2.3 Air Quality and Greenhouse Gases

This section considers impacts to the existing ambient air quality and potential effects to air quality, as well as contribution to global greenhouse gas (GHG) emissions resulting from the implementation of the proposed project. Information and analysis in this section have been compiled based on an understanding of the existing ambient air quality of the San Diego Air Basin (SDAB) and review of existing technical data, applicable laws, regulations, and guidelines. Analysis pertaining to greenhouse gas emissions and the potential for the proposed project to conflict with the goals and strategies of Assembly Bill (AB) 32 is also discussed in this section.

2.3.1 Existing Conditions

Geographic Setting

The County of San Diego (County) is bounded by the Counties of Orange and Riverside to the north, the County of Imperial to the east, the United States–Mexico international border to the south, and the Pacific Ocean to the west (see Figure 1-1). The proposed project, of amendments to the Zoning Ordinance, would apply to properties located in the unincorporated portions of the County over which the County has land use jurisdiction. More specifically, the proposed project applies to properties that are zoned with an Animal Designator D–J, L–N, U, V, or X for a total of 344,665 acres, as depicted in Figure 1-2.

Climate and Meteorology

The County has a climate that is dominated by a semipermanent high-pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. The proposed project area is located within the SDAB. The regional climate of SDAB is primarily Mediterranean in character, consisting of dry, hot summers and cool, moderately wet winters. The local climate in eastern San Diego County, which is primarily desert, consists of dry, hot summers (temperatures reaching 120° Fahrenheit (F)) and milder winters (daytime temperature in the 80s). The SDAB is an area of high air pollution potential due to its climate. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. A Santa Ana occurs when a strong high pressure develops over the Nevada–Utah area and overcomes the prevailing westerly coastal winds, sending strong, steady, hot, dry northeasterly winds over the mountains and out to sea.

The SDAB experiences frequent temperature inversions. Under an inversion condition, temperature increases as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, an upper layer of warm air mass forms over the cool marine layer, preventing air

pollutants from dispersing upward. Additionally, hydrocarbons and nitrogen dioxide (NO_2) react under strong sunlight, creating smog. Light daytime winds, predominantly from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, high carbon monoxide (CO) levels are due to a nightly shallow inversion layer that forms between the cooled air at the ground and warmer air above. This can trap vehicle pollutants. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the basin are associated with heavy traffic. NO_2 levels are generally higher during fall and winter as well.

Under certain conditions, a change in air flow results from an offshore transport of air from the Los Angeles region to San Diego County. This often results in high ozone (O_3) concentrations at air pollutant monitoring stations in San Diego County.

Air Quality Characteristics

Air pollution is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation.

The California Air Resources Board (CARB), with assistance from the San Diego Air Pollution Control District (SDAPCD), compiles inventories and projections of emissions of the major pollutants and monitors air quality conditions. Air quality conditions are tracked for "criteria air pollutants" and "toxic air contaminants" (TACs). Criteria air pollutants refer to a group of pollutants for which CARB or the U.S. Environmental Protection Agency (EPA) has adopted health-based ambient air quality standards and region-wide pollution reduction plans. Seven air pollutants have been identified by the EPA as being of concern nationwide: O_3; NO_2; CO; particulate matter less than or equal to 10 microns (PM_{10}), also called respirable particulate matter or coarse particulate matter; fine particulate matter less than or equal to 2.5 microns in size ($PM_{2.5}$), also called fine particulate matter; sulfur dioxide (SO_2); and lead. These pollutants are collectively referred to as "criteria" pollutants.[1] The sources of these pollutants, their effects on human health and the region's welfare, and their final deposition in the atmosphere vary considerably.

Ozone. O_3 is a colorless gas that is formed in the atmosphere when volatile organic compounds (VOCs), sometimes referred to as reactive organic gases (ROGs), and NO_x react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of VOCs and NO_x, the precursors of O_3, are automobile exhaust and industrial sources.

[1] The following descriptions of health effects for each of the criteria air pollutants associated with project construction and operations are based on the EPA's "Six Common Air Pollutants" (EPA 2012a) and the CARB Glossary of Air Pollutant Terms (CARB 2012a) published information.

Meteorology and terrain play major roles in O_3 formation and ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Nitrogen Dioxide. Most NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_x and are major contributors to O_3 formation. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis and some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million by volume (ppm).

Carbon Monoxide. 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 the majority of 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.

Sulfur Dioxide. 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.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the

atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOC. Inhalable or coarse particulate matter, or PM_{10}, is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

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 phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout 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 particular 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.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources

such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced either on short-term (acute) or long-term (chronic) exposure to a given TAC.

The Greenhouse Gas Effect and Greenhouse Gases

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind, lasting for an extended period (decades or longer).

Gases that trap heat in the atmosphere are often called "greenhouse gases" (GHGs). The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted to the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely byproducts of fossil fuel combustion, whereas CH_4 results mostly from off-gassing associated with agricultural practices and landfills. Man-made GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3), which are associated with certain industrial products and processes (CAT 2006).

The greenhouse effect is a natural process that contributes to regulating the earth's temperature. Without it, the temperature of the Earth would be about 0°F (−18°C) instead of its present 57°F (14°C). Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect (NCDC 2009).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its "global warming potential" (GWP). GWP varies between GHGs; for example, the GWP of CH_4 is 21, and the GWP of N_2O is 310. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG gas emissions are typically measured in terms of pounds or tons of "CO_2 equivalent" (CO_2E).[2]

[2] The CO_2 equivalent for a gas is derived by multiplying the mass of the gas by the associated GWP, such that $MTCO_2E$ = (metric tons of a GHG) x (GWP of the GHG). For example, the GWP for CH_4 is 21. This means that emissions of 1 metric ton of methane are equivalent to emissions of 21 metric tons of CO_2.

Contributions to Greenhouse Gas Emissions

In 2010, the United States produced 6,822 million metric tons of CO_2E (MMT CO_2E) (EPA 2012b). The primary GHG emitted by human activities in the United States was CO_2, representing approximately 84% of total GHG emissions. The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 94% of the CO_2 emissions and 78% of overall GHG emissions.

According to the 2009 GHG inventory data compiled by CARB for the California Greenhouse Gas Inventory for 2000–2009, California emitted 457 MMT CO_2E of GHGs, including emissions resulting from out-of-state electrical generation (CARB 2011). The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions in 2009 are presented in Table 2.3-1, GHG Sources in California.

County of San Diego Climate Action Plan

The County of San Diego Climate Action Plan (CAP), adopted in June 2012, documents the County's long-term strategy for addressing the adverse effects of climate change (County of San Diego 2012). The CAP outlines various mechanisms and measures for reducing GHG emissions at the County level, including those specific to water conservation, waste reduction, land use, and adaptation strategies to fulfill the obligations delineated in AB 32. The CAP includes County goals previously established under the County General Plan and County Strategic Energy Plan, and establishes reduction targets at 15% below 2005 levels by 2020 and 49% below 2005 levels by 2035. The CAP builds on long-standing efforts, including state initiatives, County staff recommendations, and regional planning strategies to enhance environmental sustainability and carbon neutrality, particularly unincorporated segments of the County. As shown in Table 2.3-2, GHG Sources in San Diego County, unincorporated San Diego County emitted approximately 4.51 MMT CO2E of GHGs in 2005. Similar to the statewide emissions inventory, the transportation sector was the largest contributor to GHG emissions in 2005, accounting for approximately 59% of total GHG emissions (more than 2.6 MMT CO_2E). Emission sources and emission estimates by sector are shown in Table 2.3-2.

County Green Building Incentive Program

The County has a Green Building Incentive Program that is a voluntary program to promote energy- and resource-efficient building design. Incentives, in the form of fast-track plan checking and fee reductions, are offered to developers who use recycled materials in construction, install irrigation systems using greywater, build projects that exceed the energy efficiency standards of California's Title 24, or install photovoltaic electricity generation systems.

2.3.2 Regulatory Setting

Federal

Clean Air Act

The federal Clean Air Act (CAA), passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the CAA, including the setting of National Ambient Air Quality Standards (NAAQS) for major air pollutants, hazardous air pollutant standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric O_3 protection, and enforcement provisions. NAAQS are established for "criteria pollutants" under the CAA, which are O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The CAA requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a State Implementation Plan (SIP) that demonstrates how those areas will attain the standards within mandated time frames.

Massachusetts v. U.S. Environmental Protection Agency

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

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

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

Energy Independence and Security Act

On December 19, 2007, President Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the Act would do the following, which would aid in the reduction of national GHG emissions:

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
2. Set a target of 35 miles per gallon (mpg) for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and to create a separate fuel economy standard for work trucks.
3. Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

State

The federal CAA delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts (AQMDs) and air pollution control districts (APCDs) at the regional and county levels. CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act (CCAA) of 1988, responding to the federal CAA, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (CAAQS), which are more restrictive than the NAAQS, consistent with the CAA, which requires state regulations to be at least as restrictive as the federal requirements. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 2.3-3, Ambient Air Quality Standards.

As part of its diesel risk reduction program, CARB adopted an Airborne Toxic Control Measure (ATCM) that applies to new and in-use stationary compression-ignition (i.e., diesel) engines. The ATCM was adopted in 2004 and revised in November 2010 with an effective date of May 19, 2011. After December 31, 2008, the ATCM requires that new emergency standby engines must comply with EPA emission standards applicable to a 2007-model-year off-road engine of the same horsepower rating. The ATCM further limits the particulate matter (PM) emissions from an emergency standby engine operated less than 50 hours per year for maintenance and testing to 0.15 gram per brake-horsepower-hour.

Assembly Bill 1493

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

Before these regulations could go into effect, the EPA had to grant California a waiver under the federal CAA, which ordinarily preempts state regulation of motor vehicle emission standards. The waiver was granted by Lisa Jackson, the EPA Administrator, on June 30, 2009. On March 29, 2010, the CARB Executive Officer approved revisions to the motor vehicle GHG standards to harmonize the state program with the national program for 2012–2016 model years. The revised regulations became effective on April 1, 2010.

Assembly Bill 32

In furtherance of the goals established in Executive Order S-3-05, the legislature enacted AB 32 (Núñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006. The GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020.

CARB has been assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

The first action under AB 32 resulted in the adoption of a report listing early action GHG emission reduction measures on June 21, 2007. The early actions include three specific GHG control rules. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32. The three original early-action regulations meeting the narrow legal definition of "discrete early action GHG reduction measures" include:

1. A low-carbon fuel standard to reduce the "carbon intensity" of California fuels
2. Reduction of refrigerant losses from motor vehicle air conditioning system maintenance to restrict the sale of "do-it-yourself" automotive refrigerants
3. Increased methane capture from landfills to require broader use of state-of-the-art methane capture technologies.

The additional six early-action regulations, which were also considered "discrete early action GHG reduction measures," consist of:

1. Reduction of aerodynamic drag, and thereby fuel consumption, from existing trucks and trailers through retrofit technology
2. Reduction of auxiliary engine emissions of docked ships by requiring port electrification
3. Reduction of PFCs from the semiconductor industry
4. Reduction of propellants in consumer products (e.g., aerosols, tire inflators, and dust removal products)
5. Requirements that all tune-up, smog check, and oil change mechanics ensure proper tire inflation as part of overall service in order to maintain fuel efficiency
6. Restriction on the use of SF6 from non-electricity sectors if viable alternatives are available.

