AIR QUALITY IMPACT REPORT

SUNSET RIDGE PARK PROJECT, NEWPORT BEACH, CALIFORNIA

Prepared for

City of Newport Beach
330 Newport Boulevard
Newport Beach, California 92663
Janet Johnson Brown, Associate Planner

Prepared by

BonTerra Consulting
151 Kalmus Drive, Suite E-200
Costa Mesa, California 92626
James P. Kurtz
T: (714) 444-9199 F: (714) 444-9599

October 21, 2009

TABLE OF CONTENTS

Section Page

TABLE OF CONTENTS
(Continued)

Section Page

TABLES

EXHIBITS

APPENDICES

SECTION 1.0 INTRODUCTION

1.1 INTRODUCTION

This Air Quality Impact Analysis has been prepared to analyze the regional and localized air quality impacts from construction and operation of the proposed Sunset Ridge Park Project (hereafter referred to as "the Project") in accordance with the requirements of the California Environmental Quality Act (CEQA). Mitigation measures have been recommended to reduce air quality impacts to the extent feasible and practicable. This information has been reported in accordance with accepted technical standards consistent with the requirements of the South Coast Air Quality Management District (SCAQMD).

The impacts of the Project on global climate change are included in this analysis. A climate change analysis is not required by CEQA. However, addressing climate change and greenhouse gas (GHG) emissions in CEQA documents has been strongly encouraged by State and regional agencies since 2008, and proposed revisions to CEQA, currently undergoing public review, would require this analysis.

SECTION 2.0 PROJECT DESCRIPTION

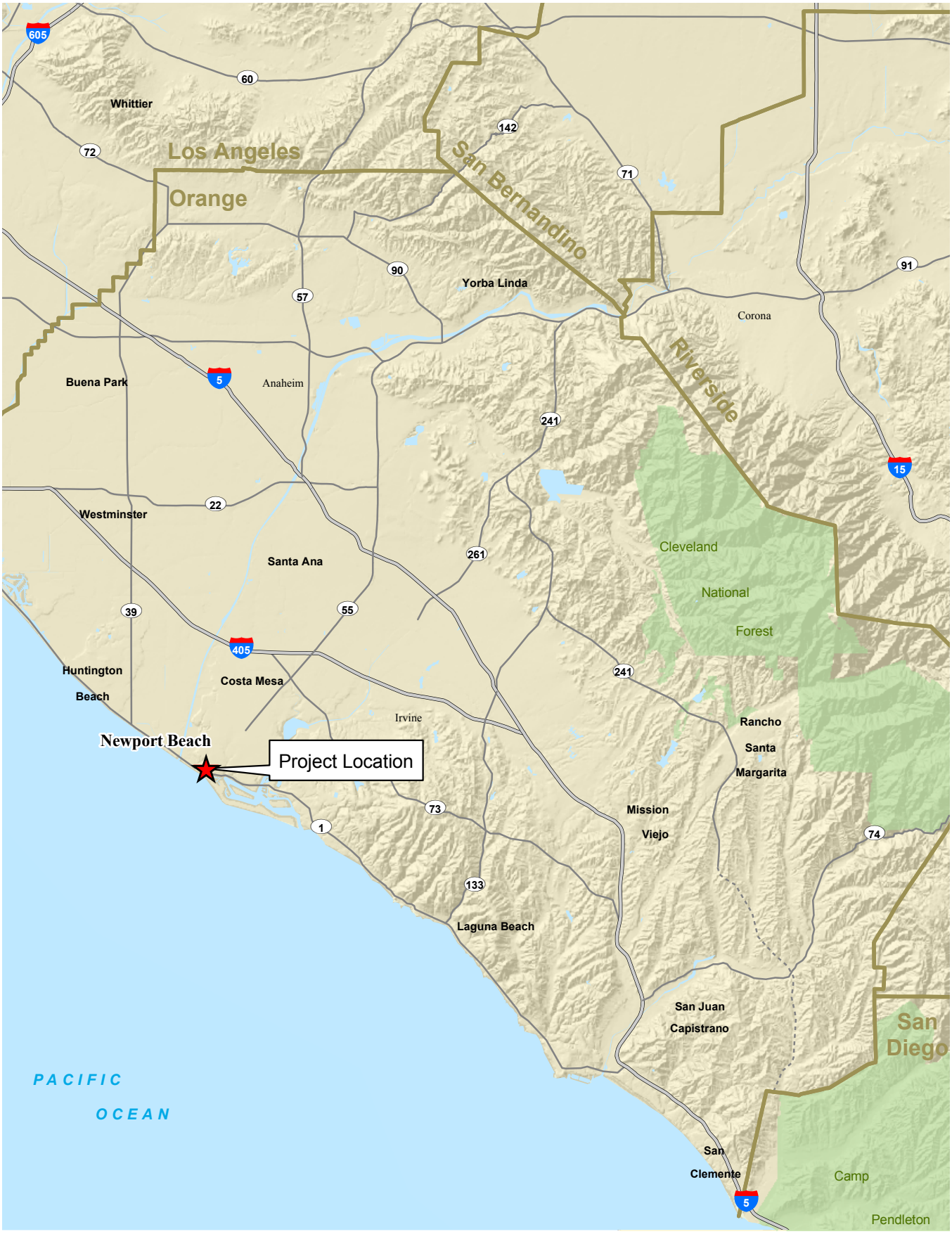
2.1 PROJECT LOCATION

The 18.9-acre Project site is located on the northwestern corner of West Coast Highway at Superior Avenue in the City of Newport Beach (City) in Orange County (County), California. Approximately 13.7 acres of the site are located within the City and approximately 5.2 acres are within an unincorporated area of the County, but within the City's Sphere of Influence. The site is bound by residential uses to the north, Superior Avenue to the east, West Coast Highway to the south, and existing oil field operations and undeveloped open space (Newport Banning Ranch) to the west. The regional location and local vicinity of the Project site are depicted on Exhibits 1 and 2, respectively.

2.2 PROPOSED PROJECT

The City proposes to develop the approximate 18.9-acre site with the active and passive recreational uses listed below. An access road would be constructed from West Coast Highway to Sunset Ridge Park through the Newport Banning Ranch portion of the site leading to a parking area. There would be off-site improvements to West Coast Highway. Exhibit 3 depicts the Project's Conceptual Site Plan. No nighttime lighting is proposed, other than for public safety. Components of the proposed park Project would include the following uses and facilities:

- A baseball field, which would be located in the northwestern portion of the park site.
- Two youth soccer fields would be provided in the center of the park area. One soccer field would be located to the east of the baseball field; the second soccer field would be to the south of the baseball field.
- A playground area is proposed on the western portion of the park site directly south of the parking area and southwest of the baseball field. The playground area would include recreational amenities such as a tot lot.
- A picnic area would be located to the east of the playground and would include shade structures, picnic tables, and seating areas.



D:/Projects/Newport/J016/ex_RL_EIR.mx

Regional Location

Exhibit 1

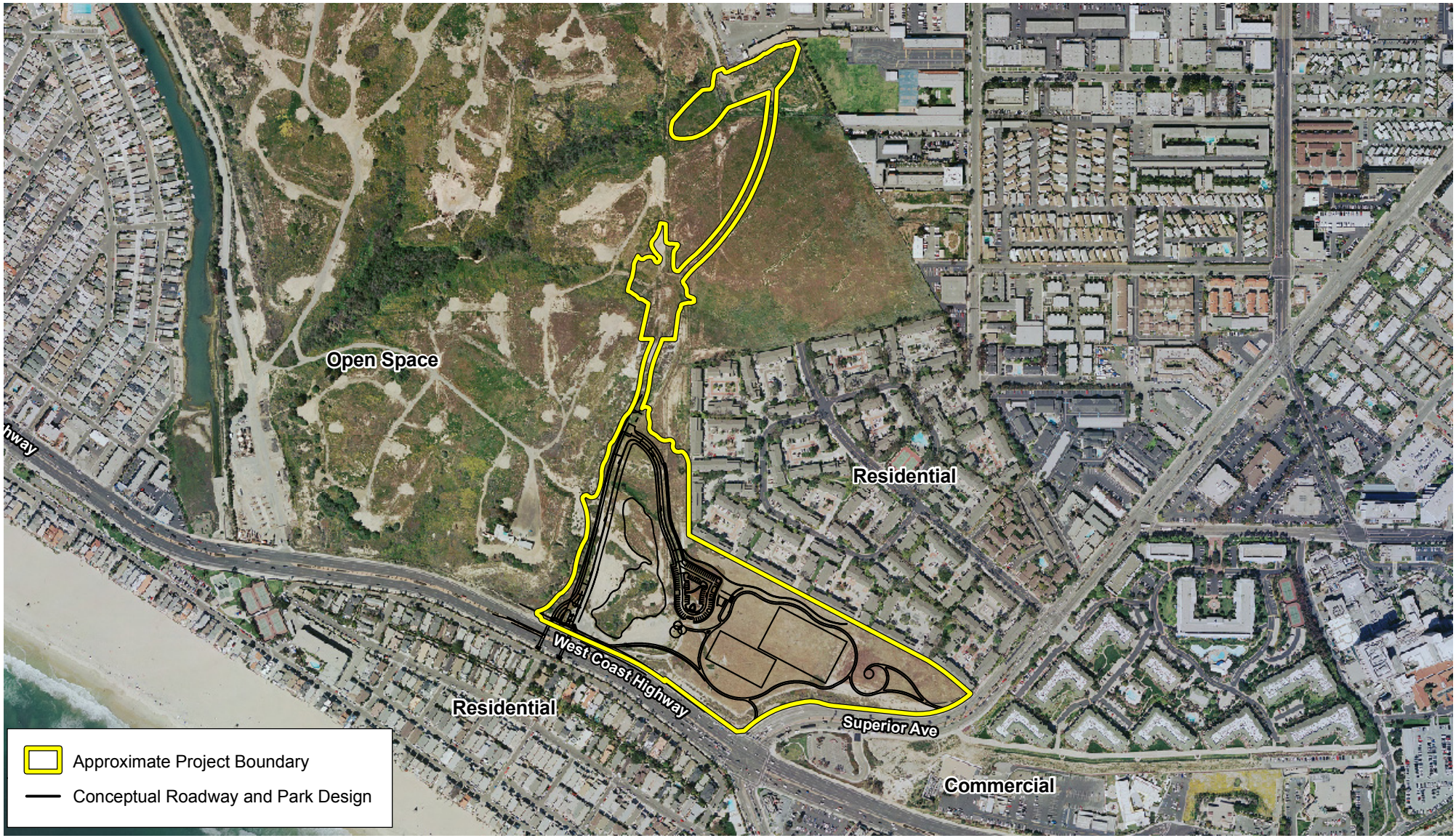
Sunset Ridge Park Air Quality Impact Analysis

N W E S

5 2.5 0 5 Miles

BonTerra CONSULTING

(REV: JFG 09-19-09) Projects/Newport/J016/Graphics/AQ_Rpt/Ex1_RL.pdf



D:\Projects\Newport\J016\Ex_EIR_aerial.mxd

Local Vicinity

Exhibit 2

Sunset Ridge Park Air Quality Impact Analysis

N W E S

600 300 0 600 Feet

BonTerra CONSULTING

(REV: JFG 09-19-09) Projects\Newport\J016\Graphics\AQ_Rpt\ex2_LV.pdf

Source: EPT Design

Conceptual Site Plan

Exhibit 3

Sunset Ridge Park Air Quality Impact Analysis

BonTerra CONSULTING

(Rev 09/24/09 CJS) Projects/Newport/J016/Graphics/AQ_Rpt/Ex3_eir_conceptualSP.pdf

D:/Projects/Newport/J016Graphics/ex_EIR_coetpualSP.ai

- A memorial garden would be included as a passive park area located on the upper plateau, on the eastern portion of the park site.

- An overlook area with a shade structure and seating would be located directly west of the memorial garden.

- Restroom facilities would be located in the western portion of the Project site between the parking area and the ball fields

A retaining wall would be located to the north of the active park uses and conceptually extends from the parking area in the west to the end of the soccer field in the east. A landscaped berm would be constructed north of the retaining wall and would extend to the northern property line at the south of the Newport Crest condominiums. As part of the proposed Project, the existing wall along Superior Avenue would be removed and replaced with a natural slope.

2.3 CONSTRUCTION ACTIVITIES/PHASING

Construction of the proposed Project is planned to occur in a single construction phase between 16 to 18 months. The park is anticipated to be operational in March 2012. Approximately 130,000 cubic yards (cy) of cut and 96,000 cy of fill would be required during grading activities, with a net export of approximately 34,000 cy. The City proposes that all of the soil would be exported to the adjacent Newport Banning Ranch property.

SECTION 3.0 AIR POLLUTANTS

3.1 CRITERIA POLLUTANTS

Criteria Pollutants

Air quality regulations were first promulgated with the Federal Clean Air Act (FCAA) of 1970. Air quality is defined by ambient air concentrations of seven "criteria air pollutants", which are a group of common air pollutants identified by the U.S. Environmental Protection Agency (USEPA) to be of concern with respect to the health and welfare of the general public. Federal and State governments regulate criteria air pollutants by using ambient standards based on criteria regarding the health and/or environmental effects of each pollutant. These pollutants include nitrogen dioxide (NO_2), ozone (O_3), particulate matter (including both PM10 and PM2.5), carbon monoxide (CO), sulfur dioxide (SO_2), and lead.

Nitrogen Dioxide

Nitrogen gas, normally relatively inert (nonreactive), comprises about 80 percent of the air. At high temperatures (e.g., in a combustion process) and under certain other conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitrogen oxides (NOx). Nitric oxide (NO), nitrogen dioxide (NO_2), and nitrous oxide (N_2O) are important constituents of NOx. NO is converted to NO_2 in the atmosphere. While the NAAQS only address NO_2, NO and NO_2 are both precursors in the formation of O_3 and PM2.5, as discussed below. Because of this and the fact that NO emissions largely convert to NO_2, NOx emissions are typically examined when assessing potential air quality impacts. Motor vehicle emissions are the main source of NOx in urban areas.

NO_2 is a reddish-brown pungent gas and is toxic to various animals and to humans because of its ability combine with water in the eyes, lungs, mucus membranes, and skin to form nitric acid. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high

concentrations of NO_2 can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations among NO_2 concentrations and (1) daily mortality from respiratory and cardiovascular causes and (2) hospital admissions for respiratory conditions.

Ozone

Ozone (O_3) is a secondary pollutant so it is not directly emitted. It is a gas that is formed when volatile organic compounds (VOCs) (also referred to as reactive organic gases) and NOx undergo photochemical reactions that occur in the presence of sunlight. The primary source of VOC emissions is unburned hydrocarbons in motor vehicles and exhaust from other internal combustion engines. NOx forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form; as a result, O_3 is known as a summertime air pollutant.[1] Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind, and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when ozone levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level ozone exposure to a variety of problems, including:

- Lung irritation that can cause inflammation much like a sunburn;
- Wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities;
- Permanent lung damage to those with repeated exposure to ozone pollution; and
- Aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Particulate Matter

Particulate matter includes both aerosols and solid particles of a wide range of size and composition. Of particular concern are those particles smaller than 10 microns in size (PM10) and smaller than or equal to 2.5 microns (PM2.5). Particulate matter size refers to the aerodynamic diameter of the particle. Smaller particles are of greater concern because they can penetrate deeper into the lungs than large particles.

PM10 is generally emitted directly as a result of mechanical processes that crush or grind larger particles or from the re-suspension of dusts, most typically through construction activities and vehicular travels. PM10 generally settles out of the atmosphere rapidly and is not readily transported over large distances.

