.001888	0.002088	0.006279	0.000742	0.001357

5.0 Energy Detail

5.2 Energy by Land Use - NaturalGas

Land Use	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
	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	398896													21.2866	4.10E-04	3.90E-04	21.4131
Total														**21.2866**	**4.10E-04**	**3.90E-04**	**21.4131**

5.3 Energy by Land Use - Electricity

Land Use	Electricity Use	Total CO2	CH4	N2O	CO2e
	kWh/yr	MT/yr			
Single Family Housing	121299	39.6414	1.60E-03	3.30E-04	39.7797
Total		**39.6414**	**1.60E-03**	**3.30E-04**	**39.7797**

6.0 Area Detail

6.2 Area by SubCategory

SubCategory	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
	tons/yr										MT/yr					
Architectural Coating													0	0	0	0
Consumer Products													0	0	0	0
Hearth													11.0271	2.10E-04	2.00E-04	11.0926
Landscaping													0.1698	1.70E-04	0	0.174
Total													**11.1969**	**3.80E-04**	**2.00E-04**	**11.2666**

7.0 Water Detail

7.2 Water by Land Use

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Single Family Housing	0.912156 / 0.575055	6.2589	0.03	7.50E-04	7.2319
Total		**6.2589**	**0.03**	**7.50E-04**	**7.2319**

8.0 Waste Detail

8.2 Waste by Land Use

Land Use	Waste Disposed	Total CO2	CH4	N2O	CO2e
	tons	MT/yr			
Single Family Housing	16.4	3.3291	0.1967	0	8.2476
Total		**3.3291**	**0.1967**	**0**	**8.2476**

11.0 Vegetation

11.2 Net New Trees

Species Class	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	14	9.912	0	0	9.912
Total		**9.912**	**0**	**0**	**9.912**

OB-1
AIR ANALYSES

APPENDIX B

Tyler Street SSAP Checklist

1. Project Information

Contact Information	
Project No./Name:	TM 2017-01 - Tyler Street Project
Address:	Extension of Tyler Street south and south of Mesa Heights Road
Applicant Name:	Performance Drywall & Insulation
Contact Information:	Mark Harris
Consultant: Joe O'Bannon, OB-1 Air Analyses, 760-637-2348	4204 Jutland Dr. Suite A2
	San Diego, CA 92117
Project Description Characteristics	
1. What is the size of the Project (acres)?	8 gross acres
2. Identify all Applicable Proposed Land uses:	
a. Residential Single Family (Indicate number of single family units)	14 single-family residential (SFR) lots
b. Residential Multifamily (Indicate number of multifamily units)	
c. Commercial (total square footage)	
d. Industrial (total square footage)	
e. Other (describe)	
3. Provide a brief description of the project proposed:	14 prepared lots that will be sold to other parties for SFRs to be built by their owners

2. Determining Land Use Consistency

Checklist Item

As the first step in determining the consistency with the Sustainable Santee Action Plan for the discretionary development projects, this section allows the City to determine the project's consistency with the land use assumptions used in the Plan.

	No	Yes
1. Is the proposed project consistent with the existing General Plan and land use zoning designations? OR		X
2. If the proposed project is not consistent with the existing land use plan and zoning designations, does the project include a land use plan and/or zoning designation amendment that is identified in the Sustainable Santee Action Plan Land Use Buffer (see Appendix A, Table 11)?		
3. If the proposed project is not consistent with the existing land use plan, zoning designations, or Land Use Buffer, does the project include a land use plan and/or zoning designation ammendment that will result in an equivalent or less GHG-intensive project when compared to the existing designations?		

Notes:
For questions 1, if the answer is **Yes**, proceed to the Sustainable Santee Action Plan Consistency Checklist. If the answer is **No**, procced to question 2.
For question 2, if the answer is **Yes**, proceed to the Sustainable Santee Action Plan Consistency Checklist. If the answer is **No**, proceed to question 3.
For question 3, if the answer is **Yes** provide estimated project emissions under both existing and proposed designation (s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation. If the answer of question 3 is **No** then, in accordance with the City's Significance Determination Thresholds, the project's GHG impact may be significant. The project must nonetheless incorporate each of the applicable measures identified in the Checklist to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091.