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMT CO_2E. In addition to the 1990 emissions inventory, CARB also adopted regulations requiring mandatory reporting of GHGs for large facilities that account for 94% of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity

retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and other industrial sources that emit CO_2 in excess of specified thresholds.

On December 11, 2008, CARB approved the Climate Change Proposed Scoping Plan: A Framework for Change (Scoping Plan; CARB 2008) to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

The key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
- Achieving a statewide renewables energy mix of 33%
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

Senate Bill 97

In August 2007, the legislature enacted Senate Bill (SB) 97 (Dutton), which directs the Governor's Office of Planning and Research (OPR) to develop guidelines under the California Environmental Quality Act (CEQA) for the mitigation of GHG emissions. OPR was to develop proposed guidelines by July 1, 2009, and the Natural Resources Agency was directed to adopt the guidelines by January 1, 2010.

On June 19, 2008, OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents (OPR 2008). The advisory indicated that a project's GHG

emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities, should be identified and estimated. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures that are necessary to reduce GHG emissions to a level that is less than significant.

The Natural Resources Agency adopted the CEQA Guidelines Amendments on December 30, 2009. The amendments became effective on March 18, 2010. The amended guidelines establish several new CEQA requirements concerning the analysis of GHGs, including the following:

- Requiring a lead agency to "make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project" (Section 15064(a))
- Providing a lead agency with the discretion to determine whether to use quantitative or qualitative analysis or performance standards to determine the significance of GHG emissions resulting from a particular project (Section 15064.4(a))
- Requiring a lead agency to consider the following factors when assessing the significant impacts from greenhouse gas emissions on the environment:
    - The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
    - Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
    - The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (Section 15064.4(b)).
- Allowing lead agencies to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures, including offsets that are not otherwise required (Section 15126.4(c)).

The amended guidelines also establish two new guidance questions regarding GHG emissions in the Environmental Checklist set forth in CEQA Guidelines Appendix G:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The adopted amendments do not establish a GHG emission threshold, and instead allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts.[3] The Natural Resources Agency also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions.[4]

Local

San Diego Air Pollution Control District

While CARB is responsible for the regulation of mobile emission sources within the state, local AQMDs and APCDs are responsible for enforcing standards and regulating stationary sources. The project is located within the SDAB and is subject to SDAPCD guidelines and regulations. In San Diego County, O_3 and particulate matter are the pollutants of main concern, since exceedances of state ambient air quality standards for those pollutants are experienced here in most years. For this reason, the SDAB has been designated as a nonattainment area for the state PM_{10}, $PM_{2.5}$, and O_3 (1-hour and 8-hour) standards. The SDAB is also a federal O_3 moderate nonattainment area for the 1997 8-hour NAAQS and as a marginal nonattainment area for the 2008 8-hour NAAQS for O_3 and a CO maintenance area.

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 County Regional Air Quality Strategy (RAQS) was initially adopted in 1991 and is updated on a triennial basis (most recently in 2009). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities 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 emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the county as part of the development of their general plans.

[3] "The CEQA Guidelines do not establish thresholds of significance for other potential environmental impacts, and SB 97 did not authorize the development of a statement threshold as part of this CEQA Guidelines update. Rather, the proposed amendments recognize a lead agency's existing authority to develop, adopt and apply their own thresholds of significance or those developed by other agencies or experts" (California Natural Resources Agency 2009, p. 84).

[4] "A project's compliance with regulations or requirements implementing AB 32 or other laws and policies is not irrelevant. Section 15064.4(b)(3) would allow a lead agency to consider compliance with requirements and regulations in the determination of significance of a project's greenhouse gas emissions" (California Natural Resources Agency 2009, p. 100).

The Eight-Hour Ozone Attainment Plan for San Diego County indicates that local controls and state programs would allow the region to reach attainment of the federal 8-hour O_3 standard by 2009 (SDAPCD 2007). In this plan, SDAPCD relies on the RAQS to demonstrate how the region will comply with the federal O_3 standard. The RAQS details how the region will manage and reduce O_3 precursors (NO_x and VOCs) by identifying measures and regulations intended to reduce these contaminants. The control measures identified in the RAQS generally focus on stationary sources; however, the emissions inventories and projections in the RAQS address all potential sources, including those under the authority of CARB and the EPA. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS.

In December 2005, SDAPCD prepared a report titled "Measures to Reduce Particulate Matter in San Diego County" to address implementation of SB 656 in San Diego County (SB 656 required additional controls to reduce ambient concentrations of PM_{10} and $PM_{2.5}$) (SDAPCD 2005). In the report, SDAPCD evaluates the implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion.

As stated above, the SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations would apply to construction of the proposed project and some of the proposed stationary sources:

- **SDAPCD Regulation II: Permits; Rule 10: Permits Required.** Requires that any person building, erecting, altering, or replacing any article, machine, equipment or other contrivance, the use of which may cause the issuance of air contaminants, shall receive written authorization (Authority to Construction) and a Permit to Operate from the SDAPCD (SDAPCD 2000).
- **SDAPCD Regulation II: Permits; Rule 20.1: New Source Review—General Provisions.** Establishes the general provisions, including exemptions, definitions, and emission calculations, that apply to any new or modified emission unit, any replacement emission unit, any relocated emission unit or any portable emission unit for which an Authority to Construct or Permit to Operate is required (SDAPCD 1998a).
- **SDAPCD Regulation II: Permits; Rule 20.2: New Source Review—Non-Major Sources.** Applies to any new or modified stationary source, to any new or modified emission unit, and to any relocated emission unit that is not considered a major stationary source. As applied to new or modified sources, the rule requires (1) the use of Best Available Control Technology (BACT) where the emissions of PM_{10}, NO_x, VOC, or SO_x would increase by 10 pounds per day or more; (2) an air quality impact analysis if the emissions of PM_{10}, NO_x, VOC, SO_x, or lead exceed designated trigger levels; and (3) establishes public noticing requirements prior to issuance of a permit (SDAPCD 1998b).

- **SDAPCD Regulation IV: Prohibitions; Rule 50: Visible Emissions.** Prohibits any activity causing air contaminant emissions darker than 20% opacity for more than an aggregate of 3 minutes in any consecutive 60-minute time period. In addition, Rule 50 prohibits any diesel pile-driving hammer activity causing air contaminant emissions for a period or periods aggregating more than 4 minutes during the driving of a single pile (SDAPCD 1997).
- **SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property (SDAPCD 1969).
- **SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** 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 (SDAPCD 2009).
- **SDAPCD Regulation IV: Prohibitions; Rule 67.0: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2001).
- **SDAPCD Regulation XII: Prohibitions; Rule 1200: Toxic Air Contaminants—New Source Review.** Applies to any new, relocated, or modified emission unit which may increase emissions of one or more TACs that requires an Authority to Construct or Permit to Operate. The rule establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit additional TACs. Under Rule 1200, permits to operate may not be issued when emissions of TACs result in an incremental cancer risk greater than 1 in 1 million without application of Toxics-BACT (T-BACT), or an incremental cancer risk greater than 10 in 1 million with application of T-BACT, or a health hazard index (chronic and acute) greater than one (SDAPCD 1996).
- **SDAPCD Regulation XI: National Emission Standards for Hazardous Air Pollutants; Subpart M, Rule 361.145: Standard for Demolition and Renovation.** Requires owners and operators of a demolition or renovation activity to provide written notification of planned asbestos stripping or removal to the Control Officer no less than 10 days prior to demolition and/or asbestos removal. A Notification of Demolition and Renovation Form and fee is required with written notification. Procedures for asbestos emission control are provided under Rule 361.145 and must be followed in accordance with this regulation (SDAPCD 1995).

San Diego County

During construction of a project, the construction contractor is required to comply with County Code Section 87.428 and implement appropriate dust control measures.

County Code Section 87.428, Dust Control Measures. As part of the San Diego County Grading, Clearing, and Watercourses Ordinance, County Code Section 87.428 requires all clearing and grading to be carried out with dust control measures adequate to prevent creation of a nuisance to persons or public or private property. Clearing, grading, or improvement plans shall require that measures such as the following be undertaken to achieve this result: watering, application of surfactants, shrouding, control of vehicle speeds, paving of access areas, or other operational or technological measures to reduce dispersion of dust. These project design measures are to be incorporated into all earth-disturbing activities to minimize the amount of particulate matter emissions from construction.

SDAB Attainment Status

An area is designated in attainment when it is in compliance with the NAAQS and/or CAAQS. These standards are set by the EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare.

The criteria pollutants of primary concern that are considered in this air quality assessment include O_3, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. Although there are no ambient standards for VOCs or NO_x, they are important as precursors to O_3.

The SDAB is designated by EPA as a moderate nonattainment area for the 1997 8-hour NAAQS for O_3 and as a marginal nonattainment area for the 2008 8-hour NAAQS for O_3. The SDAB was designated in attainment for all other criteria pollutants under the NAAQS with the exception of PM_{10}, which was determined to be unclassifiable. The SDAB is currently designated nonattainment for O_3, both 1-hour and 8-hour, and PM_{10} and $PM_{2.5}$ under the CAAQS. It is designated attainment for CO, NO_2, SO_2, lead, and sulfates.

Table 2.3-4, SDAB Attainment Classification, summarizes SDAB's federal and state attainment designations for each of the criteria pollutants.

Air Quality Monitoring Data

The SDAPCD operates a network of ambient air monitoring stations throughout San Diego County, which measure ambient concentrations of pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The SDAPCD monitors air quality conditions at 10 locations throughout the basin. Due to its similar geographic and climactic characteristics, the

Alpine–Victoria Drive monitoring station concentrations for all pollutants, except PM_{10}, CO, and SO_2, are considered most representative of the proposed project. The Chula Vista monitoring station is the nearest location to the project site where CO and SO_2 concentrations are monitored, and the El Cajon–Redwood Avenue monitoring station is the nearest location to the project site where PM_{10} concentrations are monitored. Ambient concentrations of pollutants from 2008 through 2011 are presented in Table 2.3-5, Ambient Air Quality Data. The number of days exceeding the AAQS is shown in Table 2.3-6, Frequency of Air Quality Standard Violations. The state 8-hour and 1-hour O_3 standards were exceeded in 2008, 2009, and 2010, and the federal 8-hour O_3 standard was exceeded in 2008, 2009, and 2010. The state 24-hour PM_{10} standard was exceeded in 2009; the state annual PM_{10} standard was exceeded in 2008, 2009, and 2010; the state annual $PM_{2.5}$ standard was exceeded in 2008; and the federal 24-hour $PM_{2.5}$ standard was exceeded in 2009. Air quality within the project region was in compliance with both CAAQS and NAAQS for NO_2, CO, PM_{10} (NAAQS only), and SO_2 during this monitoring period.

Toxic Air Contaminants

TACs refer to a category of air pollutants that pose a present or potential hazard to human health, but which tend to have more localized impacts than criteria pollutants. CARB recently identified diesel particulate matter as the predominant TAC in California. Diesel particulate matter is emitted into the air via diesel-powered mobile vehicles. Such vehicles include heavy-duty diesel trucks, construction equipment, and passenger cars. Certain reactive organic gases may also qualify as TACs. Because no safe region-wide level of emissions can be established for TACs, their regulation is based on the levels of cancer risk.

