Appendix B Air Quality Technical Report

Draft

City of Huntington Beach

Air Quality Technical Study

for the Proposed

The Village at Bella Terra Project

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1.0 Introduction

The EIR section will analyze the potential for adverse impacts on air quality resulting from implementation of the proposed General Plan Amendment (GPA) and Zoning Text Amendment (ZTA) for the Village at Bella Terra site, herein referred to as the proposed project, Option 1 and/or Option 2. The proposed project consists of a General Plan Amendment (GPA) and Zoning Text Amendment (ZTA) that would facilitate the development of a mixed-use project. In particular, the General Plan would be amended as follows:

- Allow horizontally integrated mixed-use in addition to the currently allowed vertical mixed-use.
- Increase the allowable residential density from the currently allowed 25 dwelling units per acre (du/acre) up to a maximum 45 du/acre (with limitations specified below).
- Increase the allowable commercial floor area ratio (FAR) from the current 0.5 to a maximum 0.6 commercial FAR (with limitations specified below).
- Increase the allowable total building FAR from the current 1.5 to 1.75 maximum FAR.
- Increase the maximum number of stories from the currently allowed maximum of four stories to six stories on a majority of the project site, up to a maximum of ten stories on a portion of the site.

The proposed General Plan designation would be CR-F2-sp-mu (F14). The newly established F14 FAR category would specify an overall maximum total mixed use building area FAR of 1.75. The maximum commercial development and residential density would be limited to only one of the following development combinations on the proposed project site. The new General Plan development potential (established by one of the two following combinations) would be established in both the Land Use Density and Intensity Schedule and General Plan Subarea 5a:

- **Option 1 (Increased Residential)**. Maximum total building area FAR of 1.75, commercial FAR of 0.2, and 45 du/acre, which would permit a maximum of 713 residential units and 138,085 square feet (sf) of commercial uses. Compared to the existing General Plan designation, this GPA would represent an overall square footage increase of 172,606, through a decrease in commercial-only building area of 207,128 sf, and an increase of 317 residential units; *or*
- **Option 2 (Increased Commercial)**. Maximum total building area floor area ratio of 1.75, commercial FAR of 0.6, and 34 du/acre, which would permit a maximum of 538 residential units and 414,255 sf of commercial uses. Compared to the existing General Plan designation, this GPA would represent an overall square footage increase of 172,606, through an increase in commercial-only building area of 69,042 sf, and an increase of 142 residential units.

These two options represent the overall development scenarios that could occur under the proposed project; however, only one option would ultimately be implemented. Each of these potential development combinations result in a maximum total building area FAR of 1.75 or 1,208,245 sf of total commercial and residential development, which is an increase in overall square footage (by approximately 172,606 sf) compared to what is currently allowed on-site. The primary difference between the two options is the ratio of residential and commercial uses. Under the proposed project, Option 1 would represent an increase in residential uses and Option 2 would represent an increase in commercial uses. Approval of either option would satisfy the proposed changes to the General Plan to allow a mixed-use development, as outlined above.

The associated ZTA would amend SP-13 to allow residential uses and establish residential design and development standards. In addition, the development standards for commercial uses, including but not limited to parking, setbacks, and building height will be evaluated within the Specific Plan.

The Initial Study/Notice of Preparation (IS/NOP) identified the potential for impacts associated with confliction with or obstruction of implementation of the applicable air quality plan; violation of air quality standards or

substantial contribution to an existing or projected air quality violation; exposure of sensitive receptors to substantial pollutant concentrations; or a cumulatively considerable net increase of criteria pollutants for which the project region is not in attainment. Issues that were scoped out from further analysis include the potential for the proposed project to create objectionable odors affecting a substantial number of people. Data used to prepare this section were taken from various sources, including the South Coast Air Quality Management District (SCAQMD) CEQA Air Quality Handbook, and the 2007 Air Quality Management Plan (AQMP), as amended. Full bibliographic entries for all reference materials are provided in Section 4.7 (References) at the end of this section. In addition, Appendix A contains the air quality data sheets that were used to calculate data for this study.

All comments received in response to the IS/NOP circulated for the proposed project were taken into consideration during preparation of this Technical Study, and if relevant, have been addressed in this section or others within this document.

2.0 Environmental Setting

2.1 Climate

The City of Huntington Beach is located within the South Coast Air Basin (Basin), named so because its geographical formation is that of a basin, with the surrounding mountains trapping the air and its pollutants in the valleys or basins below. The Basin includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the Basin is influenced by a wide range of emission sources such as dense population centers, heavy vehicular traffic and industry, as well as meteorology.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). Coastal areas have a more pronounced oceanic influence, and show less variability in annual minimum and maximum temperatures than inland areas. The City of Huntington Beach is located in northern coastal Orange County, which is in the southern portion of the Basin. The annual average temperature in the City ranges from approximately 47.0°F in December and January to 73.5°F in August (Western Regional Climate Center 2008).

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin, along the coastal mountain ranges. Average rainfall in the City ranges from approximately 0.01 inch in July to 2.42 inches in February, with an average annual total of 11.20 inches (Western Regional Climate Center 2008).

The Basin experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer.

The vertical dispersion of air contaminants in the Basin is also affected by wind conditions. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas in the Basin are transported predominantly on-shore into Riverside and San Bernardino Counties. The Santa Ana winds, which are strong and dry north or northeasterly winds that occur during the fall and winter months, also disperse air contaminants in the Basin. The Santa Ana conditions tend to last for several days at a time.

2.2 Air Quality Background

Air pollutant emissions within the Basin are generated by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources are usually subject to a permit to operate from the South Coast Air Quality Management District (SCAQMD), occur at specific identified locations, and are usually associated with manufacturing and industry. Examples of point sources are boilers or combustion equipment that produce electricity or generate heat, such as heating, ventilation, and air conditioning (HVAC) units. Area sources are widely distributed and produce many small emissions, and they do not require permits to operate from the SCAQMD. Examples of area sources include residential and commercial water heaters, painting operations, portable generators, lawn mowers, agricultural fields, landfills, and consumer products, such as barbeque lighter fluid and hairspray, the area-wide use of which contributes to regional air pollution. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources are those that are legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, race cars, and construction vehicles. Mobile sources account for the majority of the air pollutant emissions within the Basin. Air pollutants can also be generated by the natural environment, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Both federal and State governments have established ambient air quality standards for outdoor concentrations of specific pollutants, referred to as "criteria pollutants," in order to protect public health. The national and State ambient air quality standards have been set at concentration levels to protect the most sensitive persons from illness or discomfort with a margin of safety. Applicable ambient air quality standards are identified later in this section under Thresholds of Significance. The SCAQMD is responsible for bringing air quality within the Basin into attainment with the national and State ambient air quality standards.

The criteria pollutants for which federal and State standards have been promulgated and that are most relevant to air quality planning and regulation in the Basin are ozone, carbon monoxide, fine suspended particulate matter, sulfur dioxide, and lead. In addition, toxic air contaminants are of concern in the Basin. Each of these is briefly described below.

- **Ozone (O_3)** is a gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- **Carbon Monoxide (CO)** is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during the winter morning, with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- **Respirable Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)** consists of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter, respectively. Some sources of particulate matter, like pollen and windstorms, are naturally occurring. However, in populated areas, most particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.
- **Nitrogen dioxide (NO_2)** is a nitrogen oxide compound that is produced by the combustion of fossil fuels, such as in internal combustion engines (both gasoline and diesel powered), as well as point sources, especially power plants. Of the seven types of nitrogen oxide compounds, NO_2 is the most abundant in the atmosphere. As ambient concentrations of NO_2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO_2 than those indicated by regional monitors.