PM2.5 is directly emitted in combustion exhaust and formed in atmospheric reactions between various gaseous pollutants including NOx, sulfur oxides (SOx), and VOCs. PM2.5 can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effect of airborne particulate matter is on the respiratory system. According to the USEPA, some people are much more sensitive than others to breathing fine particles (i.e., PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases,

[1] Ground-level O_3 is not to be confused with atmospheric O_3 or the "ozone layer", which occurs very high in the atmosphere and shields the planet from some ultraviolet rays.

and the elderly may suffer worse illnesses and premature death, and people with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

Short-term exposures to high PM2.5 levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposures to high PM2.5 levels are associated with premature mortality and development of chronic respiratory disease. Short-term exposures to high PM10 levels are associated with hospital admissions for cardiopulmonary diseases, increased respiratory symptoms, and possible premature mortality. The USEPA has concluded that available evidence does not suggest an association between long-term exposure to PM10 at current ambient levels and health effects (USEPA and FHWA 2006).

Particulate matter tends to occur primarily in the form of fugitive dust. This dust appears to be generated by both local sources and by region-wide dust during moderate to high wind episodes. These regional episodes tend to be multi-district and sometimes interstate in scope. The principal sources of dust in the urban areas are grading, construction, disturbed areas of soil, and dust entrained by vehicles on roadways.

Carbon Monoxide

Carbon monoxide (CO) is a colorless and odorless gas which, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease, and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations are typically found near crowded intersections, along heavily used roadways carrying slow-moving traffic, and at or near ground level. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (i.e., up to 600 feet or 185 meters) of heavily traveled roadways. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

Sulfur Dioxide

Sulfur oxides (SOx) constitute a class of compounds of which sulfur dioxide (SO_2) and sulfur trioxide (SO_3) are of greatest importance. Ninety-five percent of pollution-related SOx emissions are in the form of SO_2. SOx emissions are typically examined when assessing potential air quality impacts of SO_2. The primary contributor of SOx emissions is fossil fuel combustion for generating electric power. Industrial processes, such as nonferrous metal smelting, also contribute to SOx emissions. SOx is also formed during combustion of motor fuels. However, most of the sulfur has been removed from fuels, greatly reducing SOx emissions from vehicles.

SO_2 combines easily with water vapor, forming aerosols of sulfurous acid (H_2SO_3), a colorless, mildly corrosive liquid. This liquid may then combine with oxygen in the air to form the even more irritating and corrosive sulfuric acid (H_2SO_4). Peak levels of SO_2 in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of SO_2 gas and particles cause respiratory illness and aggravate existing heart disease. SO_2 reacts with other chemicals in the air to form tiny sulfate particles which are measured as PM2.5. Sulfur dioxide is monitored at several sites in the SoCAB.

Lead

Lead is a stable compound that persists and accumulates both in the environment and in animals. In humans, it affects the body's blood-forming, nervous, and renal systems. In addition, lead has been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunological and gastrointestinal systems, although there is significant individual variability in response to lead exposure. When the USEPA adopted the lead standard in 1978, it was estimated that over 90 percent of ambient lead concentrations were attributable to the use of lead in gasoline. The phase-out of lead in gasoline began during the 1970s, and subsequent regulations virtually eliminated lead from the gasoline sold in California. Although lead from gasoline no longer poses an air quality problem, lead emissions from remaining industrial sources such as battery recycling, lead smelters, cement and glass manufacturing, metal mining and the use of non-leaded fuel in certain general aviation applications (but not in commercial passenger aircraft) can still pose "hot spot" problems in a few locations. On October 15, 2008, the USEPA revised the federal ambient air quality standard for lead, lowering it from 1.5 micrograms per cubic meter ($\mu g/m^3$) to 0.15 $\mu g/m^3$. The USEPA states numerous health studies are now available that demonstrate health effects at much lower levels of lead than previously thought (CARB 2009a).

3.2 TOXIC AIR CONTAMINANTS

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are different than the "criteria" pollutants previously discussed in that ambient air quality standards have not been established for them. TACs occurring at extremely low levels may still cause health effects, and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk, and chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as diesel particulate matter (diesel PM). In 1998, California identified diesel exhaust PM as a TAC based on its potential to cause cancer, premature death, and other health problems. Diesel engines also contribute to California's air quality problems associated with fine particulate matter (i.e., PM2.5). Those most vulnerable are children whose lungs are still developing and the elderly who may have other serious health problems. Based on year 2005 emissions in California, diesel PM contributes each year to approximately 3,500 premature deaths and thousands of hospital admissions, asthma attacks and other respiratory symptoms, and lost workdays. Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. In addition, diesel soot causes visibility reduction and is a potent global warmer (CARB 2009b.).

3.3 GLOBAL CLIMATE CHANGE AND GREENHOUSE GASES

General Description of Global Climate Change

Global climate change is currently an important and highly debated environmental, economic, and political issue. Increasing GHG emissions have led to an anthropogenic (caused or produced by humans) warming trend of the earth's average temperature, which is causing

changes in the earth's climate; GHG emissions are primarily associated with (1) the burning of fossil fuels during motorized transport, electricity generation, consumption of natural gas, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition. This increasing temperature phenomenon is known as "global warming", and the climatic effect is known as "climate change" or "global climate change".

Climate change is a recorded change in the average weather of the earth measured by variables such as wind patterns, storms, precipitation, and temperature. Historical records show that global temperature changes have occurred naturally in the past, such as during previous ice ages. Eleven of the 12 years from 1995 to 2006 rank among the warmest years in the instrumental record of global surface temperature (since 1850). An increase in global surface temperature of 0.74°C (33.33°F) occurred during the 100-year period from 1906 to 2005.

Recent scientific research indicates very high confidence (i.e., at least 90 percent) that the rate and magnitude of current global temperature changes are anthropogenic and that global warming will lead to adverse climate change effects around the globe (IPCC 2007). Anthropogenic effects, processes, objects, or materials are those that are derived from human activities, as opposed to those occurring in natural environments without human influence.

Greenhouse Gases

GHGs are atmospheric gases and clouds within the atmosphere that influence the earth's temperature by absorbing most of the infrared radiation that rises from the sun-warmed surface and that would otherwise escape into space. This process is commonly known as the "Greenhouse Effect". GHGs are emitted by natural processes and human activities. The earth's surface temperature averages about 58°F because of the Greenhouse Effect. Without it, the earth's average surface temperature would be somewhere around an uninhabitable 0°F (Henson 2006). The resulting balance between incoming solar radiation and outgoing radiation from both the earth's surface and atmosphere maintains the planet's habitability.

GHGs, as defined under California's Assembly Bill (AB) 32, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). General discussions on climate change often include water vapor, ozone, and aerosols in the GHG category. Water vapor and atmospheric ozone are not gases that are formed directly in the construction or operation of development projects, nor can they be controlled in these projects. Aerosols are not gases. While these elements have a role in climate change, they are not considered by either regulatory bodies (such as the California Air Resources Board [CARB]) or climate change groups (such as the California Climate Action Registry [CCAR]) as gases to be reported or analyzed for control. Therefore, no further discussion of water vapor, ozone, or aerosols is provided.

Anthropogenic emissions of GHGs into the atmosphere enhance the Greenhouse Effect by absorbing radiation from other atmospheric GHGs that would otherwise escape into space, thereby trapping more radiation in the atmosphere and causing temperatures to increase. CO_2 is the most important anthropogenic GHG. The global atmospheric concentration of CO_2 has increased from a pre-industrial (roughly 1750) value of about 280 parts per million (ppm) to 379 ppm in 2005, primarily due to fossil fuel use, with land use change providing a significant but smaller contribution. The annual growth rate in CO_2 concentrations continues to increase, with a larger annual CO_2 concentration growth rate during the ten-year period between 1995 and 2005 than since the beginning of continuous direct measurements in 1960.

The most common GHG is CO_2, which constitutes approximately 84 percent of all GHG emissions in California (CEC 2006a). Worldwide, the State of California ranks as about the

12th largest emitter of CO_2 and is responsible for approximately 2 percent of the world's CO_2 emissions (CEC 2007, 2006a). However, throughout the U.S., California is the fourth lowest in CO_2 emissions per capita (CEC 2006a).

GHGs are global pollutants unlike air pollutants such as ozone, particulate matter and TACs, which are pollutants of regional and local concern. While pollutants with localized air quality effects have relatively short atmospheric lifetimes (generally on the order of a few days), GHGs have relatively long atmospheric lifetimes, ranging from one year to several thousand years. Long atmospheric lifetimes allow for GHGs to disperse around the globe. In addition, the GHG impacts are global, as opposed to the localized air quality effects of criteria air pollutants and TACs.

GHGs vary widely in the power of their climatic effects; therefore, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, since CH_4 and N_2O are approximately 21 and 310 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 21 and 310, respectively (CO_2 has a GWP of 1). Carbon dioxide equivalent (CO_2e) is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 1.

TABLE 1
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50–200	1
Methane (CH_4)	12	21
Nitrous Oxide (N_2O)	114	310
HFC-134a	48.3	1,300
PFC: Tetrafluoromethane (CF_4)	50,000	6,500
PFC: Hexafluoroethane (C_2F_6)	10,000	9,200
Sulfur Hexafluoride (SF_6)	3,200	23,900
HFC: hydrofluorocarbon; PFC: perfluorocarbon. Source: CCAR 2009.		

General Environmental Effects of Global Climate Change

Executive Order S-3-05 , resulted in a report on the impacts of climate change on California, including impacts to water supply, public health, agriculture, the coastline, and forestry. This report, *Scenarios of Climate Change in California: An Overview* (Climate Scenarios Report), was published in February 2006 (CCCC 2006).

The Climate Scenarios Report uses a range of emissions scenarios developed by the Intergovernmental Panel on Climate Change (IPCC) to project 3 potential warming ranges (i.e., temperature increases) that may occur in California during the 21st Century: the lower warming range (3.0°F–5.5°F); the medium warming range (5.5°F–8.0°F); and the higher warming range (8.0°F–10.5°F). The Climate Scenarios Report then presents analysis of future climate in California under each warming range.

Each emissions scenario would result in substantial temperature increases for California. According to the report, substantial temperature increases would result in a variety of impacts to California's people, economy, and environment that are associated with a projected increase in extreme conditions, with the severity of the impacts depending upon actual future emissions of GHGs and associated warming. Under the emissions scenarios of the Climate Scenarios Report (CCCC 2006), the impacts of global warming in California are anticipated to include, but are not limited to, the following:

- ***Public Health.*** Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, in high ozone (O_3) areas such as the SoCAB and the San Joaquin Valley, the number of days with weather conditions conducive to O_3 formation is projected to increase from 25 to 35 percent under the lower warming range to 75 to 85 percent under the medium warming range. In addition, if global background O_3 levels increase as predicted, under some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances depending on wind conditions. The Climate Scenarios Report indicates that large wildfires could become up to 55 percent more frequent if GHG emissions are not significantly reduced.

  In addition, under the higher warming scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures will increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

- ***Water Resources.*** A vast network of man-made reservoirs and aqueducts captures and transports water throughout the state from Northern California rivers and the Colorado River. The current distribution system relies on snowpack from the Sierra Nevadas to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

  If GHG emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevadas' spring snowpack by as much as 70–90 percent. Under the lower warming scenario, snowpack losses are expected to be only half as large as those expected if temperatures rise to the higher warming range. How much snowpack will be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snowpack would pose challenges to water managers, would hamper hydropower generation, and would nearly eliminate all skiing and other snow-related recreational activities.

  The State's water supplies are also at risk from rising sea levels. An influx of saltwater would degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta—a major California fresh water supply.

  Global warming is also projected to decrease the potential for hydropower production within the state (although the effects on hydropower are uncertain) and seriously harm winter tourism. Under the lower warming range, the ski season at lower elevations could

be reduced by as much as a month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing and snowboarding.

- ***Agriculture.*** Increased GHG emissions are expected to cause widespread changes to the agricultural industry, reducing the quantity and quality of agricultural products statewide. California farmers are projected to lose as much as 25 percent of the water supply they need. Although higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, California's farmers will face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development will change, as will the intensity and frequency of pest and disease outbreaks. Rising temperatures will likely aggravate O_3 pollution, which makes plants more susceptible to disease and pests, and which interferes with plant growth.

  Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures are likely to worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits and nuts, and milk.

  In addition, continued global warming will likely shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. Should range contractions occur, it is likely that new or different weed species will fill the emerging gaps. Continued global warming is also likely to alter the abundance and types of many pests, lengthen pests' breeding seasons, and increase pathogen growth rates.

- ***Forests and Landscapes.*** Global warming is expected to intensify the risk of wildfire and the resultant altering of the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors—including precipitation, winds, temperature and landscape, and vegetation conditions—future risks will not be uniform throughout the state. For example, if precipitation decreases as temperatures rise, wildfires in Southern California are expected to increase by approximately 30 percent toward the end of the 21st Century. In contrast, precipitation decreases could increase wildfires in Northern California by up to 90 percent.

  Moreover, continued global warming will alter natural ecosystems and biological diversity within the state. For example, alpine and subalpine ecosystems are expected to decline by as much as 60–80 percent by the end of the 21st Century as a result of increasing temperatures. The productivity of the state's forests is also expected to decrease as a result of global warming.

Global, National, and State Contributions to Greenhouse Gas Emissions

Global

Worldwide anthropogenic GHG emissions as of 2006 totaled approximately 29,700 $MMTCO_2e$. Six countries[2] and the European Community accounted for approximately 70 percent of the total global emissions.

United States

The U.S. was the top producer of GHG emissions as of 2005. Based on GHG emissions in 2005, 6 states—Texas, California, Ohio, Pennsylvania, Florida, and Illinois (in ranked order)—each ranked among the top 25 GHG emitters internationally (WRI 2008). The primary greenhouse gas emitted by human activities in the U.S. was CO_2, representing approximately 85 percent of the total GHG emissions (USEPA 2008). CO_2 from fossil fuel combustion, the largest U.S. GHG emissions source, accounted for approximately 80 percent of U.S.'s GHG emissions (USEPA 2008).

State of California

Based on the 2004 GHG inventory data (the latest year available) compiled by CARB for the California 1990 greenhouse gas emissions inventory, California emitted 484 $MMTCO_2e$, including emissions resulting from out-of-state generation of electricity supplied to California users (CARB 2007a).

The primary contributors to California GHG emissions 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 are presented in Table 2, GHG Sources in California – 2004 Inventory.

[2] The United States, China, Russian Federation, India, Japan, and Germany.

TABLE 2
GHG SOURCES IN CALIFORNIA – 2004 INVENTORY

Source Category	Annual GHG Emissions ($MMTCO_2e$)	Percent of Total	Annual GHG Emissions ($MMTCO_2e$)	Percent of Total
	Includes Imported Electricity		Excludes Imported Electricity	
Agriculture	27.9	5.8	27.9	6.6
Commercial Uses	12.8	2.6	12.8	3.0
Electricity Generation[a]	119.8	24.7	58.5	13.8
Forestry (excluding sinks)	0.2	0.0	0.2	0.0
Industrial Uses	96.2	19.9	96.2	22.7
Residential Uses	29.1	6.0	29.1	6.9
Transportation	182.4	37.7	182.4	43.1
Other[b]	16.0	3.3	16.0	3.8
Totals	**484.4**	**100.0%**	**423.1**	**100.0%**

$MMTCO_2e$: million metric tons of carbon dioxide equivalent

Totals may not add due to rounding
[a] Imported electricity accounts for 61.3 $MMTCO_2e$.
[b] Unspecified combustion and use of ozone-depleting substances.

Source: CARB 2007a.