California Air Toxics "Hot Spots" Information and Assessment Act (AB 2588)

The California Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) is a statewide program enacted in 1987. AB 2588 requires hundreds of facilities in the County to quantify the emissions of TACs and in some cases conduct a health risk assessment and notify the public, while developing risk reduction strategies. SDAPCD Rule 1210 implements the public notification and risk reduction requirements of AB 2588 and requires facilities to reduce risks to acceptable levels within 5 years. In addition, Rule 1200 establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit additional TACs (County of San Diego 2007).

2.3.3 Analysis of Project Effects and Determination of Significance

Based on the proposed tiered permitting for horse stables, the development of horse stables in certain areas within the County that currently require a Major Use Permit (MUP) may be allowed without a discretionary permit. Under the proposed project, future equine uses within Tier One

and Tier Two would not be subject to environmental review. The following impact analysis below has been separated into Tier One/Tier Two and Tier Three/Tier Four to reflect the distinction in the level of review required for the establishment of each use (non-discretionary versus discretionary), when necessary.

2.3.3.1 Conformance to the SDRAQS and SIP

Guidelines for the Determination of Significance

For the purpose of this EIR, the following significance guideline from Appendix G of the State CEQA Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project will conflict with or obstruct the implementation of the SDRAQS or applicable portions of the SIP.

Analysis

The San Diego Regional Air Quality Strategy (SDRAQS) outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. In addition, the SDAPCD relies on the SIP, which includes the SDAPCD's plans and control measures for attaining the O_3 NAAQS. These plans accommodate emissions from all sources, including even natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. The SDRAQS relies on information from CARB and SANDAG to predict future emissions and determine strategies for reducing stationary source emissions. The CARB mobile source 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. Therefore, if the proposed project includes development that is greater than anticipated in the County's General Plan and SANDAG's growth projections, the proposed project would conflict with the implementation of SDRAQS and SIP.

The proposed project consists of amendments to the Zoning Ordinance related to equine uses in unincorporated portions of the County over which the County has land use jurisdictions. The proposed project would merge the two previous stable use types (Boarding/Breeding or Public) into one simplified use type (Horse Stable). Although the proposed project would amend the existing Zoning Ordinance, no change in land uses would occur, and the proposed project would remain consistent with the existing land use designation as delineated in the County General Plan. Additionally, no residential, commercial retail or growth-inducing development is proposed that would substantially increase vehicle miles traveled (VMT) throughout the County. Moreover, the proposed project is not anticipated to increase local equine-related employment in the region. The proposed project would not result in a

substantial increase in the numbers of horses or equine facilities in the County. Rather, the proposed project is intended to update equine regulations and would allow many unpermitted facilities in the County to come into compliance with the ordinance.

As the proposed project would not contribute to local population growth or substantial employment growth and associated VMT on local roadways, the proposed project is considered accounted for in the RAQS, and the project would not conflict with or obstruct the implementation of local air quality plans. Impacts would be considered **less than significant**.

2.3.3.2 Conformance to Federal and State Air Quality Standards

Guidelines for the Determination of Significance

For the purpose of this EIR, the following significance guideline from Appendix G of the state CEQA Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would result in emissions that would violate any air quality standards or contribute substantially to an existing or projected air quality violation.

Analysis

The air pollutants of greatest concern in the County are O_3, PM_{10}, and $PM_{2.5}$ because of the current nonattainment status for the NAAQS (O_3) and CAAQS (O_3, PM_{10}, and $PM_{2.5}$). O_3 is formed when VOCs and NO_x react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil), solvents, petroleum processing and storage, and pesticides. Sources of PM_{10} in both urban and rural areas include motor vehicles, wood-burning stoves and fireplaces, dust from construction, landfills, agriculture, wildfires, brush/waste burning, and industrial sources of windblown dust from open lands. Main contributors to $PM_{2.5}$ in the County are combustion of organic carbon, and ammonium sulfate and ammonium nitrate from combustion sources.

Tier One and Tier Two

Construction Impacts

Construction activities would result in a temporary addition of pollutants to the local airshed caused by ground disturbance, dust emissions, and combustion pollutants from on-site construction equipment (if required), as well as from off-site trucks hauling construction materials to the project site (if required). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the

prevailing weather conditions. Therefore, such emission levels can be approximately estimated only with a corresponding uncertainty in precise ambient air quality impacts. Fugitive dust emissions would primarily result from site preparation and road construction activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Construction of Tier One and Tier Two projects would involve erection of structures that would be associated with equine facilities including horse stables, animal enclosures and pastures as well as related infrastructure including parking lots, driveways, fences, and buildings. These additional equine facilities and related infrastructure would require minimal material deliveries and would not require heavy construction equipment that would contribute substantial emissions to the local airshed. Additionally, construction of these facilities would be limited by the maximum uses of the Tier One and Tier Two categories, the useable area on the property, and the appropriate setbacks for these facilities.

The worst-case ground-disturbance scenario was developed using the assumptions described in Section 1.4.2 which includes the assumption that all qualifying property that is 5 acres or less is completely built out, and property over 5 acres only disturbs 5 acres as limited by Tier Two. The scenario removed lands that would not be affected by this project, including tribal lands, institutional, trans/communication/utilities, airports, shopping centers, education, parks, and open space easement and conservation lands. Lands containing slopes of 25% or more were removed because equine uses tend to be located on relatively flat or gently sloping land. Lastly, 0.5 acre was removed for every property 5 acres or less to account for an average deduction of setbacks, single-family homes, other accessory uses, and driveways. Under this scenario, the maximum ground disturbance for the entire County under Tier One and Tier Two would be a total of 113,941 acres.

In accordance with the County grading ordinance, grading associated with a building that involves 200 cubic yards to 2,500 cubic yards with no more than 200 cubic yards of import or export would require a minor grading permit, involving only ministerial review. If grading associated with an arena or other equine facility other than a building or structure exceeds 200 cubic yards, a major grading permit would be required and would require further environmental review pursuant to CEQA. If significant impacts to air quality were identified under these conditions, the permit conditions would include measures to mitigate impacts to air resources and reduce emissions associated with grading activities. Equine uses that involve less than 200 cubic yards of grading would be exempt from the County's Grading Ordinance and associated reviewing processes (County of San Diego 2011). Additionally, arenas and other equine-type facilities would most likely be located on flat grounds, near existing development which would not involve substantial grading that would require a major grading permit.

Moreover, as discussed below regarding Tier Three and Tier Four facilities, construction emissions under the representative project scenario for these types of facilities would be well below significance thresholds for all criteria pollutants as shown in Table 2.3-8. Because Tier One and Tier Two facilities would be significantly smaller in size and would require little to no construction equipment for structure erection on any one site, construction emissions would be even lower than those quantified for Tier 3 and Tier 4 facilities. Furthermore, all future equine uses established pursuant to this Zoning Ordinance amendment would be required to comply with all existing state and federal regulations pertaining to air resources. Therefore, due to the minimal construction activities associated with Tier One and Tier Two projects under the proposed project, construction impacts would be **less than significant**.

Operational Impacts

Following the completion of construction activities, the proposed project would generate VOCs, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile and stationary sources, including vehicular traffic and area sources such as landscaping.

The principal pollutant of concern during operational activities would be CO, which would be generated by resident, equine facility owner, visitor, and delivery vehicles traveling to individual project sites. The actual locations and actions of future projects are unknown at this time; therefore, the actual maximum daily emission rates cannot be quantified. However, because operational activities for Tier One and Tier Two projects would be infrequent and occur over short periods of time, criteria pollutant emissions, including CO, would be minimal and are not expected to result in the exceedance of the screening-level thresholds as shown in Table 2.3-7, or any federal or state air quality standards. As impacts related to emissions from Tier One and Tier Two projects would not violate any air quality standards or contribute substantially to an existing or projected air quality violation; impacts would be **less than significant**.

Tier Three and Tier Four

Construction Impacts

Structures that would be constructed associated with equine facilities include horse stables, animal enclosures and pastures as well as related infrastructure including parking lots, driveways, fences, and buildings. Similar to Tier One and Tier Two projects, the construction of Tier Three and Tier Four projects would result in a temporary addition of pollutants to the local airshed caused by ground disturbance, dust emissions, and combustion pollutants from on-site construction equipment (if required), as well as from off-site trucks hauling construction materials to the project site (if required). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the

prevailing weather conditions. Therefore, such emission levels can be approximately estimated only with a corresponding uncertainty in precise ambient air quality impacts.

The actual locations and actions of future projects are unknown at this time; therefore, the actual maximum daily emission rates for future projects cannot be quantified. However, in order to determine if future projects would have the potential to exceed screening-level criteria, an analysis of a representative project was evaluated that is considered typical of a Tier Three/Tier Four equine facility in San Diego County. Information used for the purposes of air quality modeling is based on survey data collected by County Staff as of December 2012 for the proposed project, which includes facility site visits and interviews of 17 stable operators.

Trip generation rates used to estimate mobile emission estimates were taken from the project traffic impact analysis prepared by LLG. There are no published trip generation rates for "horse stables" as proposed by the project, either in the national Institute of Transportation Engineers Trip Generation Manual, or in the regional SANDAG Brief Guide to Vehicular Traffic Generation Rates for the San Diego Region. Therefore, project trip generation was calculated based various stables currently operating within the County of San Diego, and developed from operational data collected in surveys conducted by County Staff. Several pieces of information relevant to the trip generation determination included project size (both in acres and horses), the number of employees, the number of deliveries, and the amount of customers which occur on typical days (see Appendix F of this EIR).

The representative project evaluated in this analysis includes the construction of a 7,000-square-foot horse barn, a 1,000-square-foot hay barn, a 500-square-foot storage facility, and a 20,000-square-foot sand arena. Based on survey data collected by the County, a typical arena would include a fenced-in flat area for horse training, riding, and exercising; therefore, only site grading for the arena was quantified.

Emissions from the construction phase of the project were estimated using the URBEMIS 2007, Version 9.2.4, land use and air emissions model (Jones & Stokes 2007). For the purposes of estimating the representative proposed project's emissions, it was assumed that proposed project development would occur over 2 months, beginning in 2014. Default construction phases provided by URBEMIS were selected for emissions modeling including fine site grading (2 weeks), building construction (4 weeks), and architectural coatings (10 days); however, architectural coatings would likely not be required for barn and storage facilities on site. It was conservatively assumed that 1 acre of total land area would be graded prior to construction and that any heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. Additionally, URBEMIS model assumptions for construction equipment were used in calculating construction

emissions. The equipment mix is meant to represent a reasonably conservative estimate of construction activity. Additional details of the model inputs are included as Appendix E.

The proposed project is subject to SDAPCD Rule 55—Fugitive Dust Control. This requires that the project take steps to restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would limit any fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. To account for dust control measures in the calculations, it was assumed that the active sites would be watered at least two times daily, resulting in an approximately 55% reduction of particulate matter.

Table 2.3-8, Estimated Maximum Daily Construction Emissions, shows the estimated maximum daily construction emissions associated with the construction phase of the representative project. The emissions associated with construction would be temporary and short-term in nature for any given project under the proposed project. As shown in Table 2.3-8, daily construction emissions would not exceed the thresholds for VOCs, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ for the representative Tier Three/Tier Four project.