- **Sulfur dioxide (SO_2)** is a colorless gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When sulfur dioxide oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SO_X).
- **Lead (Pb)** occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne lead in the Basin. The use of leaded gasoline is no longer permitted for on road motor vehicles, so the majority of such combustion emissions are associated with off-road vehicles such as race cars. Other sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and the use of secondary lead smelters.
- **Toxic Air Contaminants (TACs)** refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. They 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. Toxic air contaminants are different than "criteria" pollutants in that ambient air quality standards have not been established for them, largely because there are hundreds of air toxics and their effects on health tend to be local rather than regional. TACs primarily are concentrated within ¼ mile of the emissions source, and accepted practice is to analyze TACs when receptors are located within this ¼-mile radius.

State standards have been promulgated for other criteria air pollutants, including SO_4, hydrogen sulfide, Pb, and visibility-reducing particles. California also recognizes vinyl chloride as a TAC with an undetermined threshold level of exposure for adverse health effects. Vinyl chloride and hydrogen sulfide emissions are generally generated from mining, milling, refining, smelting, landfills, sewer plants, cement manufacturing, or the manufacturing or decomposition of organic matter. California standards for sulfate- and visibility-reducing particles are not exceeded anywhere in the Basin. Pb is typically only emitted during demolition of structures expected to include Pb-based paint and materials.

2.2.1 Health Effects of Air Pollutants

Ozone

Individuals exercising outdoors, children and people with preexisting lung diseases such as asthma or chronic pulmonary lung disease are considered to be the most susceptible sub-groups for ozone effects. Short-term exposures (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high ozone communities.

Ozone exposure under exercising conditions is known to increase the severity of the above mentioned observed responses. Animal studies suggest that exposure to a combination of pollutants that include ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart.

Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities.

Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM_{10} and $PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM_{10} and $PM_{2.5}$.

Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO_2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO_2.

Sulfur Dioxide

A few minutes of exposure to low levels of SO_2 can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2

from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or if one pollutant alone is the predominant factor.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure.

Pb poisoning can cause anemia, lethargy, seizures, and death; although it appears that there are no direct effects of Pb on the respiratory system. Pb can be stored in the bone from early age environmental exposure, and elevated Pb levels in the blood can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous environmental Pb exposure of their mothers.

Toxic Air Contaminant Emissions

TACs are airborne substances that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. They 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 from the “criteria” pollutants previously discussed in that ambient air quality standards have not been established for them.

2.2.2 Greenhouse Gas Emissions and Climate Change

Global climate change refers to the change in the average weather of the earth that may be measured by changes in wind patterns, storms, precipitation, and temperature. Projected climate changes could impact California's public health through changes in air quality, weather related disasters, and a possible increase in infectious disease. If extreme precipitation and severe weather events become more frequent, and if sanitation and water-treatment facilities have inadequate capacity or are not maintained, increases in infectious diseases may result (California EPA. n.d.). The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. Many of the recent concerns over global climate change use these data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of greenhouse gas emissions needed to stabilize global temperatures and climate change impacts. The IPCC predicted that the range of global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1°C to 6.4°C. Regardless of analytical methodology, global average temperature and sea level are expected to rise under all scenarios (IPCC 2007).

This assessment makes it clear that the impacts of future climate change will be mixed across regions. For example, according to the IPCC Fourth Assessment report, there may be large differences in regional population, income and technological development under alternative scenarios, which are often a strong determinant of the level of vulnerability to climate change. To illustrate, in a number of recent studies of global impacts of climate change on food supply, risk of coastal flooding and water scarcity, the projected number of people potentially affected is considerably greater in areas characterized by relatively low per capita income and large population growth. This difference is largely explained, not by differences in changes of climate, but by differences in vulnerability (IPCC 2007).

Greenhouse Gas Emissions

The natural "greenhouse effect" allows the earth to remain warm and sustain life. Greenhouse gases trap the sun's heat in the atmosphere like a blanket, and help determine the existing climate. Examples of greenhouse gases include carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. The increased consumption of fossil fuels (wood, coal, gasoline, etc.) has substantially increased atmospheric levels of greenhouse gases. As atmospheric concentrations of greenhouse gases rise, so do temperatures. Over time, the rise in temperatures would result in climate change. Theories concerning climate change and global warming existed as early as the late 1800s. By the late 1900s, the understanding of the earth's atmosphere had advanced to the point where many climate scientists began to accept that the earth's climate is changing. Today, many climate scientists agree that some warming has occurred over the past century and will continue through this century.

Gases that trap heat in the atmosphere are called greenhouse gases (GHG), analogous to the way a greenhouse retains heat. Common GHG include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years.

The IPCC predicts that changes in the earth's climate will continue through the twenty-first century and that the rate of change may increase significantly in the future because of human activity (IPCC 2007). Many researchers studying California's climate believe that changes in the earth's climate have already affected California and will continue to do so in the future.

Projected future climate change may affect California in a variety of ways. Public health can suffer due to greater temperature extremes and more frequent extreme weather events, increases in transmission of infectious disease, and increases in air pollution. Agriculture is especially vulnerable to altered temperature and rainfall patterns, and new pest problems. Forest ecosystems would face increased fire hazards and would be more susceptible to pests and diseases. The Sierra snowpack that functions as California's largest reservoir could shrink by a third by 2060, and to half its historic size by 2090 (CARB 2004). Runoff that fills reservoirs could start in midwinter rather than spring, and rain falling on snow could trigger more flooding. The California coast is likely to face a rise in sea level that could threaten its shorelines. Sea level rise and storm surges could lead to flooding of low-lying property, loss of coastal wetlands, erosion of cliffs and beaches, saltwater contamination of drinking water, and damage to roads, causeways, and bridges.

2.3 Existing Regional Air Quality

Measurements of ambient concentrations of the criteria pollutants are used by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resource Board (CARB) to assess and classify the air quality of each air basin, county, or, in some cases, a specific urbanized area. The classification is determined by comparing actual monitoring data with national and State standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in "attainment" in that area. If the pollutant exceeds the standard, the area is classified as a "nonattainment" area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

The entire Basin is designated as a national-level nonattainment area for ozone, CO, PM_{10}, and $PM_{2.5}$. The Basin is also a State-level nonattainment area for ozone, PM_{10}, and $PM_{2.5}$. As of April 2008, it is in attainment of both the national and State ambient air quality standards for SO_2, lead, and NO_2, which is a pure form of NO_X, and is in State attainment for CO.

The SCAQMD divides the Basin into 38 source receptor areas (SRAs) in which 32 monitoring stations operate to monitor the various concentrations of air pollutants in the region. The City of Huntington Beach is located within SRA 18, which covers the Northern Coastal Orange County area. CARB also collects ambient air quality data through a network of air monitoring stations throughout the State. The data are summarized annually and

published in CARB's California Air Quality Data Summaries. The Costa Mesa-Mesa Verde Drive monitoring station is the nearest monitoring station to the proposed project site, and is approximately seven miles to the east of the proposed project site. This station currently monitors emission levels of ozone, CO, NO_2, and SO_2 but does not monitor the pollutant levels of PM_{10} and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ levels were taken from SRA 17, which covers Central Orange County.

Table 1 (Summary of Ambient Air Quality in the Proposed Project Vicinity) identifies the national and State ambient air quality standards for relevant air pollutants, along with the ambient pollutant concentrations that have been measured at the Costa Mesa-Mesa Verde Drive monitoring station through the period from 2004 to 2006.