Orange County

Existing GHG emissions for Orange County were calculated for construction sources, mobile sources, natural gas consumption, and electricity generation by the Southern California Association of Governments (SCAG). As shown in Table 3, existing County emissions are estimated to be approximately 30 MMTCO2e/year. It is important to note a few limitations before comparing SCAG regional GHG emissions to the State emissions inventory prepared by CARB. First, 2004 is the latest year for which CARB has estimated State emissions, and SCAG emissions are presented through 2008. However, the comparison provides a reasonable percentage estimate of State emissions that are generated in the SCAG region. Second, the CARB emissions inventory includes emissions estimates from various sources that were not included in the SCAG analysis because every emissions source (e.g., mineral industry, livestock, manure management) that CARB analyzed could not be analyzed for the SCAG region due to methodological and data limitations. As a result, SCAG emissions are an underestimation when compared to the total State emissions.

TABLE 3
GHG SOURCES IN ORANGE COUNTY – 2008

Source Category	Annual GHG Emissions ($MMTCO_2e$)
Construction	0.10
Mobile	13.20
Electricity	7.72
Natural Gas	8.65
Total	**29.67**

$MMTCO_2e$: million metric tons of carbon dioxide equivalent

Source: SCAG 2008.

SECTION 4.0 REGULATORY SETTING AND AIR QUALITY STANDARDS

4.1 FEDERAL

The USEPA is responsible for setting and enforcing the NAAQS for criteria pollutants. The standards are shown in Table 4. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The USEPA's air quality mandates are drawn primarily from the CAA, which was enacted in 1970, and most recently amended by Congress in 1990. As part of its enforcement responsibilities, the USEPA requires each State with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain and maintain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution by using a combination of performance standards and market-based programs within the SIP-identified timeframe.

TABLE 4
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	State Standards[a,b]	Federal Standards[c]	
			Primary[c,d]	Secondary[c,e]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	Same as Primary
PM10	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
PM2.5	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	15.0 µg/m^3	Same as Primary
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (56 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (338 µg/m^3)	–	–
SO_2	AAM	–	0.030 ppm (80 µg/m^3)	–

TABLE 4 (Continued)
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	State Standards[a,b]	Federal Standards[c]	
			Primary[c,d]	Secondary[c,e]
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	–	–
Lead[f]	30 day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month avg.	–	0.15 µg/m^3	
Visibility Reducing Particles	8 hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride[f]	24 Hour	0.01 ppm (26 µg/m^3)		

–: No Standard; ppm: parts per million; µg/m^3: micrograms per cubic meter; mg/m^3: milligrams per cubic meter; AAM: annual arithmetic mean; km: kilometer.

[a] California standards for O_3, CO (except Lake Tahoe), SO_2 (1 and 24 hour), NO_2, PM10, PM2.5, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] Concentration is expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C, 77 degrees Fahrenheit [°F]) and a reference pressure of 760 torr (unit of measure for the pressure exerted by 1 mm of mercury, equal to $^1/_{760}$ of standard atmospheric pressure). Most measurements of air quality are to be corrected to a reference temperature of 25°C (77°F) and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[c] National standards (other than O_3, PM10, PM2.5, 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 PM10, 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 PM2.5, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years are equal to or less than the standard. Contact the USEPA for further clarification and current federal policies.

[d] National Primary Standards: The levels of air quality necessary with an adequate margin of safety to protect public health.

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

[f] CARB has identified lead and vinyl chloride as "toxic air contaminants" 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.

Source: CARB 2008a.

Greenhouse Gases

There are no federal laws or regulations governing the emission of greenhouse gases (GHGs). However, the following paragraphs describe current federal activities and related legislation.

On April 17, 2009, the Administrator of the USEPA signed a proposal with two distinct findings regarding GHGs under Section 202(a) of the CAA (USEPA 2009a):

- The Administrator is proposing to find that the current and projected concentrations of the mix of six key greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the endangerment finding.

- The Administrator is further proposing to find that the combined emissions of CO_2, CH_4, N_2O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change. This is referred to as the cause or contribute finding.

The proposed findings were published in the *Federal Register* for the public comment period, which ended on June 23, 2009. Two public hearings were held in May 2009. The USEPA will consider all comments before issuing final findings. The findings do not include any proposed regulations. Before taking any steps to reduce greenhouse gases under the CAA, the USEPA would conduct an appropriate process and consider stakeholder input.

With respect to legislation, the American Clean Energy and Security Act of 2009 (HR 2454) was passed by the House of Representatives (HR) on June 26, 2009. This proposed law includes but is not limited to a cap-and-trade global warming reduction plan designed to reduce economy-wide greenhouse gas emissions by 17 percent by 2020 and by 83 percent by 2050. Other provisions would require utilities to produce 12 percent of their electricity from renewable resources by 2012, require new buildings to be 30 percent more efficient by 2012, and would provide incentives regarding new carbon capture and sequestration technologies (OpenCongress 2009; Howrey 2009). As of September 2009, the Senate has not approved the bill.

The 2007 Energy Bill (HR 6) mandates improved national standards for vehicle fuel economy. These standards, known as Corporate Average Fuel Economy (CAFE) standards, require a fleetwide average of 35 miles per gallon (mpg) to be achieved by 2020. The National Highway Traffic Safety Administration is directed to phase-in requirements to achieve this goal. A CARB analysis suggests that achieving this goal will require an annual improvement in fleetwide average fuel economy of approximately 3.4 percent between 2011 and 2020 (CARB 2008b). Although the explicit purpose of requiring improved national standards for fuel economy was not to address climate change, these requirements would improve the fuel economy of the nation's vehicle fleet and therefore, incrementally lower the amount of fuel use and GHG emissions associated with vehicle trips generated by a proposed Project.

4.2 STATE OF CALIFORNIA

CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and State air pollution control programs in California. In this capacity, CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS) shown in Table 4, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. For regions that do not attain the CAAQS, CARB requires the air districts to prepare plans for attaining the

standards. These plans are then integrated into the State SIP. CARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hair spray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

Greenhouse Gases

There are numerous State plans, policies, regulations, and laws related to GHGs and global climate change. Following is a brief discussion of some of these plans, policies, and regulations.

Assembly Bill 1493

In 2002, Assembly Bill (AB) 1493 required CARB to develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state". To meet the requirements of AB 1493, CARB approved amendments to the *California Code of Regulations*. Amendments included (1) the addition of GHG emission standards to California's existing motor vehicle emission standards and (2) the requirement that automobile manufacturers meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016. In order to enact State standards for vehicle emissions, a waiver was required from the USEPA.

Subsequent to prolonged litigation, the USEPA denied California's waiver request. California filed a petition with the Ninth Circuit Court of Appeals challenging the USEPA's denial on January 2, 2008. The Obama administration subsequently directed the USEPA to re-examine their decision. On May 19, 2009, challenging parties, automakers, the State of California, and the federal government reached an agreement on a series of actions that would resolve these current and potential future disputes over the standards through model year 2016. In summary, the USEPA and the U.S. Department of Transportation agreed to adopt a federal program to reduce GHGs and improve fuel economy, respectively, from passenger vehicles in order to achieve equivalent or greater greenhouse gas benefits as the AB 1493 regulations for the 2012–2016 model years. Manufacturers agreed to ultimately drop current and forego similar future legal challenges, including challenging a waiver grant, which occurred on June 30, 2009. The State of California committed to (1) revise its standards to allow manufacturers to demonstrate compliance with the fleet-average GHG emission standard by "pooling" California and specified State vehicle sales; (2) revise its standards for 2012–2016 model year vehicles so that compliance with USEPA-adopted GHG standards would also comply with California's standards; and (3) revise its standards, as necessary, to allow manufacturers to use emissions data from the federal CAFE program to demonstrate compliance with the AB 1493 regulations (CARB 2009c).

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce snowpack in the Sierra Nevadas, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. In an effort to avoid or reduce the impacts of climate change, Executive Order S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

The California Legislature adopted the public policy position that global warming is "a serious threat to the economic well-being, public health, natural resources, and the environment of California" (*California Health and Safety Code,* Section 38501). Further, the State Legislature has determined that "the potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra Nevada snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious disease, asthma, and other human health-related problems", and that "Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the State" (*California Health and Safety Code,* Section 38501). These public policy statements became law with the enactment of AB 32, the California Global Warming Solutions Act of 2006, signed by Governor Arnold Schwarzenegger in September 2006. AB 32 is now codified as *California Health and Safety Code* Sections 38500–38599.

AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction is to be accomplished through an enforceable statewide cap on GHG emissions to be phased in starting in 2012. AB 32 directs CARB to establish this statewide cap based on 1990 GHG emissions levels; disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms. Emissions reductions under AB 32 are to include carbon sequestration projects and best management practices that are technologically feasible and cost-effective. As of September 2009 when the climate change analysis was prepared, CARB had not yet promulgated GHG emissions or reporting standards that are directly applicable to the proposed Project.

Senate Bill 97

Signed August 2007, Senate Bill (SB) 97 directs the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions for evaluation under CEQA by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010.

Governor's Office of Planning and Research Technical Advisory

On June 19, 2008, the OPR issued a Technical Advisory on addressing climate change impacts of a proposed project under CEQA (OPR Climate Change Advisory) (OPR 2008). The OPR Climate Change Advisory recommends that lead agencies quantify, determine the significance of, and (as needed) mitigate the cumulative climate change impacts of a proposed project. The OPR Climate Change Advisory identifies that each lead agency is required, under CEQA, to exercise its own discretion in choosing how to determine significance in the absence of adopted thresholds or significance guidelines from the State, CARB, or the applicable local air district. OPR also asked the CARB to make recommendations for GHG-related thresholds of significance – identifiable benchmarks or standards that assist lead agencies in the significance determination.

In April 2009, the OPR transmitted Proposed SB 97 CEQA Guideline Amendments to the California Secretary of Natural Resources (OPR 2009). The proposed CEQA Guideline Amendments are listed below.

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

(3) 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 greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The OPR proposes to add the following section to the CEQA Initial Study Checklist:

GREENHOUSE GAS EMISSIONS – Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

On July 3, 2009, the Natural Resources Agency (Resources) commenced the Administrative Procedure Act (APA) rulemaking process for certifying and adopting these amendments. The procedures include two public hearings held in August 2009 and the receiving of public comment through August 27, 2009. Approximately 80 comments were received. Resources will consider and respond to all comments received during the comment period. Pursuant to the APA, responses may include changes to the proposed guidelines amendments or an explanation of why no change is being made in response to the suggestion or recommendation (see 14 *California Code of Regulations* [CCR] Section 15000 et seq.).

CARB Proposals for Interim CEQA Significance Thresholds

In October 2008, in response to the request from OPR noted above, CARB published draft preliminary guidance to agencies on how to establish interim significance thresholds for analyzing GHG emissions called *Recommended Approaches for Setting Interim Thresholds for Greenhouse Gases under the California Environmental Quality Act* (CARB Guidance). CARB did not attempt to address every type of project that may be subject to CEQA, but instead focused on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. For each type of project, the CARB Guidance recommends that a two-pronged threshold be employed, one performance based and one numerical. For performance standards, the CARB Guidance suggests that operations and construction of the project be evaluated for its consistency with applicable performance standards contained in plans designed to reduce GHG emissions and/or help meet the State's emission reduction objectives in AB 32 (CARB 2008c).

For industrial projects, the CARB Guidance proposed that projects that emit less than 7,000 metric tons of CO_2e per year, as well as meeting performance standards for construction and transportation, may be considered less than significant, recognizing that AB 32 will continue to reduce or mitigate emissions from these sorts of projects over time. For residential and commercial projects, the CARB Guidance proposed performance standards for construction, energy efficiency, water use, waste disposal, and transportation, as well as a CO_2e emissions threshold. The CARB Guidance states that some small residential and commercial projects, emitting 1,600 metric tons of CO_2e per year or less, would clearly not interfere with achieving the States emission reduction objectives in AB 32 and thus may be deemed categorically exempt from CEQA. The CARB Guidance does not state or imply that projects emitting more than 1,600 metric tons of CO_2e per year will necessarily result in a significant impact, although the CARB Guidance did not suggest a numerical threshold for commercial and residential projects.

CARB Scoping Plan

As discussed previously, AB 32 requires CARB to develop a Scoping Plan to lower the State's GHG emissions to meet the 2020 limit (*California Health and Safety Code,* Sections 38500 et seq.). The Scoping Plan was approved at the December 2008 board meeting. The measures in the CARB-adopted Scoping Plan will be developed and in place by 2012. Key elements of the Scoping Plan include (1) expanding and strengthening existing energy efficiency programs and building and appliance standards; (2) achieving a statewide renewable energy mix of 33 percent; (3) developing a California cap-and-trade program linked with other similar programs; (4) establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets; (5) implementing existing laws and standards such as California's clean car standards (AB 1493), goods movement measures, and the Low Carbon Fuel Standard; and (6) issuing targeted fees to fund the State's long-term commitment to AB 32 administration (CARB 2008d).

On April 23, 2009, CARB adopted the Low Carbon Fuel Standard, which has a goal to reduce GHG emissions from California's transportation fuels by 10 percent, equal to 16 million metric tons of carbon dioxide equivalent ($MMTCO_2e$)[3], by 2020. The regulation requires providers, refiners, importers, and blenders to ensure that the fuels they provide for the California market

[3] CO_2e emissions are commonly expressed as "metric tons of carbon dioxide equivalent ($MTCO_2e$)". Larger quantities of emissions, such as on the State or world scale, are expressed in million metric tons of carbon dioxide equivalent ($MMTCO_2e$). Metric tons may also be stated as "tonnes". The CO_2e for a gas is derived by multiplying the tons of the gas by the associated global warming potential (GWP), such that $MMTCO_2e$ = (million 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 million metric ton of CH_4 are equivalent to the emissions of 21 million metric tons of CO_2.

meet an average declining standard of "carbon intensity". This is established by determining the sum of greenhouse gas emissions associated with the production, transportation and consumption of a fuel, also referred to as the "fuel pathway" (CARB 2009d).

4.3 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The proposed Sunset Ridge Park Project is located in Orange County. Air quality in Orange County is regulated by the SCAQMD. The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin (SoCAB). To that end, the SCAQMD, a regional agency, works directly with SCAG, County transportation commissions and local governments, and cooperates actively with all federal and State government agencies. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMPs). Two versions (2003 and 2007) of the AQMPs are in different stages of approval. The 2003 AQMP is an update to the 1997 AQMP. The 2003 AQMP employs up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. The 2003 AQMP proposes policies and measures to achieve federal and State standards for healthy air quality in the SoCAB. The 2003 AQMP updates the attainment demonstration with the federal standards for O_3 and PM10; replaces the 1997 attainment demonstration for the federal CO standard and provides a basis for a future CO maintenance plan; and updates the maintenance plan for the federal NO_2 standard, which the SoCAB has met since 1992. The 2003 AQMP was adopted by the SCAQMD in August 2003 and approved, with modifications, by CARB in October 2003. CARB then submitted the 2003 State and Federal Strategy of the California SIP (which incorporates the 2003 AQMP) to the USEPA on January 9, 2004. However, this SIP has not been approved, and the 1997 AQMP with 1999 amendments remains the federally approved AQMP.