It is possible that multiple equine facilities could be constructed simultaneously in the same general vicinity under the proposed project. Emissions that would result from the construction of multiple facilities simultaneously would vary depending on variables such as the number and size of individual equine facilities, model and number of construction equipment used, and number of workers commuting to and from the construction site. Based on emission estimates for the representative project, it was calculated that four projects constructed simultaneously would trigger a criteria pollutant threshold, namely 80.96 pounds of VOC per day. However, the URBEMIS model used to analyze the representative project conservatively assumes the application of architectural coatings traditionally used for residential or commercial structures. Structures associated with equine facilities, including barns, stables, and storage spaces, would likely not require this degree of architectural coating application. Therefore, this analysis also looks at the second criteria pollutant triggered due to the construction of simultaneous projects, which is $PM_{10.}$ The threshold for PM_{10} would be exceeded if approximately nine of the representative projects were constructed simultaneously and in the same vicinity resulting in 109.89 pounds per day.

As previously discussed, grading associated with a building that involves 200 cubic yards to 2,500 cubic yards with no more than 200 cubic yards of import or export would only require a minor grading permit and ministerial review. If grading associated with an arena or other equine facility component other than a building or structure exceeds 200 cubic yards, a Grading Permit and further environmental review pursuant to CEQA would be required. If significant impacts to air quality were identified under these conditions, the permit conditions would include measures to mitigate impacts to air resources and reduce emissions associated with grading activities. Equine uses that involve less than 200 cubic yards of grading would be exempt from the

County's Grading Ordinance and associated reviewing processes (County of San Diego 2011). Additionally, arenas and other equine-type facilities would most likely to be located on flat grounds near existing development which would not involve substantial grading that would require a major grading permit.

As part of the County's discretionary review process, all future Tier Three and Tier Four projects would be evaluated under CEQA and would be required to implement measures to minimize impacts to air resources, as necessary. CEQA requires proposed projects to provide detailed information on the potentially significant environmental effects they are likely to have, list ways in which the significant environmental effects would be minimized, and identify alternatives that would reduce or avoid the significant impacts identified for the project. Additionally, all future equine uses established pursuant to this Zoning Ordinance amendment would be required to comply with all existing state and federal regulations pertaining to air resources. Although the discretionary review process and compliance with federal, state, and local regulations would minimize potential impacts, and impacts associated with the representative project were found to be less than significant, there is ultimately no guarantee on a project-specific level that mitigation measures would reduce impacts to a level below significant. Additionally, multiple projects could potentially be under construction simultaneously in the same general vicinity, which may trigger a criteria pollutant threshold. Therefore, Tier Three and Four facilities of the proposed project may result in **potentially significant impacts** related to violation of air quality standards or contributing substantially to an existing or projected air quality violation (**AQ-1**).

Operational Impacts

Relative to operational emissions, the SDAPCD specifies Air Quality Impact Analysis trigger levels for new or modified stationary sources (SDAPCD 1998a, 1998b). These screening-level thresholds, as shown in Table 2.3-7, may be used for CEQA purposes to evaluate if a proposed project could potentially have a significant adverse impact due to increased emissions. Pursuant to the County's Report Format and Content Requirements: Air Quality (County of San Diego 2007), County staff would evaluate all Tier Three and Tier Four projects using screening-level thresholds to determine if the preparation of an Air Quality Study (AQS) is warranted. If required, an AQS would include project-specific emissions totals generated by specific scientific calculations or modeling programs such as Urban Emissions Model (URBEMIS) to demonstrate that the project's total air quality impacts result in ground-level concentrations that are below the CAAQS and NAAQS. The AQS would assess site-specific conditions and would require projects to apply feasible mitigation, as necessary. APCD Rules 20.2 and 20.3 do not have Air Quality Impact Assessment (AQIA) thresholds for emissions of VOCs and $PM_{2.5}$. The use of the screening level for VOCs specified by the South Coast Air Quality Management District (SCAQMD), which generally has stricter emissions thresholds than San Diego's APCD, is recommended for evaluating projects in San Diego County. For $PM_{2.5}$, the EPA "Proposed Rule

to Implement the Fine Particle National Ambient Air Quality Standards" published September 8, 2005, which quantifies significant emissions as 10 tons per year, will be used as the screening-level criteria (County of San Diego 2007).

Following the completion of construction activities, the proposed project would generate VOCs, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile and stationary sources, including vehicular traffic and area sources including landscaping.

The proposed project would impact air quality through an increase in vehicular traffic generated by equine facility visitors, workers associated with the equine facility operations, and delivery trips. According to trip generation rates provided in the traffic analysis conducted for the project (see Appendix F of this EIR), total project-generated daily traffic is estimated to be 44 trips per day (8 employee trips, 4 delivery trips, and 32 "customer" trips) for the representative Tier Three/Tier Four project evaluated in this analysis. URBEMIS 2007 was used to estimate daily emissions from proposed vehicular sources (refer to Appendix E). The model's default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs. Emission factors representing the vehicle mix and emissions for 2014 (approximate completion of hypothetical project construction) were used to estimate emissions.

In addition to estimating mobile source emissions, URBEMIS 2007 was used to estimate emissions from the project area sources, which include landscaping equipment (which would not produce winter emissions) and architectural coatings; however, architectural coatings would likely not be required for the construction of barn and storage facilities.

Table 2.3-9, Estimated Daily Maximum Operational Emissions, presents the maximum daily emissions associated with the operation of the proposed project after all phases of construction have been completed. The values shown are the maximum summer and winter daily emissions results from URBEMIS 2007. Complete details of the emissions calculations are provided in Appendix E of this document. As shown in Table 2.3-9, daily area source and operational emissions would not exceed significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$ with the operation of a single representative Tier Three or Tier Four equine facility. As such, the operational impacts generated from a single representative equine facility on air quality would be less than significant. Based on emission estimates for the representative project shown in Table 2.3-9, the County could accommodate up to 174 additional Tier Three and Tier Four facilities before operational thresholds for any criteria pollutant would be exceeded. Due to the large number of representative Tier Three or Tier Four projects that could be accommodated regarding air emissions, impacts would be minimal during operation of the proposed project. Additionally, as Tier Four facilities would require more than 10 acres of useable land, many properties within unincorporated San Diego County do not have the acreage capacity to accommodate Tier Four facilities. Approximately 0.07% of the properties within the project area are over 10 acres.

Therefore, it is not anticipated that a large number (over 174) additional Tier Three or Tier Four facilities would be built under the proposed project, which would result in operational impacts relative to violation of air quality standards or contribute substantially to an existing or projected air quality violation. Operational impacts would be **less than significant**.

2.3.3.3 Nonattainment Criteria Pollutants

Guidelines for the Determination of Significance

For the purpose of this EIR, the following significance guideline from Appendix G of the State CEQA Guidelines applies to the cumulative impact analysis. A significant impact would result if:

- The project would 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 (including releasing emissions that exceed quantitative thresholds for ozone precursors).

Analysis

The SDAB is currently classified as a nonattainment area for the NAAQS and CAAQS for O_3, which is caused by contributions from O_3 precursors NO_x and VOCs. The SDAB is also classified as a nonattainment area for the CAAQS for PM_{10}, and $PM_{2.5}$. As discussed in Section 2.3.3.2, emissions from future Tier One and Tier Two projects would not violate any air quality standards or contribute substantially to an existing or projected air quality violation. Future Tier Three and Tier Four projects, however, could potentially result in emissions that would exceed screening-level thresholds and could potentially result in impacts that would not be mitigated to a level below significant. These emissions would primarily come from vehicle trips and equipment during construction.

Tier One and Tier Two

Emissions associated with Tier One and Tier Two projects could include PM_{10}, NO_x, and VOCs from construction/grading activities, as well as VOCs as a result of traffic from operations at the equine facility. However, as described in Section 2.3.3.2, traffic generated by the construction of these facilities would be relatively minor, and any substantial earth-moving activities would be subject to the County Grading Ordinance. Future maintenance activities for Tier One and Tier Two projects would be infrequent and would occur for short periods of time. Therefore, the emissions associated with Tier One and Tier Two projects is anticipated to be minimal and would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for O_3 precursors). Impacts relative to emissions from Tier One and Tier Two facilities would be **less than significant**.

Tier Three and Tier Four

The actual locations and actions of future projects are unknown at this time; therefore, the actual maximum daily emission rates for future projects under Tier Three and Tier Four cannot be quantified. However, in order to determine if future projects would have the potential to exceed screening-level criteria, an analysis of a single representative project was evaluated as described in Section 2.3.3.2. It was determined that some Tier Three and Tier Four projects may result in impacts due to emissions from construction activities; however, all criteria pollutant emissions levels under the single representative project were well below the screening thresholds. However, the construction of four to nine representative project facilities as described previously would exceed screening thresholds. As part of the County's discretionary review process, all future Tier Three and Tier Four projects would be evaluated under CEQA and required to implement feasible mitigation measures where significant impacts are identified. Ultimately, as there is no guarantee on a project-specific level that mitigation measures would reduce impacts to a level below significant, the proposed project could result in a cumulatively considerable net increase of a criteria pollutant for which the project region is in nonattainment **(AQ-2)**.

2.3.3.4 Sensitive Receptors

Guidelines for the Determination of Significance

For the purpose of this EIR, the following significance guideline from Appendix G of CEQA Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project will expose sensitive receptors to substantial pollutant concentrations.

Analysis

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as toxic air contaminants (TACs) or hazardous air pollutants (HAPs). As described in Section 2.3.2, TACs refer to a category of air pollutants that pose a present or potential hazard to human health, but which tend to have more localized impacts than criteria pollutants. Because no safe region-wide level of emissions can be established for TACs, their regulation is based on the levels of cancer risk. Project impacts may include emissions of pollutants identified by the federal and state government as TACs. The risks are mainly attributable to exposure to emissions from on-road vehicles, especially diesel particulate matter from truck trips. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program, and is aimed at HAPs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal HAPs, and is adopting appropriate control measures for sources of these TACs. As examples, TACs include acetaldehyde, benzene, 1,3-

butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter. Some of the TACs are groups of compounds that contain many individual substances (for example, copper compounds and polycyclic organic matter).

In San Diego County, APCD Rule 1210 implements the public notification and risk reduction requirements of state law, and requires facilities with high potential health risk levels to reduce health risks below significant risk levels. In addition, Rule 1200 establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit additional TACs. Under Rule 1200, permits to operate may not be issued when emissions of TACs result in an incremental cancer risk greater than 1 in 1 million without application of Toxics-BACT (T-BACT), or an incremental cancer risk greater than 10 in 1 million with application of T-BACT, or a health hazard index (chronic and acute) greater than one. The human health risk analysis is based on the time, duration, and exposures expected. T-BACT will be determined on a case-by-case basis; however, examples of T-BACT include diesel particulate filters, catalytic converters and selective catalytic reduction technology.

Sensitive receptors are typically defined as schools (preschool–12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. For the purposes of CEQA analysis in the County, the definition of a sensitive receptor also includes residents.