According to the air quality data shown in Table 1, the national 1-hour ozone standard has not been exceeded over the last three years in SRA 18, while the State 1-hour ozone standard was exceeded a total of two days over the last three years. The national 8-hour ozone standard was exceeded on one day over the last three years. No national or State standards for CO, NO_2, or SO_2 have been exceeded over the last three years within SRA 18. State PM_{10} levels were found to be above the threshold seventeen times between 2004 and 2006, while federal levels for $PM_{2.5}$ exceeded thresholds levels established by the U.S. EPA approximately eight times in 2006.

Table 1 Summary of Ambient Air Quality in the Proposed Project Vicinity

Air Pollutants Monitored Within SRA 18—Northern Coastal Orange County Area	*Year*		
	2004	*2005*	*2006*
Ozone (O_3)			
Maximum 1-hour concentration measured	0.104	0.085	0.074
Number of days exceeding national 0.12 ppm 1-hour standard	0	0	0
Number of days exceeding State 0.09 ppm 1-hour standard	2	0	0
Maximum 8-hour concentration measured	0.087	0.072	0.062
Number of days exceeding national 0.08 ppm 8-hour standard	1	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration measured	0.097	0.085	0.101
Number of days exceeding State 0.25 ppm 1-hour standard	0	0	0
Annual average	0.016	0.014	0.015
Does measured annual average exceed national 0.0534 ppm annual average standard?	No	No	No
Carbon Monoxide (CO)			
Maximum 1-hour concentration measured	5 ppm	5 ppm	N/A
Number of days exceeding national 35.0 ppm 1-hour standard	0	0	0
Number of days exceeding State 20.0 ppm 1-hour standard	0	0	0
Maximum 8-hour concentration measured	4.07	3.16	3.01
Number of days exceeding national 9.5 ppm 8-hour standard	0	0	0
Number of days exceeding State 9.0 ppm 8-hour standard	0	0	0
Sulfur Dioxide (SO_2)			
Maximum 24-hour concentration measured	0.008	0.008	0.005
Number of days exceeding national 0.14 ppm 24-hour standard	0	0	0
Number of days exceeding State 0.04 ppm 24-hour standard	0	0	0

Table 1 Summary of Ambient Air Quality in the Proposed Project Vicinity

Air Pollutants Monitored Within SRA 18—Northern Coastal Orange County Area	*Year*		
	2004	*2005*	*2006*
Respirable Particulate Matter (PM_{10})			
Maximum 24-hour concentration measured (µg/m³)	74	65	104
Number of days exceeding the national 150 µg/m³ 24-hour standard	0	0	0
Number of days exceeding the State 50 µg/m³	7	3	7
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration measured (µg/m³)	56.2	54.7	56.2
Number of days exceeding the national 65 µg/m³ 24-hour standard	0	0	0
Number of days exceeding the national 35 µg/m³ [a]	~	~	8

SOURCE: CARB 2008, available at http://www.arb.ca.gov/html/ds.htm, Accessed April 22, 2008.

PM_{10} and $PM_{2.5}$ concentrations are not measured in the Costa Mesa-Mesa Verde Drive monitoring station or in SRA 18. $PM_{2.5}$ and PM_{10} levels were measured in SRA 17.

[a] U.S. EPA has revised the federal 24-hour $PM_{2.5}$ standard from 65 µg/m³ to 35 µg/m³; effective December 17, 2006.

2.4 Local Air Quality

Motor vehicles are the primary source of pollutants in the proposed project vicinity. Local emissions sources also include stationary activities, such as space and water heating, landscape maintenance from leaf blowers and lawn mowers, consumer products, and mobile sources. The AES Huntington Beach Generating Station is located approximately seven miles south of the proposed project site, which is outside the ¼-mile radius that TACs are typically considered. Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed national and/or State standards for CO are termed "CO hotspots." Section 9.14 of the SCAQMD's CEQA Air Quality Handbook identifies CO as a localized problem requiring additional analysis when a project is likely to subject sensitive receptors to CO hotspots. The SCAQMD defines typical sensitive receptors as residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The nearest sensitive receptor to the Proposed Project would be Golden West City College, located approximately 160 feet west of the proposed project site. In addition to Golden West City College, the Old World village residential units and the Seawind Village Apartments are located north of the project site, across Center Avenue.

The SCAQMD has identified the use of CALINE4, a dispersion model for predicting CO concentrations, as the preferred method of estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak hour turning volumes to ambient CO air concentrations. For this analysis, localized CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District and accepted by the SCAQMD. The simplified model is intended as a screening analysis, which identifies a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations.

Maximum existing CO concentrations were calculated for the intersections evaluated in the proposed project traffic report, prepared by Austin-Foust Associates, that currently operate at Level of Service (LOS) D or worse, as these intersections indicated the locations of the highest potential CO concentrations due to vehicle idling. Six study intersections currently operate at LOS D or worse. The results of these calculations are presented in Table 2 (Existing Localized Carbon Monoxide Concentrations) for representative receptor locations at the roadway edge, 25, and 50 feet from each roadway. These distances were selected because

they represent locations where a person may be living or working for one to eight hours at a time. The national 1-hour standard is 35.0 parts per million (ppm), and the State 1-hour standard is 20.0 ppm. The 8-hour national and State standards are both 9.0 ppm.

Table 2 Existing Localized Carbon Monoxide Concentrations

Intersection	CO Concentrations in Parts per Million[a,b]					
	Roadway Edge (0 feet)		25 Feet		50 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Goldenwest Street and Bolsa Avenue	6.4	4.1	5.9	3.8	5.8	3.7
Beach Boulevard and Edinger Avenue	6.9	4.5	6.3	4.1	6.1	3.9
Beach Boulevard and Warner Avenue	6.6	4.3	6.1	3.9	5.9	3.8
Newland Street and Warner Avenue	6.1	3.9	5.7	3.7	5.6	3.6
Beach Boulevard and McFadden Avenue	6.6	4.3	6.1	3.9	5.9	3.8
Beach Boulevard and Bolsa Avenue	6.6	4.3	6.1	3.9	5.9	3.8

SOURCE: PBS&J, 2008. Calculation sheets are provided in Appendix A.

[a]. National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.

[b]. National 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

As shown in Table 2, under worst-case conditions, existing CO concentrations in the proposed project vicinity do not exceed national or State 1-hour and 8-hour ambient air quality standards. Therefore, CO hotspots do not currently exist near these intersections.

3.0 Regulatory Framework

Air quality within the Basin is addressed through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the Basin are discussed below.

3.1 Federal

3.1.1 United States Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the time frame identified in the SIP.

3.1.2 Clean Air Act

The United States Environmental Protection Agency (EPA) currently does not regulate GHG emissions from motor vehicles. Massachusetts v. EPA (Supreme Court Case 05-1120) was argued before the U. S. Supreme

Court on November 29, 2006, in which it was petitioned that EPA regulate four GHG, including carbon dioxide, under §202(a)(1) of the Clean Air Act. A decision was rendered on April 2, 2007, in which the Court held that petitioners have standing to challenge the EPA and that the EPA has statutory authority to regulate emission of GHG from motor vehicles.

3.2 State

3.2.1 California Air Resources Board

As part of the California EPA, CARB is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. CARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

3.2.2 California Assembly Bill 32 (AB 32)

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG in California. GHG as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires the California Air Resources Board (CARB), the State agency charged with regulating statewide air quality, to adopt rules and regulations that would achieve greenhouse gas emissions equivalent to statewide levels in 1990 by 2020. On or before June 30, 2007, CARB is required to publish a list of discrete early action GHG emission reduction measures that can be implemented by 2010. The law further requires that such measures achieve the maximum technologically feasible and cost effective reductions in GHGs from sources or categories of sources to achieve the statewide greenhouse gas emissions limit for 2020.