The SCAQMD Governing Board adopted the 2007 AQMP on June 1, 2007. The purpose of the 2007 AQMP for the SoCAB is to set forth a comprehensive program that will lead the region into compliance with federal 8-hour O_3 and PM2.5 air quality standards. Federal and State 8-hour O_3 and PM2.5 standards were implemented subsequent to 2003. CARB adopted the State Strategy for the 2007 SIP, including the 2007 AQMP as part of the 2007 SIP, on September 27, 2007. On November 28, 2007, CARB submitted a SIP revision to the USEPA for O_3, PM2.5, CO, and NO_2 in the SoCAB; this revision is identified as the "2007 South Coast SIP". The 2007 AQMP/2007 South Coast SIP demonstrates attainment of the federal PM2.5 standard in the SoCAB by 2014 and attainment of the federal 8-hour O_3 standard by 2023. The SIP also includes a request to reclassify the O_3 attainment designation from "severe" to "extreme" (CARB 2007b). On February 1, 2008, CARB submitted additional technical information relative to the 2007 South Coast SIP to the USEPA (CARB 2008e).

In March 2009, CARB reported the following status: "With its actions since adopting the State Strategy in September 2007, California now has in place programs and regulations that will achieve 87 percent of the reductions needed for PM2.5 attainment in the South Coast. California has also achieved 90 percent of the reductions needed from near-term measures for ozone attainment in the South Coast. Additional reductions are still needed from long term measures" (CARB 2009e).

Greenhouse Gases

Beginning in April 2008, the SCAQMD convened a working group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. The Working Group meets approximately once per month. On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG significance threshold for industrial projects where the SCAQMD is the lead agency (SCAQMD 2008c). The Working Group has adopted a philosophy similar to recommendations made by other agencies in California to identify "Significance Screening Levels" (or thresholds) for GHG emissions. Projects with GHG emissions less than these levels or thresholds would be less than significant, although the projects may be required to demonstrate energy efficiency greater than that required by the California Building Code, commonly referred to as Title 24 standards, and efficiencies in water use such as the use of recycled water or the installation of "smart" controllers for landscape irrigation. Projects with GHG emissions greater than the Significance Screening Levels would be required to implement specific performance standards or purchase offsets[4] to reduce the climate change impact to less than significant. The interim screening threshold for industrial projects is 10,000 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/yr).

4.4 CITY OF NEWPORT BEACH

4.4.1 General Plan 2006

The General Plan for the City of Newport Beach was adopted in 2006. As Newport Beach is almost fully built out, the General Plan focuses on conserving the existing pattern of land uses and establishes policies for their protection and long-term maintenance. While the General Plan contains no policies specifically pertaining to GHG emissions, the Natural Resources Element of the General Plan provides direction regarding the conservation, development, and utilization of natural resources. This element addresses water supply (as a resource) and water quality (including bay and ocean quality and potable drinking water), air quality, terrestrial and marine biological resources, open space, mineral resources, visual resources, and energy. The General Plan goals and policies that relate to Air Quality or Global Climate Change and also to the proposed Project are presented in Table 5.

[4] Purchase of offsets consists of contributions to a fund that would be used to implement GHG emission reductions at some location other than the project site.

TABLE 5
NEWPORT BEACH GENERAL PLAN GOALS AND POLICIES

Goal	Policies as Related to the Conservation and Energy Efficiency
Goal 1 – Water Quality Minimized water consumption through conservation methods and other techniques.	Policy NR 1.1 Water Conservation in New Development: Enforce water conservation measures that limit water usage, prohibit activities that waste water or cause runoff, and require the use of water–efficient landscaping and irrigation in conjunction with new construction projects.
	Policy NR 1.2 Use of Water Conserving Devices: Establish and actively promote use of water conserving devices and practices in both new construction and major alterations and additions to existing buildings. This can include the use of rainwater capture, storage, and reuse facilities.
Goal 6 – Air Quality Reduced mobile source emissions.	Policy NR 6.1 Walkable Neighborhoods: Provide for walkable neighborhoods to reduce vehicle trips by siting amenities such as services, parks, and schools in close proximity to residential areas.
	Policy NR 6.5 Local Transit Agency Collaboration: Collaborate with local transit agencies to: develop programs and educate employers about employee rideshare and transit; establish mass transit mechanisms for the reduction of work-related and non-work-related vehicle trips; promote mass transit ridership through careful planning of routes, headways, origins and destinations, and types of vehicles; and develop bus shelters, bicycle lanes, and other bicycle facilities.
Goal 8 – Air Quality Reduced air pollutant emissions from construction activities.	Policy NR 8.1 Management of Construction Activities to Reduce Air Pollution: Require developers to use and operate construction equipment, use building materials and paints, and control dust created by construction activities to minimize air pollutants.
Goal 24 – Energy Conservation Increased energy efficiency in City facilities and operations and in private developments.	Policy NR 24.2 Energy-Efficient Design Features: Promote energy-efficient design features.
Goal 6.2 – Reduced automobile travel through the use of travel demand management strategies.	CE 6.2.1 Alternative Transportation Modes: Promote and encourage the use of alternative transportation modes, such as ridesharing, carpools, vanpools, public transit, bicycles, and walking; and provide facilities that support such alternate modes. CE 6.2.2 Support Facilities for Alternative Modes: Require new development projects to provide facilities commensurate with development type and intensity to support alternative modes, such as preferential parking for carpools, bicycle lockers, showers, commuter information areas, rideshare vehicle loading areas, water transportation docks, and bus stop improvements.
Source: Newport Beach 2006.	

In April 2008, the City established the Task Force for Green Development. The committee meets monthly.

The duties of the Task Force are as follows, in order of priority:

A. Make information available to the public concerning programs and materials available to reduce the environmental impacts of new development.

B. Research existing programs, and recommend to the Environmental Quality Affairs Committee and the General Plan/Local Coastal Program Committee a Newport Beach program to encourage “green building,” including items such as energy-efficient design,

and use of building materials that reduce heat generation, conserve water, reduce runoff and improve water quality.

C. Monitor the Governor's Office of Planning and Research (OPR's) development of CEQA Guidelines or the mitigation of greenhouse gas emissions, and recommend City comments on them as needed.

D. Make recommendations to the City Council for implementation of revised CEQA Guidelines for the mitigation of greenhouse gas emissions (Newport Beach 2008).

4.4.2 Interim CEQA Significance Thresholds

The City of Newport Beach has adopted the following policy with respect to the assessment of global climate change impacts:

While State agencies and local air pollution control districts are currently working to develop CEQA thresholds of significance that would guide classification of impacts associated with global climate change in CEQA documents, to date, the City lacks sufficient information to establish formal, permanent thresholds by which classify projects with relatively small, incremental contributions to the State's total GHG emissions as cumulatively considerable or not. Until appropriate regulatory entities develop CEQA thresholds for GHGs, projects emitting more than 1,600 metric tons of CO_2e per year, the City will apply interim standards based on the October 2008 CARB draft Guidance. For residential and commercial projects, the City will evaluate the project's consistency with performance standards set out in City policies, which promote sustainability and reduce emissions, as well as State policies and strategies designed to meet the State's emission reduction objectives in AB 32[5]; the City will also evaluate project emissions numerically. Until further guidance is provided by the State or other appropriate expert agencies, the City will conservatively apply a standard that falls somewhat below the State's proposed threshold for industrial projects, which is 7,000 metric tons of CO_2e per year.

To restate, until more guidance is provided from the expert agencies, the City will consider projects emitting 1,600 metric tons of CO_2e per year or less to be less than significant and no further analysis is required. For projects exceeding the screening threshold of 1,600 metric tons of CO_2e per year, the City will consider projects to have significant impacts under this threshold if they either (1) are not substantially consistent with policies and standards set out in federal, State, and local plans designed to reduce greenhouse gas emission or (2) would emit more than 6,000 metric tons of CO_2e per year. Projects that are not substantially consistent with policies and standards set out in federal, State, and local plans designed to reduce greenhouse gas emission or would emit more than 6,000 metric tons of CO_2e per year would be considered to have significant impacts under this threshold, and thus could be expected to impede the State's mandatory requirement under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The City recognizes that this standard is interim and will likely change over time as further guidance is provided by the expert regulatory agencies.

[5] These interim standards are consistent with the general guidance on cumulative impacts analysis. For instance, section 15064(h)(3) of the proposed amendment to the CEQA Guidelines states that a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a plan or regulation that apply to the project that is specified in law or adopted by the public agency and has specific requirements to reduce the emissions of GHG.

SECTION 5.0 EXISTING CONDITIONS

5.1 EXISTING DEVELOPMENT AND ENVIRONS

The Project site is vacant and undeveloped. The site is located in an urban environment consisting of multi-family residential development, commercial uses, oil field operations, and undeveloped open space. The Newport Crest condominiums are located to the north and northeast; commercial uses and Hoag Hospital are located to the southeast across Superior Avenue. There are residences across West Coast Highway to the southwest. The Newport Banning Ranch property to the west is relatively undeveloped and has roadways and some facilities associated with ongoing oil production operations.

5.2 CLIMATE AND METEOROLOGY

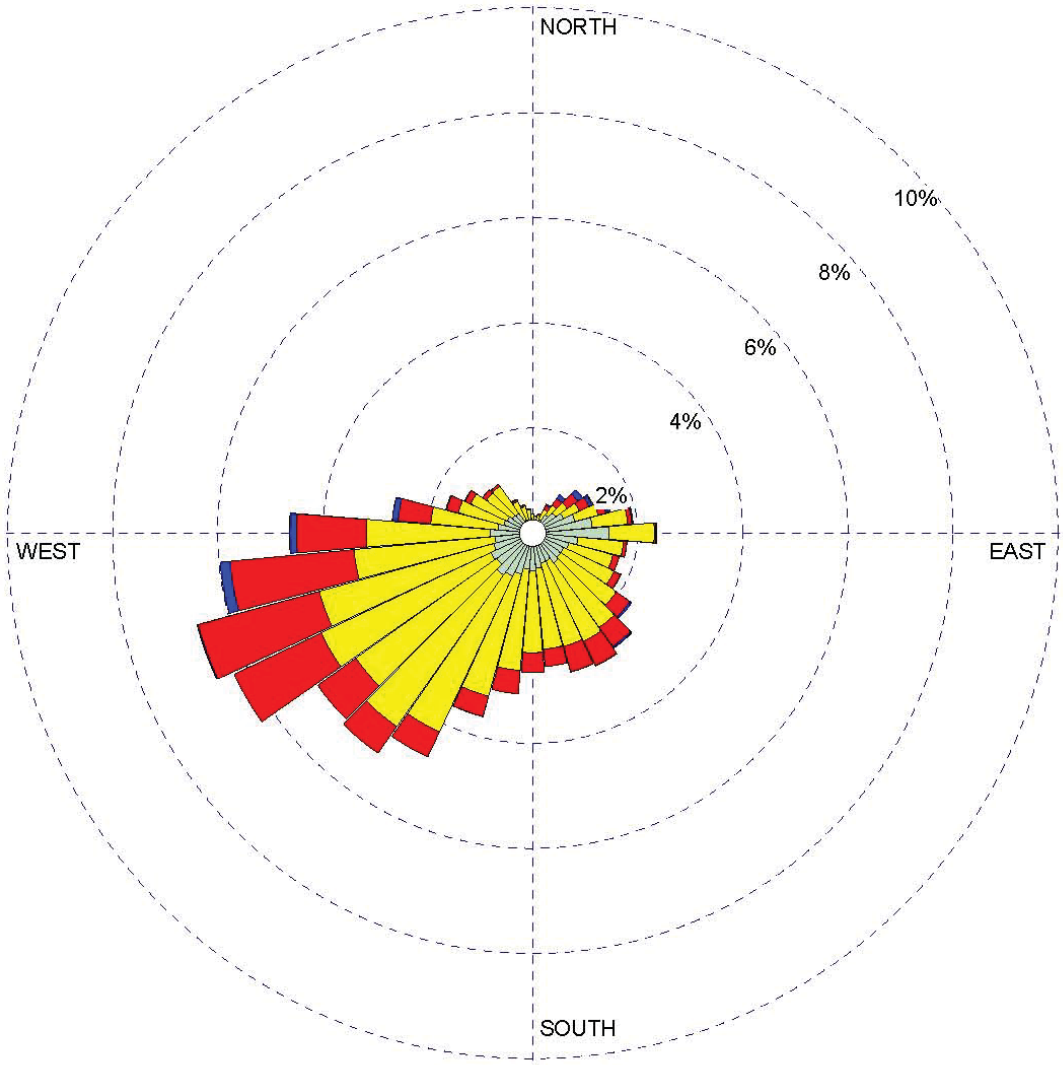
The Project site is located in the SoCAB, which consists of all or part of four counties—San Bernardino, Riverside, Los Angeles, and Orange. The distinctive climate of the SoCAB is determined by its terrain and geographic location. The SoCAB is a coastal plain with connecting broad valleys and low hills; it is bound by the Pacific Ocean to the southwest and has high mountains around the rest of its perimeter. The general region lies in the semi-permanent high-pressure zone of the Pacific, resulting in a mild climate that is tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. Winds in the Project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by the daytime onshore sea breezes. At night, the wind generally slows and reverses direction traveling toward the sea. Local canyons can also alter wind direction, with wind tending to flow parallel to the canyons. The vertical dispersion of air pollutants in the SoCAB is hampered by the presence of persistent temperature inversions. High-pressure systems, such as the semi-permanent high-pressure zone in which the SoCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface, which is called a subsidence inversion. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog. The basinwide occurrence of inversions between 0 and 3,500 feet above sea level is an average of 191 days per year (SCAQMD 1993).

The annual average maximum temperature measured at the Newport Beach Harbor climatic station from 1921 through 2008 was 67.8°F. The highest monthly average maximum temperature of 73.5°F occurs in August and the lowest monthly average minimum temperature of 46.8°F occurs in January. The average annual precipitation during the same period was 11.08 inches (WRCC 2009). Exhibit 4 shows a wind rose from the SCAQMD Costa Mesa station for 2005 through 2007 (SCAQMD 2009a). The prevailing wind direction is west-southwest.

5.3 EXISTING AIR QUALITY

5.3.1 Monitored Criteria Pollutants

Criteria air pollutant concentrations are measured at several monitoring stations in Orange County. The closest station to the project site is the Costa Mesa Monitoring Station, located at 2850 Mesa Verde Drive East, Costa Mesa, approximately 3.5 miles north of the Project site. The Costa Mesa site is also identified as Source Receptor Area (SRA) 18, North Orange County Coastal. Equipment at the station measures O_3, CO, NO_2, and SO_2 levels. Because this monitoring station does not monitor PM10 and PM2.5, data was supplemented from the Mission



D:/projects/Newport/J016/Graphics/Ex_AQ_wind_rose.ai

Costa Mesa Wind Rose 2005-2007

Exhibit 4

Sunset Ridge Park EIR

BonTerra CONSULTING

Viejo Station 19 (Saddleback Valley) for these criteria pollutants. Data from 2006 to 2008 from these stations are summarized in Table 6. The data show violations of the federal and State 8-hour ozone standard in 2008 and the State ozone standard in 2007 at the Costa Mesa Monitoring Station. At the Mission Viejo Monitoring Station, the State PM10 and the federal PM2.5 standards were exceeded in 2006 and 2007.