Tier One and Tier Two

The Tier One and Tier Two commercial horse stable uses could result in an increase in equine structures and facilities, as well as related infrastructure including driveways, fences, parking lots and accessory buildings. These additional equine facilities and related infrastructure would require minimal material deliveries and would not require heavy construction equipment that would contribute substantial emissions to the local airshed. Additionally, construction of these facilities would be limited by the maximum uses of the Tier One and Tier Two categories, the useable area on the property, and the appropriate setbacks for these facilities. Moreover, traffic generated by Tier One and Tier Two projects would be limited to visitors and equine-related deliveries associated with ongoing operations of smaller equine facilities and waste disposal truck trips throughout the County. The amount of construction vehicle trips generated by future Tier One and Tier Two projects is anticipated to be minimal and short-term. In addition, the maintenance trips would be sporadic and would not result in any permanent increases in vehicle trips that would contribute to long-term exhaust emissions resulting in substantial pollutant concentrations. Therefore, Tier One and Tier Two projects are not anticipated to create "hotspots" or result in TACs near sensitive receptors; impacts to sensitive receptors would be **less than significant**.

Tier Three and Tier Four

The actual locations and actions of future projects are unknown at this time; therefore, the actual maximum daily emission rates of criteria pollutants from future projects cannot be quantified. However, in order to determine if future projects would have the potential to exceed screening-level criteria, an analysis of one representative project was evaluated as described in Section 2.3.3.2, and it was determined that some Tier Three and Tier Four projects may result in impacts due to emissions from construction activities, including diesel particulate matter. Construction emissions would be short-term (approximately 2 months for the evaluated project scenario) after which project-related TAC emissions, such as diesel particulate matter, would cease. No residual TAC emissions and corresponding cancer risk are anticipated after construction.

Additionally, it is possible that multiple equine facilities could be constructed simultaneously in the same general vicinity under the proposed project. Emissions that would result from the construction of multiple facilities during the same time period would vary depending on a number of variables such as the size and quantity of individual equine facilities, model and number of construction equipment used, and number of workers commuting to and from the construction site. Although multiple facilities could be constructed simultaneously, the proposed project would be required to comply with SDAPCD Rule 55 which 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 (SDAPCD 2009). Compliance with Rule 55 would reduce construction-related fugitive dust impacts from adversely affecting off-site sensitive receptors.

Moreover, as part of the County's discretionary review process, all Tier Three and Four projects would be evaluated under CEQA and required to implement feasible mitigation measures. Because of the temporary and minimal nature of TAC emissions related to future Tier Three and Tier Four facilities, the proposed project is not expected to result in the exposure of sensitive receptors to substantial pollutant concentrations, and impacts would be **less than significant.**

2.3.3.5 Odors

Guidelines for the Determination of Significance

For the purpose of this EIR, the following significance guideline from the County's Guidelines for Determining Significance: Air Quality (County of San Diego 2007) applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project, which is not an agricultural, commercial, or an industrial activity subject to SDAPCD standards, as a result of implementation will either generate objectionable odors or place sensitive receptors next to existing objectionable odors, which will affect a considerable number of persons or the public.

Analysis

SDAPCD (1969) Rule 51 (Nuisance) prohibits emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of any person. As defined by the SCAQMD, sources of objectionable odors include landfills, agricultural operations, wastewater treatment plants, food processing plants, chemical plants, composting, dairies, and fiberglass molding. Furthermore, objectionable odors could result from projects that emit VOCs, ammonia, CO_2, hydrogen sulfide, CH_4, alcohols, aldehydes, amines, carbonyls, esters, disulfides dust, and endotoxins during construction or operation phases.

Odors associated with the proposed project that could potentially result in a nuisance to surrounding residents would primarily consist of animal waste generated and stockpiled on site at individual equine facilities. Animal waste generated at future equine facilities, when left alone, would naturally undergo anaerobic decomposition as nutrients in the waste are released as gases, creating an odor.

As described in Section 3.1.2, Hydrology and Water Quality, some future equine facilities would require a building permit and would be subject to preparation of a Minor Stormwater Management Plan (SWMP), which includes requirements for construction best management practices (BMPs), Low Impact Development (LIDs), and post-construction BMPs, all of which would also reduce odor impacts associated with animal waste. In addition, boarding of four or more horses would require a Zoning Verification Permit, which will necessitate the preparation of a manure management plan. Examples of BMPs incorporated into a manure management plan include:

- Store manure on an impervious surface, such as concrete, and under a tarp, to prevent runoff during rainfall and leaching of pollutants into the ground. Protection of manure from moisture and rain would prevent manure from running off the property site and preclude odor dissemination when wet.
- Install proper fencing and ensure paddock stabilizing and management for animals to control waste dispersion and associated odors.
- Apply appropriate pasture fertilization to encourage continual grass growth and prevent animal waste runoff during storm events that may carry odors off site.

Tier One and Tier Two

Future Tier One and Tier Two equine facilities that do not require discretionary review may require a building permit and, therefore, some would be subject to preparation of a Minor SWMP, which includes requirements for construction BMPs, LIDs, and post-construction BMPs that would aid in the control of odor dissemination and regular waste cleanup, stockpiling, and disposal. Conformance with these requirements ensures that projects would implement necessary odor-related and erosion control measures. Those facilities that would not require a building

permit would consist of smaller facilities and, therefore, fewer animals on site that would generate animal waste odor impacts. Impacts from these smaller facilities would be considered less than significant. As a result, impacts related to significant odor generation from Tier One and Tier Two equine facilities would be **less than significant**.

Tier Three and Tier Four

These equine facilities would be subject to discretionary review and required to obtain either an Administrative Permit (Tier Three) or an MUP (Tier Four). As part of the County's discretionary review process, all future projects would be evaluated under CEQA and would be required to implement measures to minimize impacts resulting from odors, as necessary. CEQA requires proposed projects to provide detailed information about the potentially significant environmental effects they are likely to have, list ways in which the significant environmental effects would be minimized, and possibly identify alternatives that would reduce or avoid the significant impacts identified for the project. Additionally, conformance with the building permit process, grading ordinance, and Watershed Protection (Stormwater Management and Discharge Control) Ordinance (WPO) including the preparation of a manure management plan, ensures that projects would implement necessary odor-related and erosion control measures. Examples of BMP's as part of a manure management plan are listed above. However, as projects would be evaluated on a project-specific basis, there is no guarantee at this time that impacts would be below a level of significance. Therefore, impacts related to significant odor impacts from Tier Three and Tier Four equine facilities would be **potentially significant (AQ-3)**.

2.3.3.6 Generation of Greenhouse Gas Emissions

Guidelines for the Determination of Significance

For the purpose of this EIR, the following significance guideline from Appendix G of the CEQA Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Analysis

As described in Section 2.3.1, GHGs include CO_2, CH_4, halocarbons, and N_2O, among others. Human-induced GHG emissions are a result of energy production and consumption and personal vehicle use, among other sources. A regional GHG inventory prepared for the San Diego region identified transportation (59%) and energy use (25%) as the largest regional contributors, respectively, to regional GHG emissions (refer to Table 2.3-2).

Although the proposed project would not include heavy-industrial or intensive GHG emitting sources or land uses, future equine facility development could have the potential to result in emissions related to additional vehicle trips. Therefore, future equine facilities may generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. It should be noted that an individual equine facility's GHG emissions will generally not result in direct impacts under CEQA, as the climate change issue is global in nature; however, an individual facility could be found to contribute to a potential cumulatively considerable impact. CEQA Guidelines Section 15130(f) states that an EIR shall analyze GHG emissions resulting from a proposed project when the incremental contribution of those emissions may be cumulatively considerable.

Tier One and Tier Two

Construction Impacts

Construction of Tier One and Tier Two projects would involve erection of structures that would be associated with equine facilities including horse stables, animal enclosures, and pastures, as well as related infrastructure including parking lots, driveways, fences, and buildings. Construction activities would result in minimal GHG emissions from the use of construction equipment (if required), trucks hauling construction material, and worker trips. Construction emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation; however, based on County staff's interviews and observations of existing equine facilities, typical construction of Tier One and Tier Two facilities would not require the extensive use of heavy construction equipment.

Additionally, construction of these facilities would be limited by the useable area on the property, and the appropriate setbacks for these facilities. As Tier One and Tier Two projects are anticipated to require minimal construction activity, and would likely not require heavy construction equipment, these projects would not have an appreciable impact regarding GHG emissions. Therefore, construction of Tier One and Tier Two facilities would be **less than significant**.

Operational Impacts

Vehicular traffic is, however, one source of GHG emissions that could result from Tier One and Tier Two equine facilities. The exact location and number of future Tier One and Tier Two facilities that could result under the proposed project is currently unknown. However, as discussed previously, future Tier One and Tier Two projects would generate minimal traffic.

Additionally, as described in Section 3.2.6, Utilities, Tier One and Tier Two equine uses are not expected to consume substantial amounts of electricity or water that meaningfully affect energy use with respect to GHG emissions. Regarding water supply, some future equine projects would require water service from a water district, while others may need to make a new connection.

Before a future equine facility can connect to a district water system, water district approval must be obtained and the district must ensure that there are adequate water resources and entitlements available to serve the requested water resources before any permit approval is granted. Therefore, GHG emissions related to water consumption would be **less than significant**.

Tier Three and Tier Four

Construction Impacts

GHG emissions would be associated with the construction phase of the representative project through use of construction equipment and vehicle trips. Emissions of CO_2 were estimated using the URBEMIS 2007, Version 9.2.4, land use and air emissions model (Jones & Stokes 2007). For the purposes of modeling, it was assumed that construction of the representative project would commence in 2014. Construction would occur over 2 months. The information contained in Appendix E was utilized as URBEMIS inputs.

Construction equipment defaults provided by URBEMIS were utilized, and equipment mix is meant to represent a reasonably conservative estimate of construction activity. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. Additionally, URBEMIS assumptions were used for worker trips and vendor trips during building construction subphases.

The model results were adjusted to estimate CH_4 and N_2O emissions in addition to CO_2. The CO_2 emissions from off-road equipment and vehicles and delivery trucks, which are assumed by URBEMIS 2007 to be diesel fueled, were adjusted by a factor derived from the relative CO_2, CH_4, and N_2O for diesel fuel as reported in the California Climate Action Registry's (CCAR) General Reporting Protocol (CCAR 2009) for transportation fuels and the GWP for each GHG to estimate the emissions in units of CO_2E. The CO_2 emissions associated with construction worker trips were multiplied by a factor based on the assumption that CO_2 represents 95% of the CO_2E emissions associated with passenger vehicles (EPA 2005). The results were then converted from annual tons per year to metric tons per year. Table 2.3-10, Estimated Construction GHG Emissions, shows the estimated annual GHG construction emissions associated with the proposed project, as well as the amortized annual construction emissions over a 30-year "project life."

Operational Impacts

Primary sources of GHG emissions associated with operation of equine facilities would primarily consist of vehicle trips and electrical use.

Pursuant to the County's Interim Approach to Addressing Climate Change in CEQA Documents, (County of San Diego 2010) a 900-metric-ton screening criteria is used for determining which projects require further analysis and mitigation with regard to climate change. The 900-metric-ton screening threshold is based on a threshold included in the California Air Pollution Control Officers Association (CAPCOA) white paper that covers methods for addressing GHG emissions under CEQA. County staff would evaluate all future Tier Three and Tier Four projects using this screening threshold to determine if the preparation of Climate Change Analysis (CCA) is warranted. If required, a CCA would include a detailed accounting of project-specific construction and operational GHG emissions totals. The GHG inventory must include justification and references to the extent practical to document the assumptions that are made about the emissions calculations. The CCA would assess site-specific conditions and would require projects to apply the maximum feasible mitigation, as necessary.