AB 32 also requires that by January 1, 2008, CARB shall determine what the statewide greenhouse gas emissions level was in 1990, and approve a statewide greenhouse gas emissions limit that is equivalent to that level, to be achieved by 2020. While the level of 1990 GHG emissions has not yet been approved, reported emissions vary from 425 to 468 Tg CO_2 Eq. In 2004, the emissions were estimated at 492 Tg CO_2 Eq (CEC 2006).

CARB published its final report for Proposed Early Actions to Mitigate Climate Change in California, which describes recommendations for discrete early action measures to reduce GHG emissions in October 2007. The measures included are part of California's strategy for achieving GHG reductions under AB 32. One of the sources for the potential measures includes the Climate Action Team (CAT) Report. Three new regulations are proposed to meet the definition of "discrete early action greenhouse gas reduction measures," which include the following: a low carbon fuel standard; reduction of HFC-134a emissions from non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture (CARB 2007). CARB estimates that by 2020, the reductions from those three measures would be approximately 13-26 million metric tons of carbon dioxide equivalent.

Under AB 32, CARB has the primary responsibility for reducing GHG emissions. However, the CAT Report contains strategies that can be undertaken by many other California agencies. In addition, CARB staff is working on several non-regulatory measures including guidance documents and protocols to encourage the public, local government and businesses to take positive steeps to reduce GHG emissions. As of April 2008, CARB has not published 1990 emission levels.

3.2.3 California Code of Regulations Title 24

Although it was not originally intended to reduce greenhouse gases, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest amendments, made in October 2005, currently require new homes to use half the energy they used only a decade ago. Energy efficient buildings require less electricity, and electricity production by fossil fuels results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

3.2.4 California Assembly Bill 1493

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHG emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from the light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030 (CARB 2004).

3.2.5 Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. The California Climate Action Team's (CAT) Report to the Governor in 2006, contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met (Cal EPA 2006).

3.2.6 Executive Order S-01-07

Governor Arnold Schwarzenegger enacted Executive Order S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The process for meeting the 2020 target includes coordination between the California Environmental Protection Agency, the University of California, and the California Energy Commission to develop and propose, a draft compliance schedule to meet the 2020 Target by June 30, 2007. The order also requires that a Low Carbon Fuel Standard for transportation be established for California.

3.2.7 Senate Bill 1368

Senate Bill (SB) 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the California Public Utilities Commission (PUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities by February 1, 2007. Similarly, the CEC was tasked with establishing a similar standard for local publicly-owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and the CEC. In January 2007, the PUC adopted an interim GHG Emissions Performance Standard, which requires that all new long-term commitments for baseload generation entered into by investor-owned utilities have emissions no greater than a combined cycle gas turbine plant (i.e., 1,100 pounds of CO_2 per megawatt-hour). A "new long-term commitment" refers to new plant investments (new construction), new or renewal contracts with a term of five years or more, or major investments by the utility in its existing baseload power plants. In May 2007, the CEC approved regulations that prohibit the state's publicly owned utilities from entering into long-term financial

commitments with plants that exceed the standard adopted by the PUC of 1,100 pounds of CO per megawatt hour.

3.2.8 Senate Bill 1078

SB 1078 establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

3.2.9 Senate Bill 97

The provisions of Senate Bill 97, enacted in August 2007 as part of the State Budget negotiations, direct the Office of Planning and Research to propose CEQA Guidelines advising lead agencies how to mitigate the impacts of greenhouse gas emissions. OPR has been directed to promulgate such guidelines by July 2009, and the Resources Agency has been directed to adopt such guidelines by January 2010. At this time, however, there are no CEQA Guidelines or other formal direction from regulatory agencies regarding the analysis of greenhouse gas emissions.

3.2.10 Additional California Climate Change Initiatives

The Western Regional Climate Action Initiative was signed on February 26, 2007 by five states: Washington, Oregon, Arizona, New Mexico, and California. British Columbia, Canada joined on April 20, 2007. The Initiative calls for collaboration to identify, evaluate, and implement ways to reduce GHG emissions in the states collectively and to achieve related co-benefits. The Initiative calls for designing a regional market-based multi-sector mechanism, such as a load-based cap and trade program by August 2008. In addition, a multi-state registry will track, manage, and credit entities that reduce GHG emissions. California is also exploring the possibility of cap and trade systems for greenhouse gases. The Market Advisory Committee to CARB published draft recommendations for designing a greenhouse gas cap and trade system for California (Ontario 2007).

3.3 Regional

3.3.1 South Coast Air Quality Management District

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Basin. To that end, the SCAQMD, a regional agency, works directly with the Southern California Association of Governments (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). The most recent of these was adopted by the Governing Board of the SCAQMD on June 1, 2007, to update and revise the previous 2003 AQMP. The 2007 AQMP was prepared to comply with the federal and State Clean Air Acts and amendments, to accommodate growth, to reduce the high pollutant levels in the Basin, to meet federal and State ambient air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The purpose of the 2007 AQMP for the Basin is to set forth a comprehensive program that will lead the area into compliance with all federal and State air quality planning requirements. Compared with the 2003 AQMP, the 2007 AQMP utilizes revised emissions inventory

projections that use 2003 as the base year, relies on the CARB on-road motor vehicle emissions model EMFAC2007 and the SCAG 2004 Regional Transportation Plan (RTP) forecast assumptions, updates the attainment demonstration for the federal standards for ozone, replaces the 2003 attainment demonstration for the federal CO standard and provides a basis for a maintenance plan for CO for the future, and updates the maintenance plan for the federal NO_2 standard that the Basin has met since 1992. In terms of working towards ozone attainment, the 2007 AQMP builds upon the 2003 AQMP. In terms of PM_{10} and $PM_{2.5}$ attainment, the PM_{10} and $PM_{2.5}$ control strategy in the 2007 AQMP has augmented the 2003 AQMP with a number of additional PM_{10} and $PM_{2.5}$ control measures.

The 2007 AQMP also addresses several State and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. Specifically, the 2007 AQMP is designed to satisfy the California *Clean Air Act* (CCAA) tri-annual update requirements and fulfill the SCAQMD's commitment to update transportation emission budgets based on the latest approved motor vehicle emissions model and planning assumptions.

The 2007 AQMP control measures consist of (1) the District's Stationary and Mobile Source Control Measures; (2) CARB's Proposed State Strategy; (3) District Staff's Proposed Policy Options to Supplement CARB's Control Strategy; and (4) Regional Transportation Strategy and Control Measures provided by SCAG. Overall, there are 31 stationary and 30 mobile source measures that are defined under the 2007 AQMP. These measures primarily rely on the traditional command-and-control approach facilitated by market incentive programs, as well as advanced technologies expected to be implemented in the immediate future. The proposed control measures in the 2007 AQMP are based on implementation of all feasible control measures through the application of available technologies and management practices, as well as advanced technologies and control methods. The basic principles used in designing the District's control strategy were to (1) meet at least the same overall remaining emissions target of the 2003 SIP; (2) replace long-term measures with more specific near-term measures, where feasible; and (3) develop new short-term control measures and long-term strategies to achieve the needed reductions for attainment demonstration. Principal control measures of the 2007 AQMP focus on adoption of new regulations or enhancement of existing 2003 AQMP regulations for stationary sources and implementation/facilitation of advanced transportation technologies (i.e., zero emission and alternative-fueled vehicles and infrastructure; fuel cell vehicles; heavy-duty electric and hybrid-electric vehicles; and both capital and non-capital transportation improvements). Capital improvements consist of high-occupancy vehicle (HOV) lanes; transit improvements; traffic flow improvements; park-and-ride and intermodal facilities; and freeway, bicycle, and pedestrian facilities. Non-capital improvements consist of rideshare matching and transportation demand management activities derived from the congestion management program.