TABLE 6
AMBIENT AIR QUALITY AT COSTA MESA AND MISSION VIEJO MONITORING STATIONS

Pollutant	Averaging Time	Federal Primary Standards	California Standards	Maximum Concentrations[a]			Number of Days Exceeding Federal Standard[b]			Number of Days Exceeding State Standard[b]		
				2006	2007	2008	2006	2007	2008	2006	2007	2008
O_3 (Costa Mesa)	1 hour	none	0.09 ppm	0.074	0.082	0.094	—	—	—	0	0	0
	8 hour	0.075 ppm	0.07 ppm	0.062	0.072	0.079	0	0	3	0	2	5
CO (Costa Mesa)	1 hour	35 ppm	20 ppm	4	5	—	0	0	—	0	0	—
	8 hour	9 ppm	9.0 ppm	3.01	3.13	1.97	0	0	0	0	0	0
SO_2 (Costa Mesa)	24 hours	0.14 ppm	0.04 ppm	0.005	0.004	0.003	0	0	0	0	0	0
	Annual	0.03 ppm	none	0.001	0.001	0.001	0	0	0	—	—	—
NO_2 (Costa Mesa)	1 hour	none	0.18 ppm	0.101	0.074	0.081	—	—	—	0	0	0
	Annual	0.053 ppm	0.030 ppm	0.015	0.013	0.013	0	0	0	0	0	0
PM10[c] (Mission Viejo)	24 hours	150 µg/m^3	50 µg/m^3	57.0	74.0	42.0	0	0	0	1	3	0
	Annual	Revoked	20 µg/m^3	21.1	23	21.2	—	—	—	1	1	0
PM2.5 (Mission Viejo)	24 hours	35 µg/m^3	none	46.9	46.8	31.9	1	2	0	—	—	—
	Annual	15 µg/m^3	12 µg/m^3	11.0	11.3	*	*	*	*	*	*	*

ppm : parts per million; —: data not available or applicable; µg/m^3: micrograms per cubic meter; ***:** there was insufficient data to determine the value

[a] Concentration units for O_3, CO, and NO_2 are in ppm. Concentration units for PM10 and PM2.5 are in micrograms per cubic meter (µg/m^3).

[b] For annual standards, a value of 1 indicates that the standard has been exceeded.

[c] PM10 data are recorded separately for federal and State purposes because the USEPA and California methods are slightly different. Federal values are shown. PM10 is measured every 6 days; the number of days exceeding standards is projected to a 365-day base from the measurements.

Source: California Air Resource Board, 2009f.

5.3.2 Attainment Designations

Based on monitored air pollutant concentrations, the USEPA and the CARB designate an area's status in attaining the NAAQS and CAAQS, respectively, for the criteria pollutants identified above. As previously addressed in Sections 2.4.1 and 2.4.2, when a region is designated as a nonattainment area, the State is required to prepare a SIP and the air district is required to prepare a regional attainment plan. When an area has been reclassified from a nonattainment to an attainment area for a federal standard, the status is identified as "maintenance", and there must be a plan and measures that will keep the region in attainment for the following ten years. Table 7 summarizes the attainment status in the SoCAB for the criteria pollutants.

TABLE 7
ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SOUTH COAST AIR BASIN

Pollutant	State	Federal
O_3 (1 hour)	Nonattainment	No standard
O_3 (8 hour)		Severe 17 Nonattainment[a]
PM10	Nonattainment	Serious Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
All others	Attainment/Unclassified	No standards

[a] In the 2007 AQMP, the SCAQMD requested reclassification to Extreme Nonattainment; as of September 2009, the USEPA has not responded to the request.

Source: CARB 2009g; SCAQMD 2007a.

5.3.3 Toxic Air Contaminants

Carcinogenic risks (i.e., cancer risks) are estimated as the incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a probability (e.g., 10 in 1 million). A risk level of 1 in a million implies a likelihood that up to 1 person, out of 1 million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the specific concentration over 70 years (an assumed lifetime). This would be in addition to those cancer cases that would normally occur in an unexposed population of one million people (USEPA 2009b). The Hazard Index (HI) expresses the potential for chemicals to result in non-cancer-related health impacts. HIs are expressed using decimal notation (e.g., 0.001). A calculated HI exposure less than 1.0 will likely not result in adverse non-cancer-related health effects over a lifetime of exposure. However, an HI greater than 1.0 does not necessarily mean that adverse effects will occur (USEPA 2009b). Pursuant to SCAQMD Rule 1401(d)(1), the risks associated with potential exposure to emissions from a source equipped with the best available control technology for toxics (T-BACT) and from all emissions sources included within a "project" are acceptable if the incremental cancer risk (1) is less than 10 in 1 million and (2) is less than 1 in 1 million for sources not equipped with T-BACT.

The Multiple Air Toxics Exposure Study III (MATES III) is a monitoring and evaluation study conducted in the SoCAB. The study is a follow up to previous air toxics studies in the SoCAB and is part of the SCAQMD Governing Board's 2003–2004 Environmental Justice Workplan.

The MATES III Study consists of several elements, including a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the SoCAB. The study focuses on the carcinogenic risk from exposure to air toxics. It does not estimate mortality or other health effects from particulate exposures.

The MATES III study estimates that the carcinogenic risk from air toxics in the SoCAB, based on the average concentrations at the fixed monitoring sites during 2004, 2005, and 2006 is about 1,200 per 1 million. This risk refers to the expected number of additional cancers in a population of 1 million individuals that are exposed over a 70-year lifetime. Using the MATES III methodology, about 94 percent of the risk is attributed to emissions associated with mobile sources, and about 6 percent of the risk is attributed to toxics emitted from stationary sources,

which include industries and businesses such as dry cleaners and chrome plating operations. The results indicate that diesel exhaust is the major contributor to air toxics risk, accounting, on average, for about 84 percent of the total (SCAQMD 2008a).

The MATES III study used monitored data to model risk throughout the SoCAB. The modeled carcinogenic risk for the area including the Project site is 565 per 1 million, which is less than half of the SoCAB average.

SECTION 6.0 AIR QUALITY IMPACTS

6.1 THRESHOLDS OF SIGNIFICANCE

6.1.1 Air Quality

The following threshold criteria are from the City of Newport Beach Initial Study Checklist. The Project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SCAQMD has established significance thresholds to assess the regional and localized impacts of project-related air pollutant emissions. The significance thresholds are updated as needed to appropriately represent the most current technical information and attainment status in the SoCAB. Table 8 presents the most current significance thresholds including regional daily thresholds for short-term construction and long-term operational emissions; maximum incremental cancer risk and hazard indices for TACs; and maximum ambient concentrations for exposure of sensitive receptors to localized pollutants. A project with daily emission rates, risk values, or concentrations below these thresholds is generally considered to have a less than significant effect on air quality.

TABLE 8
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds[a]		
Pollutant	Construction	Operation
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants		
TACs[b]	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to Rule 402[c]	
Ambient Air Quality For Criteria Pollutants[d]		
NO_2	1-hour average ≥ 0.18 ppm Annual average ≥ 0.03 ppm	
PM10	24-hour average ≥ 10.4 µg/m^3 (construction) 24-hour average ≥ 2.5 µg/m^3 (operation) Annual average ≥ 1.0 µg/m^3	
PM2.5	24-hour average ≥ 10.4 µg/m^3 (construction) 24-hour average ≥ 2.5 µg/m^3 (operation)	
Sulfate	24-hour average ≥ 1.0 µg/m^3	
CO	1-hour average ≥ 20.0 ppm (State) 8-hour average ≥ 9.0 ppm (State/federal)	

lbs/day – pounds per day; ppm – parts per million; µg/m^3 – micrograms per cubic meter

[a] Source: SCAQMD 2009b.

[b] Toxic air contaminants (carcinogenic and non-carcinogenic).

[c] Rule 402 states that a project shall not "discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

[d] Ambient air quality threshold based on SCAQMD Rule 403.

6.1.2 Climate Change

There are no established federal, State, or local significance criteria for global climate change impacts or GHG emissions.

As described in Section 4.2, the June 2008 OPR Technical Advisory encouraged lead agencies to analyze GHG emissions in environmental documents and to follow three basic steps: (1) identify and quantify the GHG emissions that could result from a proposed project; (2) analyze the effects of those emissions and determine whether the effect is significant; and (3) identify feasible mitigation measures or alternatives that will reduce the impact to below a level of significance if the impact is significant (OPR 2008). In April 2009, the OPR issued proposed revisions to the CEQA guidelines. The OPR proposals leave the selection of specific significance criteria to lead agencies in a similar manner as occurs for criteria pollutants.

It is accepted as very unlikely that any individual development project would have GHG emissions of a magnitude to directly impact global climate change; therefore, any impact would be considered on a cumulative basis. For purposes of the CEQA analysis for the proposed Project, and considering the most recent proposed revisions to the CEQA Guidelines, the following significance criteria will be used to analyze impacts to global climate change.

The Project would create a significant cumulative contribution to global climate change if it would:

- Impede achievement of the State's mandatory requirement under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

6.2 METHODOLOGY

6.2.1 Construction and Operations Mass Daily Emissions

Construction and Operational Mass Daily Emissions

Construction and operational emissions were calculated by using Urban Emissions Model (URBEMIS) Version 9.2.4 (Rimpo and Associates 2008). URBEMIS is a computer program accepted by the SCAQMD that can be used to estimate anticipated emissions associated with land development projects in California by calculating emission rates for criteria pollutants utilizing the EMission FACtor model (EMFAC 2007) for on-road vehicles, OFFROAD 2007 for off-road vehicles, and USEPA formulas. URBEMIS has separate databases for specific counties and air districts. The Orange County database was used for the proposed Project. The model calculates emissions of VOC and NOx (ozone precursors), CO, SO_2, PM10, and PM2.5.[6] The results are expressed in pounds per day (lbs/day) and are compared with the mass daily thresholds, as shown in Table 5, to determine impact significance.

Specific inputs to URBEMIS for both construction and operations include Project land uses and acreages. Construction input data include but are not limited to the start and finish dates of Project construction phases; inventories of construction equipment to be used during each phase; volumes of structures to be demolished; volumes of cut and fill grading and materials to be imported to and exported from the site; areas to be paved; and areas to be painted. Output emissions data sources include off-road equipment, on-road vehicles, fugitive dust, and VOCs from asphalt and architectural coatings.

Operational inputs include year of operations and vehicle trip generation rates. Model default values for trip distances, fleet composition, and other factors may be adjusted for project-specific conditions. Output operational emissions data sources include area sources and mobile sources. The area sources are natural gas use, fireplaces, landscape maintenance equipment, architectural coatings used for routine maintenance, and consumer products that include VOCs. Mobile sources are the vehicles used by residents and by patrons, staff, and vendors for commercial businesses.

The URBEMIS model includes data to calculate emissions reductions resulting from the implementation of mitigation measures.

[6] URBEMIS also calculates carbon dioxide (CO_2) emissions. CO_2 is not a criteria pollutant, but the data is used in analysis of project impacts on global climate change.

6.2.2 Local Concentrations of Criteria Pollutants

As part of the SCAQMD's environmental justice program, attention has focused on localized effects of air quality (SCAQMD 2008b). In addition to the mass daily emissions, or regional thresholds, the SCAQMD established CEQA significance thresholds for ambient air quality (Table 8) to address localized impacts. SCAQMD staff then developed localized significance threshold (LST) methodology and mass rate look-up tables by SRA that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or State ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each SRA (SCAQMD 2008b). The LST methodology translates the concentration standards into emissions thresholds that are a function of Project site area, source to receptor distance, and the location within the SoCAB. The LST methodology is recommended to be limited to projects of five acres or less and avoids the need for complex dispersion modeling. Although the Project site is larger than five acres, the method is used because it is anticipated that mass grading activities, which would be the source of maximum daily localized emissions, would occur on any single day within an area of approximately five acres.

The local concentration analysis is performed for Project construction activities. The analysis is not performed for operations because there would be no notable on-site long-term sources of pollutants.

6.2.3 CO Hotspots

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. An initial screening procedure is provided in the procedures and guidelines contained in the Transportation Project-Level Carbon Monoxide Protocol (the CO Protocol) to determine whether a project poses the potential for a CO hotspot (UCD ITS 1997). According to the protocol, projects may make air quality worse if they (1) increase the percentage of vehicles in cold start modes by two percent or more; (2) increase traffic volumes by five percent or more over existing volumes; or (3) make traffic flow worse, which is defined for signalized intersections as increasing average delay at intersections operating at Level of Service (LOS) E or F, or causing an intersection that would operate at LOS D or better without a project to operate at LOS E or F with a project.

6.2.4 Construction and Operational GHG Emissions

Construction and operational emissions of CO_2 were calculated using URBEMIS. To convert to CO_2e, the CO_2 values are multiplied by factors relating CH_4 and N_2O emissions to CO_2 emissions for diesel engines and then converted to the metric equivalent. The diesel engine conversion data is taken from the CCAR General Reporting Protocol (CCAR 2009).

Because impacts from construction activities occur over a relatively short time period, they contribute a relatively small portion of the overall GHG emissions for the lifetime of the Project. In addition, GHG emission reduction measures for construction equipment are relatively limited. Therefore, in their Draft Guidance Document, Interim CEQA GHG Significance Thresholds, the SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies (SCAQMD 2008c). That methodology is used in this analysis.

6.2.5 GHG Emissions From Electricity Use

GHG emissions resulting from electrical energy use were calculated by using an estimate of electrical use provided by the City. The GHG data were then calculated using emissions data from the CCAR General Reporting Protocol for CO_2 electricity use in California.

6.2.6 GHG Emissions From Water Use

GHG emissions are associated with energy embodied in water demand. Water provided to the Project site is embodied with energy by virtue of the amount of energy consumed in collecting, extracting, conveying, treating, and distributing water to end users, and in treating and disposing of wastewater. An estimate of water use was provided by the City. Data from the California Energy Commission (CEC) indicates that potable water delivered to Southern California has an embodied energy of 13,022 kilowatt-hours per million gallons (kWh/MG) when used indoors, (i.e., subsequently treated as wastewater) and 11,111 kWh/MG when used outdoors (CEC 2006b). Embodied energy of water consumption was converted to GHG emissions using the CCAR General Reporting Protocol emissions factor for CO_2 in electricity use in California.

6.3 CONFORMANCE TO FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

6.3.1 Construction Emissions

Temporary impacts would result from project construction activities. Air pollutants would be emitted by off-road and on-road construction equipment and worker vehicles; fugitive dust would be generated during demolition and grading on the Project site. Other construction activities that emit pollutants include painting, surface coating, and asphalt paving operations. For this analysis, it was assumed that construction would start in January 2011 and continue through March 2012. Construction emissions were calculated using URBEMIS (Version 9.2.4), as described in the Methodology Section, for a series of phases with phase overlapping as appropriate. Inputs to the URBEMIS program include land use data and construction information provided by the City of Newport Beach. The initial construction phase would involve the clearing and grubbing of the Project site with an average of ten truckloads per day of vegetation disposed of off site. Mass grading of the park site and haul roads would include the on-site cut and fill of approximately 130,000 cy of cut and 96,000 cy of fill, with a net export of approximately 34,000 cy (Scenario A). It is anticipated that most of the exported soil would be placed on the adjacent Newport Banning Ranch property, with a round trip haul distance of less than one mile. However, some soil may be exported off site to a destination not determined at this time. For purposes of calculating maximum daily emissions, a reasonable worst case haul distance of 40 miles per round trip was used, based on known available spoils sites (Scenario B).

Compliance with SCAQMD Rules is required; specifically, construction would be performed in accordance with Rule 403, Fugitive Dust. Therefore, dust-control measures have been included in the calculations. The details of phasing, selection of construction equipment, areas to be paved, and other input parameters are included in URBEMIS input and output data in Appendix A of this report.

Mass Emissions Thresholds – Maximum Daily Regional Emissions. The results of the URBEMIS calculations for Project construction are shown in Table 9. The data are presented as the maximum anticipated daily emissions for comparison with the SCAQMD mass daily thresholds.

The maximum VOC, NOx, PM10, and PM2.5 emissions shown in Table 9 would occur during the mass grading phase. The maximum CO emissions would occur subsequent to grading,

during the concurrent building activities within the park and during the West Coast Highway improvements. The construction emissions calculations indicate that the on-road export of excavated soil during the mass grading phase would be the critical factor for NOx emissions. As mentioned previously, the destination for disposal of the soil would not be known until the time of construction and a reasonable worst case value of 40 miles round trip for soil export was used. Based on this default value and assuming a 5 day per week, 13-week export duration, NOx emissions associated with transporting soil would exceed the SCAQMD thresholds for maximum day emissions, thus resulting in a significant impact. The principal contribution to this exceedance would be the on-road transport of exported soil, with NOx emissions of approximately 84 pounds per day. For this scenario, haul trucks vehicles miles traveled (VMT) would be approximately 1,308 miles per day.