The actual locations and actions of future projects are unknown at this time; therefore, the actual GHG emissions for future Tier Three and Tier Four facilities can only be estimated. However, in order to determine if a future Tier Three or Tier Four project would have the potential to exceed screening-level criteria, an evaluation of a single representative project was conducted, as described in Section 2.3.3.2. GHG emissions would result primarily from vehicular traffic, landscaping and electricity usage; however, electricity usage would likely be limited to minimal lighting for storage facilities and horse stables. As electricity usage is anticipated to be minimal and would not contribute an appreciable amount of GHG emissions during operation, emissions from electricity were not quantified.

According to the proposed project's traffic report (Appendix F), a single representative Tier Three or Tier Four project would generate 44 trips. Annual CO_2 emissions from motor vehicle trips for the representative facility were quantified using URBEMIS 2007 (refer to Appendix E for additional details and model assumptions). As described earlier, CH_4 and N_2O emissions were accounted for by multiplying the URBEMIS 2007 CO_2 emissions by a factor based on the assumption that CO_2 represents 95% of the CO_2E emissions associated with passenger vehicles (EPA 2005). Emissions generated from vehicular sources are shown in Table 2.3-11.

As shown in Table 2.3-11, estimated annual GHG emissions for a representative Tier Three or Tier Four facility would be approximately 51 metric tons CO_2E per year. As emissions would be well below the 900-metric-ton screening threshold, impacts regarding GHG emission during representative project operations would be **less than significant**.

As previously discussed, all future Tier Three and Tier Four projects will be subject to discretionary review and required to obtain an Administrative Permit or MUP, respectively. As part of the County's discretionary review process, projects would be evaluated under CEQA and would be required to implement measures to minimize GHG impacts, as necessary. CEQA requires proposed projects to provide detailed information on the potentially significant environmental effects they are likely to have, list ways in which the significant environmental effects would be minimized, possibly identify alternatives that would reduce or avoid the significant impacts identified for the project, and propose mitigation for significant impacts.

Additionally, similar to Tier One and Tier Two equine uses and as described in Section 3.2.6, Utilities, future Tier Three and Tier Four equine uses would not require substantial amounts of electricity and water and would not generate substantial amounts of wastewater and solid waste as to result in a significant impact. Therefore, GHG emissions associated with these utilities would be considered **less than significant**.

2.3.3.7 Conformance to Applicable Plan, Policy, or Regulation

Guidelines for Determination of Significance

For the purpose of this EIR, the following significance guideline from Appendix G of the CEQA Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis. A significant impact would result if:

- The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Analysis

As described previously, AB 32 requires CARB to adopt rules and regulations that would reduce GHG emissions to 1990 levels by 2020. The act required CARB to establish a statewide GHG emissions cap for 2020, based on 1990 emissions by January 1, 2008. In November 2007, CARB released California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit (CARB 2007). In this document, CARB recommends 427 MMT CO_2E as the total statewide aggregated GHG 1990 emissions level and 2020 emissions limit. This limit was approved in December 2007.

Neither the State of California nor the SDAPCD has adopted emission-based thresholds for GHG emissions under CEQA. OPR's Technical Advisory titled CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible

whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008, p. 4). Furthermore, the advisory document indicates in the third bullet item on page 6 that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Therefore, CEQA gives a lead agency the discretion to determine the significance of environmental impacts identified in its CEQA documents. And as discussed, the lead agency or County utilizes a 900-metric-ton screening criteria pursuant to the Interim Approach to Addressing Climate Change in CEQA Documents (County of San Diego 2010).

Tier One and Tier Two

Vehicular traffic from construction and operation of Tier One and Tier Two facilities is one source of GHG emissions. However, traffic generated by the construction of these facilities would be relatively minor (and may not require construction vehicles) based on County staff's interviews and observations of existing equine facilities in the County. Future operation and maintenance activities would be infrequent and would occur for short periods of time, or as needs arise, and may not require vehicle trips. Therefore, Tier One and Tier Two facilities developed under the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, such as AB 32, and impacts would be **less than significant**.

Tier Three and Tier Four

Similar to Tier One and Tier Two facilities, vehicular traffic is one source of GHG emissions that could result from Tier Three and Tier Four facilities. However, while all sources of GHG emissions contribute to some extent to global climate change, the amount of GHG emissions generated by the proposed project will not impede or conflict with the state's ability to achieve the goals of AB 32, as the proposed project would not require a change in land use, or result in a more intense land use involving a substantial increase in VMTs. Additionally, as demonstrated by the representative project previously evaluated, a typical Tier Three/Tier Four project would not exceed the County's screening criteria threshold of 900 metric tons of CO_2E per year. Moreover, all future Tier Three and Tier Four projects will be subject to discretionary review and required to obtain an Administrative Permit or MUP. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and would be required to implement measures to minimize GHG impacts, as necessary. Therefore, Tier Three and Tier Four projects would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs and impacts would be **less than significant**.

2.3.4 Cumulative Impact Analysis

The geographic scope of the cumulative impact analysis for air quality includes the SDAB for reactive air pollutants and the vicinity surrounding the SDAB for non-reactive or less reactive pollutants.

2.3.4.1 Conformance to the SDRAQS and SIP

Cumulative projects located in the San Diego region would have the potential to result in a cumulative impact to SDRAQS and SIP if, in combination, they would be inconsistent with the regional planning documents on which they are based. Projects included in Table 1-5a, Private Project Not Included in the General Plan Update, may propose development beyond what is accounted for in the SDRAQS and SIP, which is based on General Plan projections. For example, the proposed Meadowood development project in Fallbrook proposes to construct 886 new residential units. The project may not be consistent with SANDAG's or the General Plan's projected growth for that area. The Draft EIR for the Meadowood project concludes a significant and unmitigable direct and cumulative impact related to consistency with the SDRAQS and SIP. Additionally, cumulative projects located on tribal lands and federally managed lands would not be subject to the SIP or SDRAQS. Therefore, cumulative projects in the region would have the potential to result in cumulatively considerable impacts associated with air quality plans.

Tier One and Tier Two

As described in Section 2.3.3.1, future Tier One and Tier Two facilities would not generate growth, increase population, or require the alteration of an existing land use designation through amendments to general plans or changes to zoning. Although minor emissions may result from construction activities and operational maintenance vehicle exhaust, these would have no appreciable impact. Therefore, the development of Tier One and Tier Two facilities under the proposed project **would not contribute to a cumulatively considerable impact.**

Tier Three and Tier Four

As described in Section 2.3.3.1, future Tier Three and Tier Four facilities would not conflict with or obstruct the implementation of the SDRAQS or applicable portions of the SIP. Therefore, the development of Tier Three and Tier Four facilities under the proposed project **would not contribute to a cumulatively considerable impact**.

2.3.4.2 Conformance to Federal and State Air Quality Standards

Cumulative projects located in the San Diego region would have the potential to result in a significant cumulative air quality impact if, in combination, they would violate any air quality

standards or contribute substantially to an existing or projected air quality violation. For example, the proposed Jacumba Valley Ranch project, listed in Table 1-5a, proposes the development of 2,125 new residential units in the Mountain Empire Subregion, a relatively undeveloped area of the County. A violation of the CAAQS or NAAQS could result from the emission of criteria pollutants due to increased vehicle trips in this area from the Jacumba Valley Ranch project or other similar residential projects. As described in Section 2.3.3.1, CEQA requires proposed projects to provide detailed information on potentially significant environmental effects, as well as mitigation measures, as necessary. However, some environmental impacts associated with the development of such projects may be significant and unavoidable. Therefore, cumulative projects in the region would have the potential to result in cumulatively considerable impacts associated with air quality violations.

Tier One and Tier Two

As described in Section 2.3.3.2, future Tier One and Tier Two facilities are not expected to result in the exceedance of any federal or state air quality standards. Therefore, Tier One and Tier Two facilities developed under the proposed project **would not contribute to a cumulatively considerable impact associated with air quality violations**.

Tier Three and Tier Four

As described in Section 2.3.3.2, future Tier Three and Tier Four facilities are not expected to violate any air quality standards or contribute substantially to an existing or projected air quality violation. Compliance with the County Grading Ordinance would ensure dust control measures are provided to reduce CO, PM_{10}, and $PM_{2.5}$ emissions that may result during construction. However, there is ultimately no guarantee that mitigation measures for all future Tier Three and Tier Four projects will reduce impacts to a level below significant. Therefore, the proposed project **would potentially contribute to a cumulatively considerable impact** associated with air quality violations **(AQ-4).**

2.3.4.3 Nonattainment Criteria Pollutants

Cumulative projects located in the San Diego region would have the potential to result in a cumulatively considerable impact associated with nonattainment criteria pollutants if, in combination, they would result in a net increase of any criteria pollutant for which the SDAB is nonattainment. The SDAB is presently in nonattainment status for the NAAQS (O_3) and CAAQS (O_3, PM_{10}, and $PM_{2.5}$). Cumulative projects would have the potential to result in new sources of particulate matter from construction activities, as well as increased emissions of O_3 precursors from increased vehicle trips. As described in Section 2.3.4.2, the Jacumba Valley Ranch project proposes 2,100 new residential units in the Mountain Empire, which would increase vehicle trips

on County roads, thereby increasing emissions of O_3 precursors. As described in Section 2.3.3.1, CEQA requires proposed projects to provide detailed information on potentially significant environmental effects, as well as mitigation measures, as necessary. However, some environmental impacts associated with the development of such projects may be significant and unavoidable. Therefore, cumulative projects in the region would have the potential to result in cumulatively considerable impacts associated with nonattainment criteria pollutants.

Tier One and Tier Two

As described in Section 2.3.3.3, the emissions associated with Tier One and Tier Two facilities is anticipated to be minimal and would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for O_3 precursors). Therefore, Tier One and Tier Two facilities developed under the proposed project **would not contribute to a cumulatively considerable impact** associated with nonattainment criteria pollutants.

Tier Three and Tier Four

As described in Section 2.3.3.3, some future Tier Three and Tier Four facilities are expected to result in a cumulative net increase of criteria pollutants for which the project region is nonattainment under applicable federal or state ambient air quality standards. Compliance with the County Grading Ordinance would ensure dust control measures are provided to reduce criteria pollutants such as PM10 and PM2.5 emissions that may result during construction. However, there is ultimately no guarantee that mitigation measures for all future Tier Three and Tier Four projects will reduce impacts to a level below significant. Therefore, the proposed project would potentially contribute to a cumulatively considerable impact associated with nonattainment criteria pollutants (**AQ-5**).