Programs set forth in the 2007 AQMP require the cooperation of all levels of government: local, regional, State, and federal. Each level is represented in the Plan by the appropriate agency or jurisdiction that has the authority over specific emissions sources. Accordingly, each agency or jurisdiction is associated with specific planning and implementation responsibilities.

3.4 Local

3.4.1 City of Huntington Beach General Plan

Local jurisdictions, such as the City of Huntington Beach, have the authority and responsibility to reduce air pollution through their police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City of Huntington Beach is also responsible for the implementation of transportation control measures as outlined in the AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the CEQA Air Quality Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction. Applicable goals, objectives, and policies from the Air Quality Element of the General Plan are identified below.

Goal AQ 1 Improve regional air quality by a) decreasing reliance on single occupancy vehicular trips, b) increasing efficiency of transit, c) shortening vehicle trips through a more efficient jobs-housing balance and a more efficient land use pattern, and d) increasing energy efficiency.

Objective AQ 1.8 Reduce particulate emissions from paved and unpaved roads, parking lots, and road and building construction by 50 percent by 2000 as required by Southern California Air Quality Management District.

Policy AQ 1.8.1 Continue to enforce construction site guidelines that require truck operators to minimize particulate emission.

Policy AQ 1.8.2 Require installation of temporary construction facilities (such as wheel washers) and implementation of construction practices that minimize dirt and soil transfer onto public roadways.

Objective AQ 1.9 Minimize sensitive uses (residential, hospitals, schools, etc.) exposure to toxic emissions.

Policy AQ 1.9.1 Assure that sufficient buffer areas exist between a sensitive use and a potential toxic emission source.

Objective AQ 1.10 Reduce the amount of energy consumed by commercial uses by 15 percent by 2000 and 30 percent by 2010. Reduce the amount of energy consumed by residential use by 4.5 percent by 1994 and 30 percent by 2010 as required by Southern California Air Quality Management District.

Policy AQ 1.10.1 Continue to require the utilization and installation of energy conservation features in all new construction.

Consistency Analysis

Both Option 1 and Option 2 of the proposed project would be consistent with the goals and policies of the City of Huntington Beach General Plan. Either option would develop a mixed-use residential and retail center in close proximity to transit and educational outlets, such as Golden West City College. The Golden West Transportation Center is located within walking distance of the proposed project site and provides mass transit access throughout the City, as well as the County of Orange. As a result of the site's proximity to the transit station, as well as its proximity to nearby destinations, residents of the proposed project would be encouraged to use alternative modes of transportation, including mass transit, walking, and biking to reduce the amount of vehicle emissions attributed to shoppers and to students. Further, as a mixed-use project, residents would be able to purchase items from the retail portion of the proposed project, reducing vehicle trips that would otherwise occur. Therefore, both Option 1 and Option 2 would be consistent with the goals and policies of the City's General Plan.

4.0 Project Impacts and Mitigation

4.1 Analytic Method

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to implementation of the proposed project. The proposed project contains two options, as identified in the Introduction. These include the GPA/ZTA Option 1 (Option 1) and the GPA/ZTA Option 2 (Option 2). Option 1 would include 713 residential units and 138,085 sf of commercial space. Option 2 would include 538 residential units and 414,255 sf of commercial space. Air pollutant emissions associated with either option could result from construction activities, operation, and project-related traffic volumes. Air quality impacts are estimated in relationship to the nearest schools, hospitals, convalescent homes, and other sensitive uses. The health of people on these properties may be adversely impacted if air emissions exceed a level deemed significant by federal or State agencies. The net increase in proposed project site emissions generated by these activities and other secondary sources have been quantitatively estimated and compared to thresholds of significance recommended by the SCAQMD.

Construction Emissions

Construction emissions are calculated by estimating the types and number of pieces of equipment that would be used to grade, excavate, and develop the proposed project site, construct the proposed mixed-use project, and plant new landscaping within the proposed project site. Construction emissions are analyzed according to the thresholds established by the SCAQMD. The construction activities associated with the proposed mixed-use project would cause diesel emissions, and would generate emissions of dust. Construction equipment within the proposed project site that would generate VOC and NO_X pollutants could include graders, dump trucks, and bulldozers. Some of this equipment would be used during grading activities as well as when the structure is developed on the proposed project site. It is assumed that all construction equipment used would be diesel-powered.

Operational Emissions

Operational emissions associated with either option were estimated using the URBEMIS 2007 computer model developed for CARB and information provided in the traffic study prepared by Austin-Foust Associates for the proposed project. Operational emissions would be comprised of mobile source emissions and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the proposed project site associated with operation of either of the proposed mixed-use options. Area source emissions are generated by natural gas consumption for space and water heating, and landscape maintenance equipment. To determine if an air quality impact would occur, the increase in emissions was compared with the SCAQMD's recommended thresholds.

Localized Pollutant Concentrations for Construction

Localized Significance Thresholds (LSTs) were developed in response to the SCAQMD Governing Board's Environmental Justice Enhancement Initiative (I-4). The LST methodology was provisionally adopted by the SCAQMD Governing Board in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005. LSTs represent the maximum emissions from a project that are not expected to 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 source receptor area and distance to the nearest sensitive receptor.

LSTs only apply to CO, NO_2, PM_{10}, and $PM_{2.5}$ emissions during construction at the discretion of the lead agency. Screening-level analysis of LSTs using the LST lookup tables developed by SCAQMD is only recommended for project sites that are 5 acres or less. The SCAQMD recommends that any project over 5 acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. As the

total size of the proposed project site is approximately 15.85 acres, ISCST3 dispersion modeling was performed for CO, NO_2, PM_{10}, and $PM_{2.5}$ emissions during construction of the proposed project using the BEEST dispersion model. NO_X to NO_2 conversion was accounted for during the modeling to determine the maximum NO_2 concentrations at the nearest sensitive receptors. Dispersion modeling can be done on a voluntary basis by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs have been established by the SCAQMD only for construction of projects and do not apply to emissions during operation as localized concentration cannot be properly quantified during operation due to the variable locations of mobile sources, which make up the largest source of criteria air pollutants during operation of the proposed project. Only CO concentrations at roadway intersections with an adverse LOS may be quantified, and the methodology for this is described below.

Localized CO Concentrations for Operation

The SCAQMD recommends that ambient air quality effects of traffic emissions be evaluated using the CALINE4 dispersion model and traffic volumes provided in the proposed project traffic study, which is included in its entirety as Appendix A. CALINE4 is a Gaussian dispersion model specifically designed to evaluate air quality impacts of roadway projects. Each roadway link analyzed in the model is treated as a sequence of short segments. Each segment of a roadway link is treated as a separate emission source producing a plume of pollutants which disperses downwind. Pollutant concentrations at any specific location are calculated using the total contribution from overlapping pollution plumes originating from the sequence of roadway segments. For this analysis, CO concentrations from thirteen roadway intersections determined to operate at LOS D, E, or F in 2030 were analyzed using a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District and accepted by the SCAQMD. The simplified model is intended as a screening analysis, which identifies a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations. All other roadway intersections are expected to operate at LOS C or better, and would therefore generate lower CO concentrations.