Sustainable Santee Action Plan (A Project Consistency Checklist

Greenhouse Gas Reduction Measure	Measure Applicability			Description
	Yes	No	N/A	
Emissions Measures Category: Energy Efficiency				
Land Use Sector Residential				
Goal 1. Increase Energy Efficiency in Existing Residential Units				
Measure 1.2. For existing Residential Unit Permit for Major Modifications (more than 30% of dwelling unit size, including bathroom and kitchen) that is considered a Project under CEQA must implement energy efficiency retrofits recommended from City Energy Audit and explain the energy efficiency retrofits implemented.			X	The project does not have any existing residential units.
Goal 2. Increase Energy Efficiency in the New Residential Units				
Measure 2.1. New residential construction meet or exceed California Green Building Standards Tier 2 Voluntary Measures, such as obtaining green building ratings including LEED, Build it Green, or Energy Star Certified building certifications in scoring development and explain the measures implemented.	X			It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
Land Use Sector Commercial				
Goal 3. Increase Energy Efficiency in Existing Commercial Units				
Measure 3.2. For existing commercial units of 10,000 sq. ft. or more seeking building permits for modifications representing 30% or more sq. ft, and considered a Project under CEQA must implement energy efficiency retrofits recommended by the City to meet California Green Building Standards Tier 1 Voluntary Measures and explain the retrofits implemented.			X	The project does not have a commercial component.
Goal 4. Increase Energy Efficiency in New Commercial Units				
Measure 4.1. New commercial units meet or exceed California Green Building Standards Tier 2 Voluntary Measures such as obtain green building ratings including: LEED, Build it Green, or Energy Star Certified buildings certifications in scoring development and explain the measures implemented.			X	The project does not have a commercial component.
Emissions Measures Category: Advanced Goals Measures				
Land Use Sector Commercial				
Goal 5. Decrease Energy Demand through Reducing Urban Heat Island Effect				
Measure 5.1. Project utilizes tree planting for shade and energy efficiency such as tree planting in parking lots and streetscapes.			X	The project does not have a commercial component.
Measure 5.2. Project uses light reflecting surfaces such as enhanced cool roofs on commercial buildings.			X	The project does not have a commercial component.
Emissions Measures Category: Transportation				
Land Use Sector Residential and Commercial				
Goal 6. Decrease GHG Emissions through a Reduction in VMT				
Measure 6.1. Proposed project streets include sidewalks, crosswalks, and other infrastructure that promotes non motorized transportation options.			X	Project is such size as to render this measure unfeasible
Measure 6.2. Proposed project installs bike paths to improve bike transit.			X	Project is such size as to render this measure unfeasible

Sustainable Santee Action Plan (A Project Consistency Checklist

Greenhouse Gas Reduction Measure	Measure Applicability			Description
	Yes	No	N/A	
Land Use Sector Residential and Commercial				
Goal 7: Increase Use of Electric Vehicles				
Measure 7.1. Install electric vehicle chargers in all new residential and commercial developments.				
a. For new Single Family Residential, install complete 40 Amp electrical service and one e charger.	X			It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
b. For new Multifamily Residential, install e chargers for 13 percent of total parking.			X	The project does not have a multifamily component.
c. For new Office Space, Regional Shopping Centers, and Movie Theaters, install e chargers for 5 percent of total parking spaces.			X	The project does not include any of these uses.
d. For new Industrial and other Land Uses employing 200 or more employees, install e charges for 5 percent of total parking spaces.			X	The project does not have an industrial component.
Land Use Sector Residential and Commercial				
Goal 8. Improve Traffic Flow				
Measure 8.1. Implement traffic flow improvement program.				
a. Install smart traffic signals at intersections warranting a traffic signal, OR			X	Project is such size as to render this measure unfeasible
b. Install roundabout.			X	Project is such size as to render this measure unfeasible
Emissions Measures Category: Solid Waste				
Land Use Sector Residential and Commercial				
Goal 9: Decrease GHG Emissions through Reducing Solid Waste Generation				
Measure 9.1. Reduce waste at landfills.			X	Project is such size as to render this measure unfeasible
Emissions Measures Category: Clean Energy				
Land Use Sector Residential and Commercial				
Goal 10. Decrease GHG Emissions through Increased Clean Energy Use				
Measure 10.1. Increase distributed energy generation within City of Santee by implementing the following applicable photovoltaic solar systems:				
a. Single family residential to install at least 2kW per unit of PV solar systems, unless the installation is infeasible due to poor solar resources established in a solar feasibility study prepared by a qualified solar consultant submitted with an application	X			It will be completed as an item in the project's conditions of approval and as a note on the grading plan.
b. Multifamily residential to install at least 1kW per unit of PV solar systems, unless the installation is infeasible due to poor solar resources established in a solar feasibility study prepared by a qualified solar consultant submitted with an applicant's formal project submittal to City.			X	The project does not have a multifamily component.
c. On commercial buildings, install at least 2 kW per square foot of building area (e.g., 2,000 sq. ft. = 3 kW) unless the installation is infeasible due to poor solar resources.			X	The project does not have a commercial component.