TABLE 9
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS
(POUNDS/DAY)

Scenario and Year Without Mitigation	VOC	NOx	CO	SOx	PM10	PM2.5
Scenario A 2011: Soil exported to Newport Banning Ranch	10	84	84	<0.5	40	11
Scenario B 2011: Soil exported to an undetermined destination – 65 working days[a]	1	**120**	84	<0.5	42	12
Scenarios A and B 2012	5	27	45	<0.5	12	4
Maximum day for construction	11	**120**	84	<0.5	41	12
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Exceeds SCAQMD Thresholds?	**No**	**Yes**	**No**	**No**	**No**	**No**

Bold and underline indicates exceedance of threshold.

[a] Working days assumes construction 5 days a week for 13 weeks.

Source: BonTerra Consulting 2009.

In order to reduce the NOx emissions for Scenario B to less than the 100 pound per day CEQA significance threshold, soil export hauling would have to be reduced to 540 VMT per day. With this limitation, and if a spoils site could not be found closer than 20 miles from the project site, the mass grading period would need to be extended to approximately 30 weeks or more. This would not be a reasonable mitigation because a substantial extension of the mass grading phase would result in prolonged associated noise impacts, as well as negative impacts to the project costs and schedule.

Ambient Air Quality for Criteria Pollutants – Local Significance Thresholds

Local pollutant concentrations were calculated using the SCAQMD LST methodology described previously. The results of the LST calculations are shown in Table 10; the emissions identified in Table 10 are less than those in Table 9. In the LST analysis, only on-site emissions are considered; thus, off-site emissions such as haul trucks and workers commuting are not included. The applicable thresholds were taken from the LST mass rate look-up tables. For purposes of analysis, the active grading/construction area was identified as five acres and the Project location is within SRA 18, North Coastal Orange County. The closest sensitive receptors to the site are the Newport Crest condominiums, located to the north and northeast; Hoag Hospital, located to the southeast across Superior Avenue; and residences across West Coast Highway to the southwest.

TABLE 10
LOCAL SIGNIFICANCE THRESHOLD EMISSIONS

	NOx	CO	PM10	PM2.5
	Emissions (lbs/day)			
Maximum daily emissions	84	84	40	11
LST Thresholds at 25 meters (82 feet)[a]	100[b]	550[b]	14	9
Exceeds threshold?	**No**	**No**	**Yes**	**Yes**
LST Thresholds at 50 meters (164 feet)[a]	100[b]	550[b]	44	11
Exceeds threshold?	**No**	**No**	**No**	**No**

lbs/day: pounds per day

[a] Data from mass rate look-up tables are given in meters

[b] Mass daily emissions thresholds are shown because the LST table values for NOx and CO are greater than the mass emissions thresholds.

Source: SCAQMD 2008b.

As shown in Table 10, the maximum daily NOx and CO emissions would be below the LST thresholds. When the grading work would be concentrated within 50 meters (164 feet) of sensitive receptors, maximum daily estimated PM10 and PM2.5 emissions would exceed the thresholds and indicate a potential for local particulate matter concentrations in excess of the 24-hour standards at receptors within that distance. When the grading work would be concentrated at distances greater than 164 feet from sensitive receptors, the thresholds would not be exceeded. Approximately 25 percent of the Project site is located within 164 feet of the Newport Crest condominiums; all other nearby receptors are located more than 164 feet from the site. Therefore, the LST analysis indicates a potentially significant impact at the Newport Crest condominiums.

The Project would be required to implement SCAQMD Rule 403, Fugitive Dust, and the maximum particulate emission reductions available in the URBEMIS model have been included in the calculations. Rule 403 represents the feasible mitigation measures for dust control, and prohibits visible dust beyond the property line of the Project site. This limitation may result in a reduction of impacts, but the reduction cannot be quantified. Additionally, because the condominiums are located at an elevation higher than the elevation where most grading would occur, concentrations would likely be less than implied by the analysis; however, this reduction cannot be quantified. Therefore, the local PM10 and PM2.5 impact would be significant and unavoidable for the short-term periods when mass grading would occur near the condominiums.

6.3.2 Operational Emissions

Mobile source emissions for the proposed Project were calculated using the URBEMIS model described previously, and assume an estimated 173 vehicle trips per day during project operation, as stated in the project traffic impact analysis (Kimley-Horn 2009).The principal area source emissions would be the exhaust from gasoline-powered landscape maintenance equipment, calculated manually using OFFROAD 2007, and an estimate of two hours per week of lawn mowing. The results of the calculations are shown in Table 11.

TABLE 11
ESTIMATED MAXIMUM DAILY OPERATIONAL EMISSIONS (POUNDS/DAY)

Project Buildout[a]	VOC	NOx	CO	SOx	PM10	PM2.5
Proposed Project						
Area Source Emissions	2	<0.5	10	<0.5	<0.5	<0.5
Vehicle Emissions	1	2	15	<0.5	3	1
Total	3	2	25	<0.5	3	1
SCAQMD Thresholds	***55***	***55***	***550***	***150***	***150***	***55***
Exceeds SCAQMD Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

[a] The Project opening year is planned for 2012, therefore; the analysis year for is 2013 based on the City's requirements for future traffic forecasts to be developed for the year following project opening.

As shown in Table 11, the estimated maximum daily operational emissions would be less than the SCAQMD CEQA thresholds. Therefore, operational impacts would be less than significant; no mitigation measures would be required.

Summary

During the anticipated three-month mass grading phase, NOx emissions could exceed the SCAQMD CEQA significance thresholds on days when, and if, soil is exported to distant off-site spoils locations. This temporary impact would be significant and unavoidable because mitigation could exacerbate noise impacts by extending the Project construction schedule.

During the periods of mass grading when work would be concentrated within 164 feet of the Newport Crest condominiums, particulate emissions from the Project site have the potential for a short-term exceedance of the 24-hour PM10 and PM2.5 ambient air quality standards at the nearest residences. This impact would be significant and unavoidable.

Long-term operational emissions would also be less than the SCAQMD thresholds.

6.4 EXPOSURE OF SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS

6.4.1 Carbon Monoxide Hotspots

An initial screening for the Project's potential to create a CO hotspot was conducted in accordance with the CO Protocol. The traffic volumes generated by the proposed Project (i.e., a maximum of 15 vehicles added to an existing volume of more than 2,000) would not be large enough to increase the percentage of vehicles in cold start modes by two percent or more or increase overall traffic volumes by five percent or more over existing volumes. The Project's traffic analysis (Kimley-Horn 2009) indicates that, under the Cumulative With Project scenario, all study area signalized intersections except one would operate at LOS D or better. The intersection of West Coast Highway at Newport Boulevard would operate at LOS E in the AM peak hour; however, the operating condition (Intersection Capacity Utilization = 0.92) would be unchanged from the Cumulative Without Project scenario. Therefore, the Project would not worsen traffic conditions and would not have the potential to create a CO hotspot. The impact would be less than significant.

6.4.2 Criteria Pollutants From On-Site Construction

As described in the Ambient Air Quality for Criteria Pollutants discussion of Section 6.3.1 above, there is a potential to expose the residents of the Newport Crest condominiums to PM10 and

PM2.5 emissions that exceed the 24-hour ambient air quality standard on some days during the mass grading phase of the Project, thereby resulting in a significant and unavoidable impact.

6.4.1 TOXIC AIR CONTAMINANTS

Construction activities would result in short-term, Project-generated emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment used for site preparation (e.g., demolition, excavation, and grading); paving; building construction; and other miscellaneous activities. CARB identified diesel PM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual (MEI) are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with a proposed project. Project-generated or construction-related emissions of TACs would not expose sensitive receptors to substantial emissions of TACs because (1) the use of off-road, heavy-duty diesel equipment would be temporary (short in duration when compared to 70 years); diesel PM has highly dispersive properties; and (3) further reductions in exhaust emissions from improved equipment would occur. The impact would therefore be less than significant.

6.5 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

The region is a nonattainment area for PM10, PM2.5, and the ozone precursors VOC and NOx. The Project would contribute criteria pollutants to the area during short-term project construction and Project operations. As described in Section 6.3.1 above, NOx emissions could exceed the threshold during the three-month mass grading period. These exceedances would result in a cumulatively considerable contribution to regional O_3 concentrations.

With respect to local impacts, cumulative construction particulate impacts are considered when projects may be within a few hundred yards of each other. There are no known projects within one-half mile of the proposed Project where major construction would occur concurrently with the proposed Project.

Long-term emissions of nonattainment pollutants would be less than six percent of the SCAQMD thresholds. These quantities are not of a magnitude to be cumulatively considerable. Therefore, the Project would have a less than significant cumulative air quality impact. No mitigation is required.

6.6 CONFORMANCE TO THE AQMP

The two principal criteria for conformance to the AQMP are (1) whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards and (2) whether the project will exceed the assumptions in the AQMP (SCAQMD 1993).

With respect to the first criterion, the analysis in Section 6.3.1 above demonstrates that the Project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards.

With respect to the second criterion, the current Newport Beach General Plan land use designations for the Project site are Parks and Recreation (13.7 acres) and Open Space/Residential Village (5.2 acres). The access road to the park is proposed on private property (Newport Banning Ranch) to the west which has the Open Space/Residential Village General Plan land use designation. The proposed access road is permitted under this General Plan designation and would be constructed in the general location shown on the City's General Plan Circulation Element Master Plan of Streets and Highways and the Orange County Master Plan of Arterial Highways (MPAH). The AQMP assumptions for mobile source emissions are based on assumed trip generation and trip distances, which are, in turn, based on proposed uses in general plans. Therefore, the proposed project is consistent with the assumptions used in the AQMP and the impact would be less than significant.

6.7 ODORS

Project construction equipment and activities would generate odors typical of a construction site. Potential construction odors include diesel exhaust emissions and asphalt from paving operations. There would be situations where construction activity odors would be noticed by nearby residents, but these odors would not be unfamiliar or necessarily objectionable. Additionally, the odors would be temporary and would dissipate rapidly from the source with an increase in distance. Therefore, the impacts would be short-term, would not likely be objectionable, and would be less than significant.

No barbeque facilities are currently proposed as a part of the Project. However, should such facilities be provided in the future, these odors would not be objectionable and are typical to a park or residential area. The impact would be less than significant.

6.8 GLOBAL CLIMATE CHANGE

6.8.1 Calculated GHG Emissions

Construction Emissions

Temporary impacts would result from Project construction activities. GHGs would be emitted by off-road and on-road construction equipment and worker vehicles. Construction emissions were calculated using URBEMIS (Version 9.2.4), as described in the Methodology section and in Section 6.3.1. The details of phasing, selection of construction equipment, areas to be paved, and other input parameters are included in Appendix A of this report. The results of the URBEMIS calculations for GHGs from Project construction are shown in Table 12. GHG emissions would vary depending on how much soil would be exported to the Newport Banning Ranch site and how much soil would be exported to an undetermined destination off site, as discussed in Section 6.3.1. Because these quantities are not known, the GHG emissions of 925 $MTCO_2e$ for 2011 represents the reasonable worst case, Scenario B, assuming that all soil would be exported to a site 20 miles from the project site.

TABLE 12
ESTIMATED GHG EMISSIONS FROM CONSTRUCTION

Year	Emissions $MTCO_2e$
2011	925
2012	186
Total	**1,111**
MTCO2e: metric tons of CO_2 equivalent	

Operational Emissions

Operational GHG emissions for the proposed Project were calculated based on the information from the Project's traffic impact analysis (Kimley-Horn 2009) and estimates from the City regarding water consumption, electricity consumption, and lawn mowing frequency. The results of the calculations are shown in Table 13. URBEMIS data sheets and details of the electricity and water use calculations are included in Appendix A.

TABLE 13
ESTIMATED GHG EMISSIONS FROM OPERATIONS

Source	Emissions $MTCO_2e/yr$
Proposed Project at Buildout	
Area sources[a]	3
Mobile sources	255
Electricity use	<1
Water use	43
Total – Proposed Project	***300***
$MTCO_2e$: metric tons of CO_2 equivalent Total does not add due to rounding. [a] Landscaping equipment	

Combined Emissions

As described in the Methodology section, construction and operational emissions are combined by amortizing the construction operations over a conservative, assumed 30-year Project lifetime. This combination is shown in Table 14.

TABLE 14
ESTIMATED TOTAL PROJECT ANNUAL GHG EMISSIONS

Source	Emissions $MTCO_2e/yr$
Construction (Table 12)	1,111
Construction amortized	37
Operations (Table 13)	300
Total	337
Total is the sum of amortized construction and operational emissions.	

The total annual estimated GHG emissions for the proposed Project is 337 $MTCO_2e/yr$. This value is less than the 1,600 $MTCO_2e$ per year screening level interim threshold adopted by the City of Newport Beach. Based on that threshold, the proposed Project would be less than significant for global climate change impacts and no further analysis is required.

6.8.2 Conformance to Applicable Plans, Policies, and Regulations

The California Attorney General publishes and periodically updates The California Environmental Quality Act – Addressing Global Warming Impacts at the Local Agency Level (DOJ 2008). This publication includes a list of project-level measures suggested by the State Attorney General to reduce GHG emissions and global warming impacts.

Table 15 lists the Attorney General's list of project-level measures. For each applicable measure, the right-hand column of the table shows Project Design Features, operational plans, or Project setting that responds to the measure.

TABLE 15
APPLICATION OF ATTORNEY GENERAL'S RECOMMENDED GREENHOUSE GAS MITIGATION MEASURES TO SUNSET RIDGE PARK PROJECT

ID	Suggested Mitigation Measures	Proposed Project
Water Conservation and Efficiency		
1	Create water-efficient landscapes.	The Project assumes the use of drought-tolerant plant materials to the degree feasible for the park.
2	Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.	Water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls, will be installed throughout the Project site.
3	Design buildings to be water-efficient. Install water-efficient fixtures and appliances.	The building will be designed to be water-efficient. Water-efficient fixtures and appliances will be installed in the restrooms.
4	Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.	Watering methods will be restricted (e.g., systems that apply water to non-vegetated surfaces will be prohibited) and runoff will be controlled in accordance with City of Newport Beach Best Management Practices.
5	Implement low-impact development (LID) practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment. (Retaining storm water runoff on-site can drastically reduce the need for energy-intensive imported water at the site.)	Low-impact development (LID) practices that maintain the existing hydrologic character of the site will be implemented to manage storm water and to protect the environment. (Retaining storm water runoff on site can drastically reduce the need for energy-intensive imported water at the site.) Please refer to Section 4.10, Hydrology and Water Quality, of this EIR which addresses the Project features.
6	Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project.	The City of Newport Beach Water Conservation Ordinance, Section 14.16 of the Municipal Code will be applicable to the Park. The ordinance includes but is not limited to the LID practices of PDF 4.4-5 and a requirement for an approved water use plan prior to the issue of a grading permit.
Land Use Measures		
7	Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.	Approximately 130 to 140 trees will be planted where there are now no existing trees, thus increasing GHG sequestration.
Source: Department of Justice, 2008; City of Newport Beach 2009		

6.9 DETERMINATION OF SIGNIFICANCE

As shown in Section 6.8.1, Table 14, and the accompanying discussion, the estimated total Project GHG emissions would be less than the screening level interim threshold adopted by the City of Newport Beach; therefore, impacts related to GHG emissions and global climate change would be less than significant

As shown in Section 6.8.2 and Table 15, the proposed Project would be consistent with applicable measures recommended by the California Attorney General to reduce GHG emissions and with City of Newport Beach General Plan policies that would result in minimizing GHG emissions.