Greenhouse Gas Emissions/Climate Change

Currently, no State or regional regulatory agency has formally adopted or agreed upon thresholds of significance for greenhouse gas emissions, or issued guidance regarding the analysis of greenhouse gas emissions in EIRs. CEQA Guidelines §15064.7 states that “each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects.” This provides justification for lead agencies to determine their own climate change thresholds. The Association of Environmental Professionals (AEP) recommends that "If a Lead Agency chooses to address GCC [Global Climate Change] in a [CEQA] document, it should be addressed in the context of a cumulative (versus project-specific) impact." Additionally, the California Air Pollution Control Officers Association (CAPCOA) states, “To determine what emission reductions are required for new projects one would have to know accurately the 1990 budget and efficacy of other GHG promulgated regulations as a function of time. Since CARB will not be outlining its regulation strategy for several more years, it is difficult to determine accurately what the new project reductions should be in the short term.” Additionally, the SCAQMD has not established significance thresholds; however, in a February 2008 communication with Dr. Steve Smith, Director of Programs—CEQA Section, the SCAQMD has taken the position that it would be “prudent to calculate GHG emissions in CEQA and NEPA documents.” Dr. Smith further stated, “It is correct that the SCAQMD, as well as most other public agencies, has not yet established significance thresholds for determining the significance of GHG emissions. With regard to determining significance, I agree that it is the lead agency’s responsibility to make such a determination. The California Air Pollution Control Officers Association in its CEQA & Climate Change white paper identifies a number of approaches that can be used to determine significance of GHG emissions. The SCAQMD does not necessarily endorse these approaches, but would not oppose their use as interim methodologies to determine GHG significance.”

Therefore, this Technical Study sought guidance as found in *CEQA & Climate Change; Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (CAPCOA 2008), and utilizes the following methods to assess the significance of the proposed project’s cumulative contribution to global climate change:

1. **Inventory:** An inventory of project greenhouse gases (i.e., CO_2), including motor vehicles, energy use, and solid waste sources, is developed and compared with emissions from State sources.

2. **Compliance with AB 32:** Project compliance with the emission reduction strategies of the California Climate Action Team's (CAT) Report to the Governor and the Attorney General's suggested Global Warming Mitigation Measures is assessed. The CAT report proposes a path to achieve the Governor's greenhouse gas reduction targets contained in Executive Order S-3-05. While the CAT report and Executive Order S-3-05 do not specifically mention CEQA, they do include a list of various measures that can be employed to achieve the GHG reduction targets. Project implementation of feasible and relevant actions listed in the emissions reduction strategies could be the basis for finding a less-than-significant project impact to global climate change in CEQA documents. Similar to Executive Order S-3-05, AB 32 also contains the same reduction target for the year 2020 (i.e., reduction of 2020 greenhouse gas emissions to 1990 levels).

3. **Incorporation of Greenhouse Gas Reduction Measures:** All circumstances where the proposed project incorporates feasible greenhouse gas reduction features and mitigation are identified.

Implementation of the proposed project would generate greenhouse gases through the construction and operation of new residential and commercial uses. Greenhouse gas emissions from the proposed project would specifically arise from project construction and from sources associated with project operation, including direct sources such as motor vehicles, natural gas consumption, solid waste handling/treatment, and indirect sources such as electricity generation. Emissions from these sources are estimated and presented below, under cumulative impacts.

The evaluation below calculates the projected emissions from the project as proposed. There are many characteristics of the proposed project that would reduce the total greenhouse gas emissions compared to a comparable level of development that would occur elsewhere in the region. In particular, as an infill project, located within the center of an urban area and in immediate proximity to transit, the proposed project could result in a relatively high use of non-polluting modes of transportation (such as walking, biking, transit, etc.). The proposed project is an example of a type of project that could have much lower vehicle miles traveled (VMT) than a similar level of development elsewhere in the region due to its proximity to transit, as well as the type and mix of uses throughout the area. These same characteristics would reduce the per capita greenhouse gas emissions from the proposed project.

Also, it is valuable to note one important qualification regarding the calculation and inventory of the proposed project's greenhouse gas emissions. Models and methodologies used in this analysis evaluate and model aggregate emissions. With respect to the global impact of climate change, however, these models do not demonstrate how much these aggregate emissions relating to a particular project are "new" emissions specifically attributable to development pursuant to the project. For example, while motor vehicle greenhouse gas emissions are calculated below, many (and perhaps the large majority of) drivers who will be going to and from the proposed development are already driving and generating greenhouse gas emissions in some other location, and they will effectively relocate those emissions as the project is developed. Likewise, the residents who will generate solid waste greenhouse gas emissions, to some extent, are already generating such emissions elsewhere. Thus, in evaluating the proposed project's contribution to greenhouse gas emissions, these aggregate emission figures are disclosed, but the determination of significance is based upon the consistency of the proposed project with AB 32 and mitigation measures such as those that have been recommended by the California Climate Action Team.

4.2 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2008 CEQA Guidelines. For the purposes of this Technical Study, implementation of Option 1 or Option 2 of the proposed project may result in a potentially significant impact if the proposed project would cause either of the following results:

- 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 non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
- Expose sensitive receptors to substantial pollutant concentrations?
- Create objectionable odors affecting a substantial number of people?

As the agency principally responsible for comprehensive air pollution control in the Basin, the SCAQMD recommends that projects should be evaluated in terms of air pollution control thresholds established by the SCAQMD and published in the CEQA Air Quality Handbook. These thresholds were developed by the SCAQMD to provide quantifiable levels that projects can be compared to. The City utilizes the SCAQMD's thresholds that are in effect at the time that development is proposed in order to assess the significance of quantifiable impacts. The following quantifiable thresholds are currently recommended by the SCAQMD. The City has identified these SCAQMD thresholds as appropriate for the determination of the significance of impacts.

Construction Emissions

The SCAQMD currently recommends that projects with construction-related emissions that exceed any of the following emissions thresholds should be considered significant. The SCAQMD also recommends that any construction-related emissions from individual development projects that exceed these thresholds be considered cumulatively considerable. These thresholds apply to individual development projects only; they do not apply to the emissions collectively generated by related projects:

- 550 pounds per day of CO
- 75 pounds per day of VOC
- 100 pounds per day of NO_X
- 150 pounds per day of SO_X
- 150 pounds per day of PM_{10}
- 55 pounds per day of $PM_{2.5}$

Operational Emissions

The SCAQMD currently recommends that projects with operational emissions that exceed any of the following emissions thresholds should be considered significant. The SCAQMD also recommends that any operational emissions from individual projects that exceed these thresholds be considered cumulatively considerable. These thresholds apply to individual development projects only; they do not apply to the emissions collectively generated by related projects:

- 550 pounds per day of CO
- 55 pounds per day of VOC
- 55 pounds per day of NO_X
- 150 pounds per day of SO_X
- 150 pounds per day of PM_{10}
- 55 pound per day of $PM_{2.5}$

In order to assess cumulative impacts, the SCAQMD recommends that projects be evaluated to determine whether they would be consistent with 2007 AQMP performance standards and project-specific emissions thresholds. In the case of the proposed project, air pollutant emissions would be considered to be cumulatively considerable if the new sources of emissions exceed SCAQMD project-specific emissions thresholds.

Localized Significance Thresholds

As described previously, LSTs were developed in response to the SCAQMD Governing Board's Environmental Justice Enhancement Initiative (I-4). LSTs are only applicable for construction emissions of CO, NO_2, PM_{10}, and $PM_{2.5}$. LSTs do not apply to emissions during operation of either Option 1 or Option 2. Thresholds of significance for localized concentrations were developed by comparing the highest ambient air quality measurements between 2004 and 2006 (as shown in Table 1 [Summary of Ambient Air Quality in the Proposed Project Vicinity]) to the most stringent air quality standards. The difference is the maximum concentration of criteria air pollutants that the proposed project would be able to create without causing an exceedance in the ambient air quality standard. Therefore, the following LSTs apply to construction of the proposed project:

- 15 ppm for 1-hour CO concentrations
- 6 ppm for 8-hour CO concentrations
- 0.156 ppm for 1-hour NO_2 concentrations

As the Basin is in non-attainment for PM_{10} and $PM_{2.5}$, the SCAQMD has established the following LST for PM_{10} and $PM_{2.5}$ concentrations during construction:

- 10.4 µg/m^3 for 24-hour PM_{10} concentrations
- 2.5 µg/m3 for 24-hour $PM_{2.5}$ concentrations

4.3 Effects Not Found to Be Significant

Threshold	Would the project create objectionable odors affecting a substantial number of people?