2.3.4.4 Sensitive Receptors

Cumulative projects located in the San Diego region would have the potential to result in a cumulatively considerable impact associated with sensitive receptors if, in combination, they would expose sensitive receptors to a substantial concentration of TACs or HAPs that would significantly increase cancer risk. As described in Section 2.3.3.4, the risks are especially attributable to emissions from diesel particulate matter from truck trips. The construction of cumulative projects would result in a temporary increase in truck trips related to hauling construction materials to and from a project site. Increases in truck trips may also result from new industrial or commercial development due to project operation. For example, the retail shops proposed on the Pauma and Yuima Reservation, listed as a cumulative project in Table 1-

5b, Proposed Projects on Tribal Lands, would increase truck trips to and from the area to transport retail merchandise. Placement of new sensitive receptors near existing TAC or HAP emissions may also have the potential to result in a cumulatively considerable impact. Residential development projects that are proposed to be located in close proximity to industrial or extractive land uses may result in these impacts. Cumulative projects located in adjacent jurisdictions, including incorporated cities, adjacent counties, and state-managed lands, would be required to comply with the CARB's recommendations for siting new sensitive receptors in the SDAB and would be required to comply with emissions thresholds for TACs and HAPs. However, some cumulative projects located outside of the SDAB, such as on tribal land, may not be subject to these regulations. Therefore, cumulative projects in the region may result in cumulatively considerable impacts associated with sensitive receptors.

Tier One and Tier Two

As described in Section 2.3.3.4, Tier One and Tier Two facilities are not anticipated to result in TACs near sensitive receptors. The amount of construction vehicle trips generated by future Tier One and Tier Two facilities is anticipated to be minimal and short term. In addition, the maintenance trips would be sporadic and would not result in any permanent increases in vehicle trips that would contribute to long-term exhaust emissions resulting in substantial pollutant concentrations. Therefore, Tier One and Tier Two facilities developed under the proposed project **would not contribute to a cumulatively considerable impact** associated with sensitive receptors.

Tier Three and Tier Four

As described in Section 2.3.3.4, future Tier Three and Tier Four facilities are not expected to expose sensitive receptors to substantial pollutants. Tier Three and Tier Four projects would be subject to CEQA and required to comply with AB 2588, SDAPCD Rule 1210, and CARB standards for diesel engines. Additionally, the amount of construction vehicle trips generated by future Tier Three and Tier Four facilities would not contribute to long-term exhaust emissions resulting in substantial pollutant concentrations. Therefore, Tier Three and Tier Four facilities developed pursuant to the proposed project **would not contribute to a cumulatively considerable impact** associated with sensitive receptors.

2.3.4.5 Odors

Cumulative projects located in the San Diego region would have the potential to result in a cumulatively considerable impact associated with objectionable odors or, in combination, would create objectionable odors or place sensitive receptors next to existing objectionable odors. One example from the cumulative list of projects is Ramona Ridge Estates, included in Table 1-5a. The Ramona Ridge Estates project is a residential development that would be located in the

Ramona community planning area, near the Ramona Landfill which is a source of objectionable odors. The Ramona Landfill is required to comply with SDAPCD Rule 51, which prohibits objectionable odors from a landfill that would impact off-site uses; therefore, odor impacts to the Ramona Ridge Estates project would not occur. However, some projects located outside of the SDAB, such as those within tribal lands, may not be subject to SDAPCD Rule 51 or a similar regulation. Therefore, cumulative projects in the region may result in cumulatively considerable impacts associated with objectionable odors.

Tier One and Tier Two

Future Tier One and Tier Two equine facilities that do not require discretionary review would still require a building permit and, therefore, would be subject to preparation of a Minor SWMP, which includes requirements for construction BMPs, LIDs, and post-construction BMPs that would aid in the control of odor dissemination and regular waste cleanup, stockpiling, and disposal. Conformance with these requirements ensures that projects would implement necessary odor-related and erosion control measures. Therefore, Tier One and Tier Two facilities developed under the proposed project **would not contribute to a cumulatively considerable impact** associated with odors.

Tier Three and Tier Four

Future equine facilities would be subject to discretionary review and required to obtain an Administrative Permit for equine uses under Tier Three and an MUP for equine uses under Tier Four. As part of the County's discretionary review process, all future projects would be evaluated under CEQA and would be required to implement measures to minimize impacts resulting from odors, as necessary. CEQA requires proposed projects to provide detailed information about the potentially significant environmental effects they are likely to have, list ways in which the significant environmental effects would be minimized, possibly identify alternatives that would reduce or avoid the significant impacts identified for the project, and propose mitigation for significant impacts. Additionally, conformance with the building permit process, grading ordinance, and WPO including the preparation of a manure management plan, ensures that projects would implement necessary odor-related and erosion control measures. However, there is ultimately no guarantee that impacts for all future Tier Three and Tier Four projects would be reduced to a level below significant. Therefore, Tier Three and Tier Four facilities developed under the proposed project **would potentially contribute to a cumulatively considerable impact** (**AQ-6**) associated with odors.

2.3.4.6 Generation of Greenhouse Gas Emissions

GHG emissions are said to result in an increase in the earth's average surface temperature, commonly referred to as global climate change. Global climate change, by definition, is cumulative as it is the result of combined worldwide contributions of GHG to the atmosphere over many years. Therefore, impacts associated with the proposed project discussed previously also serve as the proposed project's cumulative impact analysis.

2.3.4.7 Conformance to Applicable Plan, Policy, or Regulation

Global climate change, by definition, is a cumulative impact issue as it is the result of combined worldwide contributions of GHG to the atmosphere over many years. Therefore, impacts associated with the proposed project discussed previously also serve as the proposed project's cumulative impact analysis.

Additionally, as stated in Section 2.3.1, the County prepared a Climate Change Action Plan that includes a baseline inventory of GHG emissions for all sources and more detailed GHG emissions reductions targets and deadlines. The Climate Change Action Plan would achieve a 17% reduction in GHG emissions from 2006 by 2020, and a 9% reduction in community emissions from 2006 by 2020. Implementation of this Climate Change Action Plan will contribute to meeting the AB 32 goals, in addition to state regulatory requirements described above. As a result of the proposed project and the County's Climate Change Action Plan, impacts related to the generation of GHG emissions on a cumulative level would be **less than significant**.

2.3.5 Significance of Impacts Prior to Mitigation

The proposed project would result in potentially significant impacts associated with conformance to federal and state air quality standards (**AQ-1** and **AQ-4**), nonattainment criteria pollutants (**AQ-2** and **AQ-5**), and generation of objectionable odors (**AQ-3** and **AQ-6**) due to the development of Tier Three and Tier Four projects. The proposed project would not result in potentially significant impacts relative to conformance with the SDRAQS and SIP, sensitive receptors, generation of GHG emissions, or conformance to applicable GHG plans or policies due to the development of Tier Three and Tier Four projects. There are no potentially significant air quality or GHG impacts associated with the development of Tier One and Tier Two facilities.

2.3.6 Mitigation Measures

There are no potentially significant air quality impacts associated with the development of Tier One and Tier Two facilities. Therefore, the following discussion only pertains to the development of Tier Three and Tier Four facilities under the proposed project.

2.3.6.1 Conformance to the SDRAQS and SIP

The proposed project would not conflict with or obstruct the implementation of the SDRAQS and SIP; therefore, no mitigation measures are required.

2.3.6.2 Conformance to Federal and State Air Quality Standards

The proposed project would allow for the development of Tier Three and Tier Four projects that could potentially exceed screening-level thresholds (**AQ-1** and **AQ-4**). A mitigation measure (described below) has been identified that would reduce impacts to air quality standards, but not below a significant level.

Mitigation Measure

M AQ-1: During the environmental review process for future discretionary permits for Tier Three and Tier Four projects, the County Guidelines for Determining Significance for Air Quality shall be applied. When impacts are determined to be significant, feasible and appropriate project-specific mitigation measures shall be incorporated. Examples of standard mitigation measures within the County Guidelines include: dust control efforts, grading or fuel use restrictions, use of modified equipment, and restrictions on vehicle idling time.

Infeasible Mitigation Measures

The following measures were considered in attempting to reduce direct and cumulative impacts to air quality standards to below a level of significance. However, the County has determined that these measures would be infeasible, as described below. Therefore, the following mitigation measures would not be implemented.

- Require all construction activities to use equipment that is CARB-certified Tier Three or better. This measure could not be accomplished because it would require all construction contractors working within the County to turn over their existing equipment that remains usable, and it would require a more stringent emissions standard than implemented by CARB. CARB is implementing regulations that require turnover of equipment to meet its regulatory standards for large vehicle fleets. The measure would limit which construction contractors would be allowed to work within the County and could result in undue costs to project applicants.

Because the measures listed above are infeasible, impacts would remain potentially significant and unavoidable. Chapter 4, Project Alternatives, provides a discussion of alternatives to the proposed project that would result in some reduced impacts associated with air quality as compared to the proposed project. It should also be noted that future Tier Three and Tier Four projects may be able to mitigate emissions associated with their individual development.

2.3.6.3 Nonattainment Criteria Pollutants

The proposed project would allow for the development of Tier Three and Tier Four projects that could potentially result in a cumulatively considerable impact relative to nonattainment criteria pollutants (**AQ-2** and **AQ-5**). Mitigation Measure AQ-1 described in Section 2.6.3.2 has been identified that would reduce impacts to air quality standards, but not below a significant level.

2.3.6.4 Sensitive Receptors

The proposed project would not result in any significant impacts associated with sensitive receptors, and no mitigation measures are required.

2.3.6.5 Odors

The proposed project would allow for the development of Tier Three and Tier Four projects that could potentially result in odor impacts (**AQ-3** and **AQ-6**). Mitigation measures (described below) have been identified that would reduce impacts related to odors; however, impacts would remain potentially significant.

Mitigation Measures

M AQ-2: The following mitigation measures shall be implemented regarding manure control and storage:

- Regardless of equine facility Tier category designation, all locations where horses are boarded shall clean horse stalls at least once per day including the removal of animal waste and soiled bedding.
- Animal waste shall be stockpiled in an enclosed, covered containment vessel to ensure anaerobic off-gassing and associated odor generation is minimized. The containment vessel shall protect animal waste stockpiles from heavy weather conditions, including wind and rain which may cause siltation and accelerate anaerobic decomposition of the waste.
- If a project site is located in close proximity to residents and/or sensitive receptors, containment vessels storing animal waste shall be located at the furthest feasible distance from nearby residents and/or sensitive receptors.
- Require all equine facilities of any Tier category to ensure horse stalls are washed and cleaned twice per day, including removal of all animal waste and soiled bedding.
- Prohibit the stockpiling of animal waste on site to ensure residents and/or sensitive receptors in close proximity to the individual site are not impacted by odors generated during anaerobic decomposition of stockpiled waste.

As it cannot be concluded at this stage that impacts related to odors from all equine facilities allowed by the proposed Zoning Ordinance Amendment would be avoided or mitigated, impacts would remain significant and unavoidable.

2.3.6.6 Generation of Greenhouse Gas Emissions

The proposed project would not result in any significant impacts associated with generation of GHG emissions, and no mitigation measures are required.

2.3.6.7 Conformance to Applicable GHG Plan, Policy, or Regulation

The proposed project would not result in any significant impacts associated with conformance with a GHG plan, policy, or regulation, and no mitigation measures are required.

2.3.7 Conclusion

The following discussion provides a synopsis of the conclusion reached in each of the above impact analyses, and the level of impact that would occur after mitigation measures are implemented.

Conformance to the SDRAQS and SIP

The proposed project would not conflict or obstruct the implementation of the SDRAQS and SIP, and therefore would not result in any potential significant impacts.