SECTION 7.0 MITIGATION MEASURES

7.1 STANDARD CONDITIONS AND REQUIREMENTS

SC 4.4-1 During construction of the proposed Project, the Contractor shall be required to comply with SCAQMD Rules 402 and 403, which shall assist in reducing short-term air pollutant emissions. SCAQMD Rule 402 requires that air pollutant emissions not be a nuisance off site. SCAQMD Rule 403 requires that fugitive dust be controlled with the best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. This requirement shall be included as notes on the contractor specifications. Table 1 of Rule 403 prescribes the Best Available Control Measures that are applicable to all construction projects. The measures include, but are not limited to the following:

- Clearing and grubbing - Apply water in sufficient quantity to prevent generation of dust plumes.
- Cut and fill - Pre-water soils prior to cut and fill activities and stabilize soil during and after cut and fill activities.
- Earth moving activities - Pre-apply water to depth of proposed cuts; re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and stabilize soils once earth-moving activities are complete.
- Importing/exporting of bulk materials - Stabilize material while loading to reduce fugitive dust emissions; maintain at least six inches of freeboard on haul vehicles; and stabilize material while transporting to reduce fugitive dust emissions.
- Stockpiles/bulk material handling - Stabilize stockpiled materials; stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.
- Traffic areas for construction activities - Stabilize all off-road traffic and parking areas; stabilize all haul routes; and direct construction traffic over established haul routes.

7.2 MITIGATION MEASURES

No mitigation measures are required. The suggested measures to reduce GHG emissions listed in Table 15 above should be incorporated into the proposed Project as project design features.

SECTION 8.0 REFERENCES

California Air Resources Code (CARB). 2009a (August 26). *Recommended Area Designations for the 2008 Federal Lead Standard, Staff Report.* Sacramento, CA: CARB. http://www.arb.ca.gov/desig/Pbstfrpt.pdf.

———. 2009b (April 19, last reviewed). Health Effects of Diesel Exhaust. Sacramento, CA: CARB. http://www.arb.ca.gov/research/diesel/diesel-health.htm.

———. 2009c (August 7). *Staff Report: Initial Statement of Reasons For Rulemaking, Notice of Public Hearing to Consider Proposed Amendments to New Passenger Motor Vehicle Greenhouse Gas Emission Standards*. Sacramento, CA: CARB. http://www.arb.ca.gov/regact/2009/ghgpv09/ghgpvisor.pdf.

———. 2009d (April 23). News Release, California Adopts Low Carbon Fuel Standard. Sacramento, CA: CARB. http://www.arb.ca.gov/newsrel/nr042309b.htm.

———. 2009e (March 24). *ARB Staff Report, Status Report on the State Strategy for California's 2007 State Implementation Plan (SIP) and Proposed Revision to the SIP Reflecting Implementation of the 2007 State Strategy*. Sacramento, CA: CARB. http://www.arb.ca.gov/planning/sip/meetings/sipupdatereport.pdf.

———. 2009f (July 28, access date). Air Quality Data Statistics. Sacramento, CA: CARB. http://www.arb.ca.gov/adam/welcome.html.

———. 2009g (May 20, last reviewed). Area Designation Maps/State and National. Sacramento, CA: CARB. www.arb.ca.gov/desig/adm/adm.htm/.

———. 2008a (November 17). *Ambient Air Quality Standards*. Sacramento, CA: CARB. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

———. 2008b (February). *Comparison Of Greenhouse Gas Reductions For The United States And Canada Under U.S. CAFE Standards And California Air Resources Board Greenhouse Gas Regulations, An Enhanced Technical Assessment.* Sacramento, CA: CARB. http://www.climatechange.ca.gov/publications/arb/ARB-1000-2008-012/ARB-1000-2008-012.PDF.

———. 2008c (October 24). *Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*. Sacramento, CA: CARB.

———. 2008d (October). *Climate Change Proposed Scoping Plan, a Framework for Change.* Sacramento, CA: CARB.

———. 2008e (February). Letter to Mr. Wayne Nastri, USEPA, submitting additional technical information supporting reasonable further progress demonstration for the South Coast SIP. Sacramento, CA: CARB http://www.arb.ca.gov/planning/sip/2007sip/southcoast/rev_rfp_sc-sjv-submittal.pdf.

———. 2007a (November). Draft California Greenhouse Gas Inventory (millions of metric tonnes of CO_2 equivalent) — By IPCC Category (a spreadsheet). Sacramento, CA: CARB. http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_00-06_all_2009-03-13.pdf.

———. 2007b (November 28). Letter to Mr. Wayne Nastri, USEPA, submitting revisions to the California State Implementation Plan, including revisions identified as the 2007 South Coast SIP. Sacramento, CA: CARB. http://www.arb.ca.gov/planning/sip/2007sip/southcoast/scsipsubltr.pdf.

California Climate Action Registry (CCAR). 2009 (January). *California Climate Action Registry General Reporting Protocol*, Version 3.1. Los Angeles, CA: CCAR.

California Climate Change Center (CCCC). 2006 (July). *Our Changing Climate: Assessing the Risks to California* (Publication CEC-500-2006-077). Berkeley, CA: CCCC. http://meteora.ucsd.edu/cap/pdffiles/CA_climate_Scenarios.pdf.

California Department of Justice (DOJ). 2008 (December). *The California Environmental Quality Act – Addressing Global Warming Impacts at the Local Agency Level,* Sacramento, CA: DOJ. http://ag.ca.gov/globalwarming/pdf/GW_mitigation_ measures.pdf.

California Energy Commission (CEC). 2007. *2007 Integrated Energy Policy Report* (CEC-100-2007-008-CMF). Sacramento, CA: CEC.

———. 2006a (December). *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004* (Staff Final Report, Publication CEC-600-2006-013-SF). Sacramento, CA: CEC. http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF.

———. 2006b (December). *Refining Estimates of Water-Related Energy Use in California* (CEC-500-2006-118, prepared by Navigant Consulting). Sacramento, CA: CEC.

California Governor's Office of Planning and Research (OPR). 2009 (April 13). Letter to Honorable Mike Chrisman, California Secretary for Natural Resources, Natural Resources Agency, regarding Transmittal of the Governor's Office of Planning and Research's Proposed S897 CEQA Guidelines Amendments to the Natural Resources Agency. Sacramento, CA: OPR. http://www.opr.ca.gov/ceqa/pdfs/Transmittal_%20Letter.pdf.

———. 2008 (June 18). *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review.* Sacramento, CA: OPR. http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf.

Henson, R. 2006. *Rough Guide to Climate Change* (1st ed.). London, England: Rough Guides Ltd.

Howrey Global Climate Law Blog (Howrey). 2009 (June 26). Global Climate Change Law Blog: American Clean Energy and Security Act (H.R. 2454) Passed by House. Washington D.C.: Howrey LLP. http://www.globalclimatelaw.com/2009/06/articles/environmental/american-clean-energy-and-security-act-hr-2454-passed-by-house/print.html.

Intergovernmental Panel on Climate Change (IPCC). 2007 (February). *Climate Change 2007: The Physical Science Basis. Summary for Policymakers* (Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change). Boulder, CO: IPCC, Working Group I.

Kimley-Horn and Associates, Inc. 2009 (June). *Traffic Impact Study for Sunset Ridge Park in the City of Newport Beach*. Orange.

Newport Beach, City of. 2008 (April 9). Task Force on Green Development. Newport Beach, CA: the City. http://www.newportbeachca.gov/Modules/ShowDocument.aspx?documentid=72.

———. 2006 (November 7, approval date). *City of Newport Beach General Plan*. Newport Beach, CA: the City. http://www.newportbeachca.gov/index.aspx?page=173.

OpenCongress. 2009. H.R. 2454 American Clean Energy and Security Act of 2009. New York, NY: OpenCongress. http://www.opencongress.org/bill/111-h2454/show.

Rimpo and Associates. 2008 (February). URBEMIS 2007 (Version 9.2.4). www.urbemis.com.

Southern California Association of Governments (SCAG). 2008 (January). Draft 2008 Regional Transportation Plan Program Environmental Report, Chapter 3.2 Air Quality. Los Angeles, CA: SCAG. http://www.scag.ca.gov/RTPpeir2008/draft/index.htm.

South Coast Air Quality Management District (SCAQMD). 2009a. AQMD Meteorological Data for Dispersion Model Application. Diamond Bar, CA: SCAQMD. http://www.aqmd.gov/smog/metdata/MeteorologicalData.html.

———. 2009b (March). *SCAQMD Air Quality Significance Thresholds*. Diamond Bar, CA: SCAQMD. http://www.aqmd.gov/ceqa/handbook/signthres.pdf.

———. 2008a (September). *Final Report, Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES III September 2008*, Executive Summary. Diamond Bar, CA: SCAQMD. http://www.aqmd.gov/prdas/matesIII/Final/Document/ab-MATESIIIExecutive Summary-Final92008.pdf.

———. 2008b (July, as revised). *Final Localized Significance Threshold Methodology*. Diamond Bar, CA: SCAQMD. http://www.aqmd.gov/ceqa/handbook/LST/Method_final.pdf.

———. 2008c (October). *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Thresholds*. Diamond Bar, CA: SCAQMD.

———. 2007 (June). *Final 2007 Air Quality Management Plan.* Diamond Bar, CA: SCAQMD. http://www.aqmd.gov/aqmp/07aqmp/index.html.

———. 1993 (as amended). *CEQA Air Quality Handbook*. Diamond Bar, CA: SCAQMD.

U.S. Environmental Protection Agency (USEPA). 2009a (April 24, last update). Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act. Washington, D.C.: USEPA. http://epa.gov/climatechange/ endangerment.html.

———. 2009b. USEPA Technology Transfer Network National Air Toxics Assessment Glossary of Key Terms. Washington D.C.: USEPA. http://www.epa.gov/ttn/atw/nata2002/gloss1.html.

———. 2008. Climate Change – Greenhouse Gas Emissions. Washington, D.C.: USEPA. http://www.epa.gov/climatechange/emissions/index.html.

U.S. Environmental Protection Agency and U.S. Department of Transportation, Federal Highway Administration (USEPA and FHWA). 2006 (March). Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas. Washington D.C.: USEPA and FHWA.

U.C. Davis Institute of Transportation Studies (UCD ITS). 1997 (December). *Transportation Project-level Carbon Monoxide Protocol*. Davis, CA: UCD ITS.

Western Regional Climate Center (WRCC). 2009a. Period of Record Monthly Climate Summary, Newport Beach Harbor, California (046175). Reno, NV: WRCC. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6175.

World Resources Institute (WRI). 2008. Climate Analysis Indicators Tool (CAIT). Total GHG Emissions in 2000. Washington, D.C.: WRI. http://cait.wri.org/.

SECTION 9.0 LIST OF ACRONYMS AND SYMBOLS

A

AB	Assembly Bill
AAM	Annual Arithmetic Mean
APA	Administrative Procedure Act
AQMP	Air Quality Management Plan

C

C	Celsius
C_2F_6	Hexafluorethane
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CF	Tetrafluoromethane
CH	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
cy	cubic yards

D

diesel PM	diesel particulate matter
du	dwelling unit

F

F	Fahrenheit
FCAA	Federal Clean Air Act

G

GHG	greenhouse gas
GWP	global warming potential

H

H_2S	Hydrogen Sulfide
H_2SO_3	Sulfurous Acid
H_2SO_4	Sulfuric Acid
HFCs	hydrofluorocarbons
HI	Hazard Index
hp	horsepower
HR	House of Representatives

H (cont.)

HRA	Health Risk Assessment

I

IPCC	International Panel on Climate Change
ISCST3	Industrial Source Complex, Short Term Version 3

K

KCAPCD	Kern County Pollution Control District
km	kilometer
kWh	kilowatt hours
kWh/MG	kilowatt hours per million gallons

L

lbs/day	pounds per day
LED	Light-emitting diode
LID	low-impact development
LST	localized significance threshold

M

MATES III	Multiple Air Toxics Exposure Study III
MDAB	Mojave Desert Air Basin
MEI	Maximally Exposed Individual
MG	million gallons
mg/m^3	milligrams per cubic meter
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	metric tons of carbon dioxide equivalent
$MTCO_2e/yr$	metric tons of carbon dioxide equivalent per year
mpg	miles per gallon
MPO	Metropolitan Planning Organization
MRF	Material Recovery Facility

N

N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides

O

O_3	ozone
OPR	California Governor's Office of Planning and Research

P

PFC	perfluorcarbons
PM	Particulate Matter
PM2.5	particulate matter with diameter equal to or less than 2.5 microns
PM10	particulate matter with diameter equal to or less than 10 microns
ppm	parts per million

S

SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
sf	square feet
SF_6	sulfur hexafluroide
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_3	sulfur trioxide
SOx	sulfur oxides
SoCAB	South Coast Air Basin
SRA	Source Receptor Area

T

TAC	Toxic Air Contaminant
T-BACT	best available control technology for toxics

U

USEPA	United Stated Environmental Protection Agency
URBEMIS	Urban Emissions

V

VOC	Volatile Organic Compounds
VTTM	vesting tentative tract map
VMT	vehicle miles traveled
VDE	visible dust emissions

Symbols

°	degrees
$\mu g/m^3$	micrograms per cubic meter

APPENDIX A

URBEMIS CALCULATIONS

9/1/2009 11:33:45 AM

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\BonTerra User\My Documents\Current\Sunset Ridge Park\Air Quality\Urbemis\SunRidge 6dmg 082409 v3 short haul urb024

Project Name: Sunset Ridge Park - 6 day mass grade - short haul 082609

Project Location: Orange County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2011 TOTALS (lbs/day unmitigated)	9.62	84.39	83.64	0.09	375.23	3.74	378.98	78.37	3.44	81.81
2011 TOTALS (lbs/day mitigated)	9.62	84.39	83.64	0.09	36.48	3.74	40.22	7.62	3.44	11.06
2012 TOTALS (lbs/day unmitigated)	4.56	27.03	45.42	0.05	10.21	1.82	12.03	2.16	1.67	3.83
2012 TOTALS (lbs/day mitigated)	4.56	27.03	45.42	0.05	10.21	1.82	12.03	2.16	1.67	3.83

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1.25	1.57	15.19	0.02	2.71	0.52

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1.25	1.57	15.19	0.02	2.71	0.52

Urbemis 2007 Version 9.2.4

Summary Report for Winter Emissions (Pounds/Day)

File Name: C:\Documents and Settings\BonTerra User\My Documents\Current\Sunset Ridge Park\Air Quality\Urbemis\SunRidge 6dmg 082409 v3 short haul.urb924

Project Name: Sunset Ridge Park - 6 day mass grade - short haul 082609

Project Location: Orange County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2011 TOTALS (lbs/day unmitigated)	9.62	84.39	83.64	0.09	375.23	3.74	378.98	78.37	3.44	81.81
2011 TOTALS (lbs/day mitigated)	9.62	84.39	83.64	0.09	36.48	3.74	40.22	7.62	3.44	11.06
2012 TOTALS (lbs/day unmitigated)	4.56	27.03	45.42	0.05	10.21	1.82	12.03	2.16	1.67	3.83
2012 TOTALS (lbs/day mitigated)	4.56	27.03	45.42	0.05	10.21	1.82	12.03	2.16	1.67	3.83

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1.35	1.90	14.63	0.01	2.71	0.52

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1.35	1.90	14.63	0.01	2.71	0.52