Neither Option 1 nor Option 2 would propose or facilitate uses that are significant sources of objectionable odors. Potential sources of odor associated with Option 1 and Option 2 may result from construction equipment exhaust and application of asphalt and architectural coatings during construction activities, the temporary storage of typical household solid waste (refuse) associated with residential (long-term operational) uses, as well as odors produced from the various commercial uses, including restaurants. Standard construction requirements would be imposed upon the Applicant to minimize odors from construction. Any construction-related odor emissions would be temporary, short-term, and intermittent in nature, and impacts associated with construction-generated odors are expected to be less than significant. It is expected that any project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the City's solid waste regulations. Therefore, odors associated with construction and operation of Option 1 or Option 2 would be ***less than significant***. No mitigation is required.

4.4 Project Impacts and Mitigation

Threshold	Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact 1 **Both Option 1 and Option 2 would provide new sources of regional air emissions, but would not impair implementation of the Air Quality Management Plan.**

The 2007 AQMP, discussed previously, was prepared to accommodate growth, to reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, to return clean air to the region, and to minimize the impact on the economy. Projects that are considered to be consistent with the AQMP would not interfere with attainment, because this growth is included in the projections used to formulate the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumptions used in the development of

the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

Projects that are consistent with the projections of employment and population forecasts identified in the Growth Management Chapter of the RCPG are considered consistent with the AQMP growth projections. In turn, projects that are consistent with the City's General Plan are considered to be consistent with the Growth Management Chapter, as the General Plan forms the basis for population and employment forecasts in the RCPG. This is because the Growth Management Chapter forms the basis of the land use and transportation control portions of the AQMP.

Option 1 proposes to develop a mixed-use residential and commercial center within the City. This Option proposes to develop 713 residential units and 138,085 sf of commercial space. Option 2 also proposes to develop a mixed-use retail and commercial site, with 538 residential units and 414,000 sf of commercial use. Under either option, population at the site would increase between 1,426 persons under Option 2 and 1,890 persons under Option 1, assuming Huntington Beach's average household size on 2.65 in 2007. These numbers represent the greatest potential increases in population, and actual numbers could be less. Once operational, Option 1 is anticipated to generate 411 new jobs, while Option 2 is estimated to generate 541 new jobs.

The proposed project site is currently planned for commercial regional and residential land uses under the General Plan. Under the existing General Plan, the project site could allow a maximum of 396 residential units and 345,213 sf of commercial space. Option 1 would result in a greater number of residential units than what is currently allowed, but would reduce the amount of commercial square footage on the site. Option 2 would result in a slightly greater number of residential units and a larger amount of square footage for commercial uses. Therefore, either option under the proposed project would be similar to what would be currently allowed under the existing General Plan. Therefore, population increases as a result of the proposed project would be similar to those projected by SCAG and subsequently used for the 2007 AQMP. Further, past residential projects within the City of Huntington Beach have not reached the full size allowed under the General Plan for those sites (Broeren 2008). Many of these projects have been developed to 70 percent of the total allowable size with the City not reaching its full population potential within the time frame previously anticipated. By way of example, the majority of the City's new housing growth in the last 10 years has occurred in the Holly Sea Cliff area. The total number of units built is 33 percent less than what could have been built at allowed densities. Similarly, recent developments along the coast, Waterfront Residential and Boardwalk/Mystic Point, have developed at densities that are 20 and 50 percent less than permitted respectively (Broeren 2008). Therefore, development of either Option 1 or Option 2 of the proposed project would result in a ***less-than-significant*** impact with respect to conflicting with the existing AQMP.

Threshold	Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Impact 2 **Peak construction activities associated with Option 1 and Option 2 could generate emissions that exceed SCAQMD thresholds.**

Estimated air emissions from the proposed project's construction activities were calculated using the URBEMIS 2007 emissions model approved by CARB. URBEMIS is a planning tool for estimating air emissions related to land use projects. The model incorporates mobile source emissions from the EMFAC 2007 computer model for as well as the Institute of Transportation Engineers (ITE) trip generation rates for vehicle emission projections.

Construction activities associated with both Option 1 and Option 2 would generally involve five stages: (1) abatement and demolition, (2) excavation and shoring, (3) trenching, (4) construction (which includes pile driving and building and parking construction) and (5) final coating along with landscaping improvements and paving activities.

Option 1

Option 1 would involve the demolition of the existing on-site buildings, followed by the construction of 713 units and a little over 138,000 sf of commercial space. Construction is anticipated to begin in the first quarter of 2009 and is estimated to take 41 months to complete. No more than 2 acres would be disturbed at any one period of time by earth-moving equipment. Because of the construction time-frame and the normal day-to-day variability in construction activities, it is difficult, if not impossible to precisely quantify the daily emissions associated with each phase of the proposed construction activities. Nonetheless, Table 3 identifies daily emissions that are estimated to occur on peak construction days for Option 1. These calculations assume that appropriate dust control measures would be implemented during each phase of development as required by SCAQMD Rule 403—Fugitive Dust, and that all other appropriate mitigation, such as routine equipment maintenance, has been used.

As shown, construction-related daily emissions would exceed SCAQMD significance thresholds for NO_X during the demolition and site grading phases and VOCs emitted during the architectural coating (painting) phase of Option 1. No other threshold is anticipated to be exceeded during construction.

Table 3 Estimated Peak Daily Construction Emissions in Pounds per Day—Option 1

	Peak Day Emissions in Pounds per Day					
Emissions Source	*VOC*	*NO_x*	*CO*	*SO_X*	*PM_{10}[a]*	*$PM_{2.5}$[a]*
Demolition Phase (3.5 months)						
Construction Equipment	9.07	79.44	30.93	0.00	3.61	3.32
On-Road Vehicles	1.51	21.09	7.71	0.02	0.94	0.81
Fugitive Dust[a]	0.00	0.00	0..00	0.00	14.28	2.97
Worker Trips	0.08	0.16	2.64	0.00	0.02	0.02
Maximum Daily Emissions	*10.67*	*100.68*	*41.29*	*0.03*	*18.68*	*7.12*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	Yes	No	No	No	No
Site Grading (2 months)						
Construction Equipment	16.47	146.14	65.27	0.00	6.65	6.12
On-Road Vehicles	1.30	18.06	6.60	0.02	0.81	0.70
Fugitive Dust[a]	0.00	0.00	0.00	0.00	20.72	4.33
Worker Trips	0.12	0.22	3.70	0.00	0.03	0.02
Maximum Daily Emissions	*17.89*	*164.42*	*75.57*	*0.03*	*28.22*	*11.16*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	Yes	No	No	No	No
Trenching (4 months)						
Construction Equipment	9.01	77.04	30.27	0.00	3.73	3.43
Worker Trips	0.08	0.16	2.64	0.00	0.02	0.01
Maximum Daily Emissions	*9.09*	*77.19*	*32.92*	*0.00*	*3.75*	*3.44*
SCAQMD Threshold	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	No	No	No	No	No

Table 3 Estimated Peak Daily Construction Emissions in Pounds per Day—Option 1

Emissions Source	Peak Day Emissions in Pounds per Day					
	VOC	NO_x	CO	SO_x	PM_{10}[a]	$PM_{2.5}$[a]
Construction Phase (33.5 months)						
Construction Equipment	7.14	63.46	24.94	0.00	3.07	2.82
Vendor Trips	1.71	21.09	15.44	0.03	0.99	0.84
Worker Trips	2.00	3.77	63.64	0.08	0.55	0.29
Maximum Daily Emissions	*10.85*	*88.32*	*104.02*	*0.11*	*4.61*	*3.95*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	No	No	No	No	No
Paving (1 month)						
Construction Equipment	5.37	34.99	19.74	0.00	2.57	2.36
On-Road Vehicles	0.08	1.02	0.38	0.00	0.04	0.04
Worker Trips	0.08	0.16	2.78	0.00	0.03	0.02
Maximum Daily Emissions	*5.53*	*36.16*	*22.90*	*0.01*	*2.64*	*2.42*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	No	No	No	No	No
Architectural Coating (1 month)						
Architectural Coating[b]	333.47	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.30	0.57	10.21	0.02	0.11	0.06
Maximum Daily Emissions	*333.78*	*0.57*	*10.21*	*0.02*	*0.11*	*0.06*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	Yes	No	No	No	No	No

SOURCE: PBS&J, 2008. Calculation sheets are provided in Appendix A.