Conformance to Federal and State Air Quality Standards

Development of Tier One and Tier Two facilities pursuant to the proposed Zoning Ordinance Amendment would not exceed screening-level thresholds and would not conflict with or obstruct the implementation of federal and state air quality standards. Therefore, impacts would be less than significant. Development of Tier Three and Tier Four facilities pursuant to the proposed Zoning Ordinance amendment would potentially exceed screening-level thresholds and therefore would potentially conflict with or obstruct the implementation of federal and state air quality standards (**AQ-1** and **AQ-4**). Impacts would remain potentially significant and unavoidable. Future Tier Three and Tier Four projects may be able to mitigate emissions to a level below significant on an individual basis, although it cannot be guaranteed.

Nonattainment Criteria Pollutants

Development of Tier One and Tier Two facilities pursuant to the proposed Zoning Ordinance Amendment would not result in significant impacts associated with nonattainment criteria pollutants. Development of Tier Three and Tier Four facilities pursuant to the proposed Zoning Ordinance Amendment would potentially result in direct/cumulative impacts associated with

nonattainment criteria pollutants (**AQ-2** and **AQ-5**). Impacts would remain potentially significant and unavoidable. Future Tier Three and Tier Four projects may be able to mitigate emissions to a level below significant on an individual basis, although it cannot be guaranteed.

Sensitive Receptors

The proposed project would not result in significant impacts associated with sensitive receptors.

Odors

Development of Tier One and Tier Two facilities pursuant to the proposed Zoning Ordinance Amendment would not result in significant odor impacts. Development of Tier Three and Tier Four projects could potentially result in odor impacts (**AQ-3** and **AQ-6**). Implementation of mitigation measure (**M AQ-2**) may be able to reduce impacts to below a significant level on an individual basis, although it cannot be guaranteed.

Generation of Greenhouse Gas Emissions

The proposed project would not result in significant impacts associated with the generation of GHG emissions.

Conformance to Applicable GHG Plan, Policy, or Regulation

The proposed project would not conflict with or obstruct the implementation of a GHG plan, policy, or regulation, and therefore would not result in any potential significant impacts.

Table 2.3-1
GHG Sources in California

Source Category	Annual GHG Emissions (MMT CO2E)	% of Total
Agriculture	32.13	7.03%
Commercial and residential	42.95	9.40%
Electricity generation	103.58a	22.68%
Forestry (excluding sinks)	0.19	0.04%
Industrial uses	81.36	17.81%
Recycling and waste	7.32	1.60%
Transportation	172.92	37.86%
High-GWP substances	16.32	3.57%
Totals	456.77	100.00%

Source: CARB 2011.
Notes: [a] Includes emissions associated with imported electricity, which account for 48.05 MMT CO_2E annually.

Table 2.3-2
GHG Sources in San Diego County

Source Category	Annual GHG Emissions (MMT CO2E)	% of Total
Transportation	2.64	59%
Agriculture	0.19	4%
Solid Waste	0.14	3%
Wastewater	0.05	1%
Potable Water	0.24	5%
Other	0.13	3%
Energy	1.12	25%
Totals	4.51	100.00%

Source: County of San Diego 2012.

Table 2.3-3
Ambient Air Quality Standards

Pollutant	Average Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary*[3, 4]	*Secondary*[3, 5]
O_3	1 hour	0.09 ppm (180 μg/m^3)	—	Same as Primary Standard
	8 hour	0.070 ppm (137 μg/m^3)	0.075 ppm (147 μg/m^3)	
CO	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
NO_2	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	Same as Primary Standard
	1 hour	0.18 ppm (339 μg/m^3)	0.100 ppm (188 μg/m^3)	
SO_2	1 hour	0.25 ppm (655 μg/m^3)	0.75 ppm (196 μg/m^3)	—
	3 hours	—	—	0.5 ppm (1300 μg/m^3)
	24 hours	0.04 ppm (105 μg/m^3)	0.14 ppm (for certain areas)[7]	—
	Annual	—	0.030 ppm (for certain areas)[7]	—
PM_{10}	24 hours	50 μg/m^3	150 μg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m^3	—	
$PM_{2.5}$	24 hours	No Separate State Standard	35 μg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m^3	15.0 μg/m^3	
Lead[6]	30-day Average	1.5 μg/m^3	—	—
	Calendar Quarter	—	1.5 μg/m^3 (for certain areas)[7]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m^3	
Hydrogen sulfide	1-hour	0.03 ppm	—	—
Vinyl chloride[6]	24-hour	0.01 ppm	—	—

Table 2.3-3
Ambient Air Quality Standards

Pollutant	Average Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary*[3, 4]	*Secondary*[3, 5]
Sulfates	24-hour	25 µg/m3	—	—
Visibility reducing particles	8-hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	—	—

ppm= parts per million by volume µg/m^3 = micrograms per cubic meter mg/m^3= milligrams per cubic meter

Source: CARB 2012b.

1 California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For NO_2 and SO_2, the standard is attained when the 3-year average of the 98th and 99th percentile, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr.
Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

5 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

6 CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

7 The 1971 SO_2 national standards (24-hour and annual) and 1978 lead national standard (quarterly) remain in effect until 1 year after an area is designated for the 2010 and 2008 standards, respectively.

Table 2.3-4
SDAB Attainment Classification

Pollutant	Federal Designation[a]	State Designation[b]
O_3 (1 hour)	Attainment*	Nonattainment
O_3 (8-hour – 1997) (8-hour – 2008)	Nonattainment (Moderate) Nonattainment (Marginal)	Nonattainment
CO	Attainment (Maintenance Area)	Attainment
PM_{10}	Unclassifiable**	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(no federal standard)	Attainment
Hydrogen Sulfide	(no federal standard)	Unclassified
Visibility	(no federal standard)	Unclassified

Sources: [a]EPA 2012c; [b]CARB 2011.

* The federal 1-hour standard of 0.12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans (SIPs).

** At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

Table 2.3-5
Ambient Air Quality Data
(ppm unless otherwise indicated)

Pollutant	Averaging Time	2008	2009	2010	2011	Most Stringent Ambient Air Quality Standard	Monitoring Station
O_3	8-hour	0.110	0.098	0.088	0.093	0.070	Alpine – Victoria Drive
	1-hour	0.139	0.119	0.105	0.114	0.090	
PM_{10}	Annual	27.3 µg/m³	25.3 µg/m³	21.3 µg/m³	23.7 µg/m³	20 µg/m³	El Cajon – Redwood Avenue
	24-hour	41.4 µg/m³	57.0 µg/m³	42.0 µg/m³	41.9 µg/m³	50 µg/m³	
$PM_{2.5}$	Annual[1]	14.0 µg/m³	12.2 µg/m³	10.8 µg/m³	10.6 µg/m³	12 µg/m³	Alpine – Victoria Drive
	24-hour	37.3 µg/m³	29.7 µg/m³	23.4 µg/m³	25.5 µg/m³	35 µg/m³	
NO_2	Annual	0.008	0.008	0.007	0.006	0.030	Alpine – Victoria Drive
	1-hour	0.047	0.056	0.052	0.040	0.180	
CO	8-hour[2]	1.87	1.43	1.56	1.46	9.0	Chula Vista
	1-hour*	3.0	2.0	2.0	1.7	20	
SO_2	Annual	0.002	0.002	0.001	0.002	0.030	Chula Vista
	24-hour	0.004	0.003	0.002	NA	0.040	

Source: CARB 2012c; EPA 2012d
Data represent maximum values
Notes: A new 1-hour NAAQS for NO_2 became effective in April 2010. Data reflect compliance with the 1-hour CAAQS.
* Data were taken from EPA 2012d.
1 2009, 2010, and 2011 data were taken from El Cajon – Redwood Avenue monitoring station
2 2011 data were taken from El Cajon – Redwood Avenue monitoring station.

Table 2.3-6
Frequency of Air Quality Standard Violations

Monitoring Site	Year	Number of Days Exceeding Standard				
		State 1-Hour O_3	*State 8-Hour O_3*	*National 8-Hour O_3*	*State 24-hour PM_{10}**	*National 24-hour $PM_{2.5}$**
Alpine – Victoria Drive	2008	13	61	31	—	—
	2009	6	43	22	—	—
	2010	4	20	12	—	—
	2011	4	30	10	—	—
El Cajon – Redwood Avenue	2008	—	—	—	—	—
	2009	—	—	—	6.0 (1)	3.0 (1)
	2010	—	—	—	—	—
	2011	—	—	—	—	1.0 (1)

Source: CARB 2012c.
* Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and 3 days, respectively. "Number of days exceeding the standards" is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

Table 2.3-7
San Diego Air Pollution Control District Air Quality Significance Thresholds

Construction Emissions			
Pollutant	*Total Emissions (Pounds per Day)*		
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_x)	250		
Oxides of Sulfur (SO_x)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOC)	75*		
Operational Emissions			
Pollutant	*Total Emissions*		
	Pounds per Hour	*Pounds per Day*	*Pounds per Year*
Respirable Particulate Matter (PM_{10})	—	100	15
Fine Particulate Matter ($PM_{2.5}$)	—	55	10
Oxides of Nitrogen (NO_x)	25	250	40
Sulfur Oxides (SO_x)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	—	3.2	0.6
Volatile Organic Compounds (VOC)	—	75*	13.7

Source: SDAPCD Rules 1501 and 20.2(d)(2)
* VOC threshold based on the threshold of significance for VOCs from the SCAQMD for the Coachella Valley as stated in the San Diego County Guidelines for Determining Significance.

Table 2.3-8
Estimated Maximum Daily Construction Emissions (pounds/day)

	VOC*	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$*
Proposed Project Emissions						
2014	20.24	19.14	11.89	0.00	12.21	3.18
Maximum Daily Emissions	20.24	19.14	11.89	0.00	12.21	3.18
Pollutant Threshold	75	250	550	250	100	55
Threshold Exceeded?	No	No	No	No	No	No

Source: URBEMIS 2007 Version 9.2.4. See Appendix E for complete results.
* Thresholds for VOC and $PM_{2.5}$ obtained from SCAQMD as directed in the County Guidelines for Determining Significance (County of San Diego 2007).

Table 2.3-9
Estimated Daily Maximum Operational Emissions
(pounds/day)

Emission Source	VOC*	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$*
Summer						
Motor Vehicles	0.26	0.28	2.50	0.00	0.51	0.10
Area Sources	0.17	0.02	1.55	0.00	0.01	0.01
Total	0.43	0.3	4.05	0.00	0.52	0.11
Emission Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	No	No	No	No	No
Winter						
Motor Vehicles	0.24	0.41	2.75	0.00	0.51	0.10
Area Sources	0.5	0.00	0.00	0.00	0.00	0.00
Total	0.29	0.41	2.75	0.00	0.51	0.10
Emission Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Source: URBEMIS 2007 Version 9.2.4. See Appendix E for complete results.
* Thresholds for ROG and $PM_{2.5}$ obtained from SCAQMD as directed in the County Guidelines for Determining Significance (County of San Diego 2007).

Table 2.3-10
Estimated Construction GHG Emissions (metric tons CO_2E/year)

Construction Year	GHG Emissions
2014	30.43
Amortized Annual Construction Emissions	1.01

Source: URBEMIS 2007 Version 9.2.4. See Appendix E for complete results.

Table 2.3-11
Estimated Operational GHG Emissions (metric tons CO_2E/year)

Emission Source	CO2	MTCO2E
Motor Vehicles	52.06	49.71
Landscaping	0.25	0.25
Amortized Annual Construction Emissions	—	1.01
Total	52.31	50.97

Source: See Appendix E for complete results.

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