9/1/2009 11:34:09 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Mitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\BonTerra User\My Documents\Current\Sunset Ridge Park\Air Quality\Urbemis\SunRidge 6dmg 082409 v3 short haul urb024

Project Name: Sunset Ridge Park - 6 day mass grade - short haul 082609

Project Location: Orange County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total
Time Slice 1/31/2011-2/25/2011 Active	2.36	21.55	11.09	0.01	12.04	1.01	13.05	2.52	0.93	3.45
Fine Grading 01/31/2011-	2.36	21.55	11.09	0.01	12.04	1.01	13.05	2.52	0.93	3.45
Fine Grading Dust	0.00	0.00	0.00	0.00	12.01	0.00	12.01	2.51	0.00	2.51
Fine Grading Off Road Diesel	1.93	16.05	8.39	0.00	0.00	0.79	0.79	0.00	0.73	0.73
Fine Grading On Road Diesel	0.41	5.46	2.01	0.01	0.03	0.21	0.24	0.01	0.20	0.20
Fine Grading Worker Trips	0.02	0.04	0.69	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Time Slice 2/28/2011-5/28/2011 Active	**9.62**	**84.39**	42.68	0.00	36.48	**3.74**	40.22	7.62	**3.44**	11.06
Mass Grading 02/28/2011-	9.62	84.39	42.68	0.00	36.48	3.74	40.22	7.62	3.44	11.06
Mass Grading Dust	0.00	0.00	0.00	0.00	36.46	0.00	36.46	7.62	0.00	7.62
Mass Grading Off Road Diesel	9.50	83.53	40.34	0.00	0.00	3.71	3.71	0.00	3.41	3.41
Mass Grading On Road Diesel	0.06	0.74	0.27	0.00	0.00	0.03	0.03	0.00	0.03	0.03
Mass Grading Worker Trips	0.06	0.12	2.07	0.00	0.01	0.01	0.02	0.00	0.01	0.01
Time Slice 5/30/2011-9/5/2011 Active	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 9/6/2011-9/23/2011 Active	7.20	38.74	**83.64**	**0.09**	0.41	2.72	3.12	0.15	2.48	2.63
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Building 09/06/2011-09/23/2011	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17

9/1/2009 11:34:09 AM

Time Slice 9/26/2011-10/7/2011 Active	5.09	28.19	47.85	0.05	0.21	2.13	2.34	0.08	1.95	2.02
Asphalt 09/26/2011-10/07/2011	1.49	8.82	6.03	0.00	0.01	0.77	0.77	0.00	0.71	0.71
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.41	8.62	5.06	0.00	0.00	0.76	0.76	0.00	0.70	0.70
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Paving Worker Trips	0.03	0.05	0.92	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 10/10/2011-11/4/2011	5.89	33.10	50.77	0.05	0.22	2.40	2.62	0.08	2.20	2.28
Asphalt 10/10/2011-11/04/2011	2.29	13.73	8.95	0.00	0.01	1.04	1.05	0.00	0.96	0.96
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.95	12.78	7.48	0.00	0.00	1.00	1.00	0.00	0.92	0.92
Paving On Road Diesel	0.07	0.88	0.32	0.00	0.00	0.03	0.04	0.00	0.03	0.03
Paving Worker Trips	0.03	0.07	1.15	0.00	0.01	0.00	0.01	0.00	0.00	0.01
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 11/7/2011-12/30/2011	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 1/2/2012-1/2/2012 Active	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building 05/30/2011-03/23/2012	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building Off Road Diesel	2.45	16.29	9.91	0.00	0.00	1.14	1.14	0.00	1.05	1.05
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.88	1.66	29.54	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 1/3/2012-2/17/2012 Active	4.56	27.03	45.42	0.05	10.21	1.82	12.03	2.16	1.67	3.83
Building 05/30/2011-03/23/2012	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building Off Road Diesel	2.45	16.29	9.91	0.00	0.00	1.14	1.14	0.00	1.05	1.05
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.88	1.66	29.54	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Fine Grading 01/03/2012-	1.24	9.08	5.98	0.00	10.00	0.56	10.57	2.09	0.52	2.61
Fine Grading Dust	0.00	0.00	0.00	0.00	10.00	0.00	10.00	2.09	0.00	2.09
Fine Grading Off Road Diesel	1.22	9.05	5.34	0.00	0.00	0.56	0.56	0.00	0.52	0.52
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Fine Grading Worker Trips	0.02	0.04	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Time Slice 2/20/2012-3/23/2012 Active	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building 05/30/2011-03/23/2012	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building Off Road Diesel	2.45	16.29	9.91	0.00	0.00	1.14	1.14	0.00	1.05	1.05
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.88	1.66	29.54	0.05	0.20	0.12	0.32	0.07	0.10	0.17

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/31/2011 - 2/25/2011 - Clear and Grub

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 2/28/2011 - 5/28/2011 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Phase Assumptions

Phase: Fine Grading 1/31/2011 - 2/25/2011 - Clear and Grub

Total Acres Disturbed: 15

Maximum Daily Acreage Disturbed: 3.75

Fugitive Dust Level of Detail: Default

10 lbs per acre-day

On Road Truck Travel (VMT): 200

Off-Road Equipment:

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Fine Grading 1/3/2012 - 2/17/2012 - Field construction

9/1/2009 11:34:09 AM

Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 1
Fugitive Dust Level of Detail: Default
10 lbs per acre-day
On Road Truck Travel (VMT): 0
Off-Road Equipment:
1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 3 hours per day

Phase: Mass Grading 2/28/2011 - 5/28/2011 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 15
Maximum Daily Acreage Disturbed: 3.75
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 2862 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 27.24
Off-Road Equipment:
1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Paving 9/26/2011 - 10/7/2011 - Pave PCH
Acres to be Paved: 0.15
Off-Road Equipment:
1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 2 hours per day

Phase: Paving 10/10/2011 - 11/4/2011 - Pave entry road and parking area
Acres to be Paved: 1.8
Off-Road Equipment:
1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 5 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 2 hours per day

Phase: Building Construction 5/30/2011 - 3/23/2012 - Build Park Structures
Off-Road Equipment:
1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Building Construction 9/6/2011 - 9/23/2011 - Widen PCH
Off-Road Equipment:
1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

10/8/2009 02:03:50 PM

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\BonTerra User\My Documents\Current\Sunset Ridge Park\Air Quality\Urbemis\SunRidge 5dmg 091709 long haul urb024

Project Name: Sunset Ridge Park - 5 day mass grade - 091709

Project Location: Orange County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2011 TOTALS (lbs/day unmitigated)	12.26	119.38	83.64	0.09	375.41	5.10	380.52	78.43	4.69	83.12
2011 TOTALS (lbs/day mitigated)	12.26	119.38	83.64	0.09	36.66	5.10	41.76	7.68	4.69	12.37
2012 TOTALS (lbs/day unmitigated)	4.56	27.03	45.42	0.05	10.21	1.82	12.03	2.16	1.67	3.83
2012 TOTALS (lbs/day mitigated)	4.56	27.03	45.42	0.05	10.21	1.82	12.03	2.16	1.67	3.83

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1.25	1.57	15.19	0.02	2.71	0.52

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5
TOTALS (lbs/day, unmitigated)	1.25	1.57	15.19	0.02	2.71	0.52

10/8/2009 02:05:03 PM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Mitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\BonTerra User\My Documents\Current\Sunset Ridge Park\Air Quality\Urbemis\SunRidge ScenB 40mRT 100809.urb924

Project Name: Sunset Ridge Park - 5 day mass grade - 091709

Project Location: Orange County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total
Time Slice 1/31/2011-2/25/2011 Active	2.36	21.55	11.09	0.01	12.04	1.01	13.05	2.52	0.93	3.45
Fine Grading 01/31/2011-	2.36	21.55	11.09	0.01	12.04	1.01	13.05	2.52	0.93	3.45
Fine Grading Dust	0.00	0.00	0.00	0.00	12.01	0.00	12.01	2.51	0.00	2.51
Fine Grading Off Road Diesel	1.93	16.05	8.39	0.00	0.00	0.79	0.79	0.00	0.73	0.73
Fine Grading On Road Diesel	0.41	5.46	2.01	0.01	0.03	0.21	0.24	0.01	0.20	0.20
Fine Grading Worker Trips	0.02	0.04	0.69	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Time Slice 2/28/2011-5/27/2011 Active	**12.26**	**119.38**	55.54	0.05	36.66	**5.10**	41.76	7.68	**4.69**	12.37
Mass Grading 02/28/2011-	12.26	119.38	55.54	0.05	36.66	5.10	41.76	7.68	4.69	12.37
Mass Grading Dust	0.00	0.00	0.00	0.00	36.46	0.00	36.46	7.62	0.00	7.62
Mass Grading Off Road Diesel	9.50	83.53	40.34	0.00	0.00	3.71	3.71	0.00	3.41	3.41
Mass Grading On Road Diesel	2.69	35.73	13.13	0.05	0.18	1.39	1.57	0.06	1.28	1.34
Mass Grading Worker Trips	0.06	0.12	2.07	0.00	0.01	0.01	0.02	0.00	0.01	0.01
Time Slice 5/30/2011-9/5/2011 Active	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 9/6/2011-9/23/2011 Active	7.20	38.74	**83.64**	**0.09**	0.41	2.72	3.12	0.15	2.48	2.63
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Building 09/06/2011-09/23/2011	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17

10/8/2009 02:05:03 PM

Time Slice 9/26/2011-10/7/2011 Active	5.09	28.19	47.85	0.05	0.21	2.13	2.34	0.08	1.95	2.02
Asphalt 09/26/2011-10/07/2011	1.49	8.82	6.03	0.00	0.01	0.77	0.77	0.00	0.71	0.71
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.41	8.62	5.06	0.00	0.00	0.76	0.76	0.00	0.70	0.70
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Paving Worker Trips	0.03	0.05	0.92	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 10/10/2011-11/4/2011	5.89	33.10	50.77	0.05	0.22	2.40	2.62	0.08	2.20	2.28
Asphalt 10/10/2011-11/04/2011	2.29	13.73	8.95	0.00	0.01	1.04	1.05	0.00	0.96	0.96
Paving Off-Gas	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.95	12.78	7.48	0.00	0.00	1.00	1.00	0.00	0.92	0.92
Paving On Road Diesel	0.07	0.88	0.32	0.00	0.00	0.03	0.04	0.00	0.03	0.03
Paving Worker Trips	0.03	0.07	1.15	0.00	0.01	0.00	0.01	0.00	0.00	0.01
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 11/7/2011-12/30/2011	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building 05/30/2011-03/23/2012	3.60	19.37	41.82	0.05	0.20	1.36	1.56	0.07	1.24	1.31
Building Off Road Diesel	2.64	17.55	10.08	0.00	0.00	1.24	1.24	0.00	1.14	1.14
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.96	1.82	31.74	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 1/2/2012-1/2/2012 Active	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building 05/30/2011-03/23/2012	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building Off Road Diesel	2.45	16.29	9.91	0.00	0.00	1.14	1.14	0.00	1.05	1.05
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.88	1.66	29.54	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Time Slice 1/3/2012-2/17/2012 Active	4.56	27.03	45.42	0.05	10.21	1.82	12.03	2.16	1.67	3.83
Building 05/30/2011-03/23/2012	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building Off Road Diesel	2.45	16.29	9.91	0.00	0.00	1.14	1.14	0.00	1.05	1.05
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.88	1.66	29.54	0.05	0.20	0.12	0.32	0.07	0.10	0.17
Fine Grading 01/03/2012-	1.24	9.08	5.98	0.00	10.00	0.56	10.57	2.09	0.52	2.61
Fine Grading Dust	0.00	0.00	0.00	0.00	10.00	0.00	10.00	2.09	0.00	2.09
Fine Grading Off Road Diesel	1.22	9.05	5.34	0.00	0.00	0.56	0.56	0.00	0.52	0.52
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Fine Grading Worker Trips	0.02	0.04	0.64	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Time Slice 2/20/2012-3/23/2012 Active	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building 05/30/2011-03/23/2012	3.32	17.95	39.44	0.05	0.20	1.26	1.46	0.07	1.15	1.22
Building Off Road Diesel	2.45	16.29	9.91	0.00	0.00	1.14	1.14	0.00	1.05	1.05
Building Vendor Trips	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
Building Worker Trips	0.88	1.66	29.54	0.05	0.20	0.12	0.32	0.07	0.10	0.17

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 1/31/2011 - 2/25/2011 - Clear and Grub

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

The following mitigation measures apply to Phase: Mass Grading 2/28/2011 - 5/27/2011 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Phase Assumptions

Phase: Fine Grading 1/31/2011 - 2/25/2011 - Clear and Grub

Total Acres Disturbed: 15

Maximum Daily Acreage Disturbed: 3.75

Fugitive Dust Level of Detail: Default

10 lbs per acre-day

On Road Truck Travel (VMT): 200

Off-Road Equipment:

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Fine Grading 1/3/2012 - 2/17/2012 - Field construction

10/8/2009 02:05:03 PM

Total Acres Disturbed: 4
Maximum Daily Acreage Disturbed: 1
Fugitive Dust Level of Detail: Default
10 lbs per acre-day
On Road Truck Travel (VMT): 0
Off-Road Equipment:
1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 3 hours per day

Phase: Mass Grading 2/28/2011 - 5/27/2011 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 15
Maximum Daily Acreage Disturbed: 3.75
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 2862 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 1307.69
Off-Road Equipment:
1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 4 hours per day

Phase: Paving 9/26/2011 - 10/7/2011 - Pave PCH
Acres to be Paved: 0.15
Off-Road Equipment:
1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 2 hours per day

Phase: Paving 10/10/2011 - 11/4/2011 - Pave entry road and parking area
Acres to be Paved: 1.8
Off-Road Equipment:
1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

10/8/2009 02:05:03 PM

1 Graders (174 hp) operating at a 0.61 load factor for 5 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 2 hours per day

Phase: Building Construction 5/30/2011 - 3/23/2012 - Build Park Structures
Off-Road Equipment:
1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Building Construction 9/6/2011 - 9/23/2011 - Widen PCH
Off-Road Equipment:
1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day
2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day
1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

9/1/2009 05:29:51 PM

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\BonTerra User\My Documents\Current\Sunset Ridge Park\Air Quality\Urbemis\SunRidge 6dmg 082409 v3 short haul.urb924

Project Name: Sunset Ridge Park - 6 day mass grade - short haul 082609

Project Location: Orange County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	CO2	MT CO2
2011 TOTALS (tons/year unmitigated)	898.71	
2011 TOTALS (tons/year mitigated)	898.71	815
Percent Reduction	0.00	
2012 TOTALS (tons/year unmitigated)	204.79	
2012 TOTALS (tons/year mitigated)	204.79	186
Percent Reduction	0.00	
Total		1,001 MT CO2
		16 months of construction
Average		62.6 MTCO2 per month of construction
		750.7 MTCO2 per year of construction
		33.4 30 year amortization

9/1/2009 05:29:51 PM

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	280.83

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	280.83

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\BonTerra User\My Documents\Current\Sunset Ridge Park\Air Quality\Urbemis\SunRidge ScenB 40mRT 100809.urb924

Project Name: Sunset Ridge Park - 5 day mass grade - 091709

Project Location: Orange County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	CO2	MT CO2
2011 TOTALS (tons/year unmitigated)	1,020.02	
2011 TOTALS (tons/year mitigated)	1,020.02	925
Percent Reduction	0.00	
2012 TOTALS (tons/year unmitigated)	204.79	
2012 TOTALS (tons/year mitigated)	204.79	186
Percent Reduction	0.00	
Total		1,111 MT CO2
		37.0 30 year amortization

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	280.83

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	CO2
TOTALS (tons/year, unmitigated)	280.83