[a] Assumes watering of the Proposed Project Site would occur three times per day.

[b] Assumes the use of low VOC on all surfaces of Option 1.

The following standard City Requirements (CR) shall be implemented (and complied with), prior to issuance of any grading permit as part of the construction of Option 1 to improve air quality emissions generated by construction activities associated with the proposed project.

CR1(a) *Prior to issuance of any grading permit, the name and phone number of the contractor's superintendent hired by the Applicant shall be submitted to the Departments of Planning and Public Works. In addition, clearly visible signs shall be posted on the perimeter of the site every 250 feet indicating who shall be contacted for information regarding this development and any construction/grading-related concerns. This contact person shall be available immediately to address any concerns or issues raised by adjacent property owners during the construction activity. He/She will be responsible for ensuring compliance with the conditions herein, specifically, grading activities, truck routes, construction hours, noise, etc. Signs shall include the Applicant's contact number regarding grading and construction activities, and "1-800-CUTSMOG" in the event there are concerns regarding fugitive dust and compliance with SCAQMD Rule No. 403.*

CR1(b) *Prior to issuance of any grading permit, the Applicant shall notify all property owners and tenants within 300 feet of the perimeter of the property of a tentative grading schedule at least 30 days prior to such grading.*

CR1(c) *Prior to issuance of any grading permit or surcharge activities, the Applicant shall demonstrate that the grading/erosion control plan will abide by the provisions of SCAQMD's Rule 403 as related to fugitive dust control.*

CR1(d) *Prior to issuance of any grading permit, wind barriers shall be installed along the perimeter of the site and/or around areas being graded.*

The following City Requirement shall be followed by the Applicant to further ensure that construction of Option 1 follows the rules established by SCAQMD Rule 403 relating to fugitive dust.

CR2 *As required by SCAQMD Rule 403—Fugitive Dust, all construction activities that are capable of generating fugitive dust are required to implement dust control measures during each phase of proposed project development to reduce the amount of particulate matter entrained in the ambient air. These measures include the following:*

- *Limiting the amount of area disturbed during site grading to 2 acres per day or less*
- *Application of soil stabilizers to inactive construction areas*
- *Quick replacement of ground cover in disturbed areas*
- *Watering of exposed surfaces three times daily*
- *Watering of all unpaved haul roads three times daily*
- *Covering all stock piles with tarp*
- *Reduction of vehicle speed on unpaved roads*
- *Post signs on site, limiting traffic to 15 miles per hour or less*
- *Sweep streets adjacent to the proposed project site at the end of the day if visible soil material is carried over to adjacent roads*
- *Cover or have water applied to the exposed surface of all trucks hauling dirt, sand, soil, or other loose materials prior to leaving the site to prevent dust from impacting the surrounding areas*
- *Install wheel washers where vehicles enter and exit unpaved roads onto paved roads to wash off trucks and any equipment leaving the site each trip*

Mitigation measure **MM1(a)** would require all construction equipment be turned off when not in use, to reduce vehicular emissions.

MM1(a) *During construction, any gas or diesel fueled equipment, including vehicles, not in use or left to idle for more than 5 minutes shall be turned off.*

The identified City Requirements would further reduce construction emissions. Mitigation measure **MM1(b)** would require the use of low VOC paints on all interior and exterior surfaces at the proposed project site.

MM1(b) *The proposed project Applicant(s) shall require by contract specifications that the architectural coating (paint and primer) products used would have a low VOC rating. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a building permit.*

Although mitigation measure **MM1(b)** would require the use of low VOC paint for the coating of Option 1, VOC emissions would remain above the thresholds established by the SCAQMD, as identified in Table 3. Further, NO_X emissions would remain above the established thresholds established by the SCAQMD, despite the identified City Requirements and Mitigation Measures. Therefore, construction impacts of the proposed project would remain ***significant and unavoidable***.

Option 2

Option 2 would also involve the demolition of the existing on-site buildings, followed by the construction of 538 residential units and 414,255 sf of commercial space. Construction is anticipated to begin in the first quarter of 2009 and is estimated to take 41 months to complete. No more than 2 acres would be disturbed at any one period of time by earth moving equipment. Because of the construction time frame and the normal day-to-day variability in construction activities, it is difficult, if not impossible, to precisely quantify the daily emissions associated with each phase of the proposed construction activities. Nonetheless, Table 4 identifies daily emissions that are estimated to occur on peak construction days for Option 2. These calculations assume that appropriate dust control measures would be implemented during each phase of development as required by SCAQMD Rule 403—Fugitive Dust, and that all other appropriate mitigation, such as routine equipment maintenance, has been used.

As shown, construction-related daily emissions would exceed SCAQMD significance thresholds for NO_X during the demolition and site grading phases as well as VOC emitted during the coating phase of the proposed project. No other threshold is anticipated to be reached during construction.

The same City Requirements and Mitigation Measures identified for Option 1 would apply to Option 2. These include: **CR1(a)** through **CR1(d)**, **CR2**, and **MM1(a)** and **MM1(b)**.

Although mitigation measure **MM1(b)** would require the use of low VOC paint for project coating, VOC emissions would remain above the thresholds established by the SCAQMD. Further, emissions of NO_X would remain above the established thresholds during demolition and grading activities, despite the identified measures. Therefore, construction impacts of the proposed project would remain ***significant and unavoidable***.

Table 4 Estimated Peak Daily Construction Emissions in Pounds per Day—Option 2

Emissions Source	*Peak Day Emissions in Pounds per Day*					
	VOC	*NO_X*	*CO*	*SO_X*	*PM_{10}[a]*	*$PM_{2.5}$[a]*
Demolition Phase (3.5 months)						
Construction Equipment	9.07	79.44	30.93	0.00	3.61	3.32
On-Road Vehicles	1.51	21.09	7.71	0.02	0.94	0.81
Fugitive Dust[a]	0.00	0.00	0.00	0.00	14.28	2.97
Worker Trips	0.08	0.16	2.64	0.00	0.02	0.01
Maximum Daily Emissions	*10.67*	*100.68*	*41.29*	*0.03*	*18.86*	*7.12*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	Yes	No	No	No	No
Site Grading (2 months)						
Construction Equipment	16.47	146.14	65.27	0.00	6.65	6.12
On-Road Vehicles	1.30	18.06	6.60	0.02	0.81	0.70
Fugitive Dust	0.00	0.00	0.00	0.00	20.72	4.33

Table 4 Estimated Peak Daily Construction Emissions in Pounds per Day—Option 2

Emissions Source	Peak Day Emissions in Pounds per Day					
	VOC	NO_x	CO	SO_x	PM_{10}[a]	$PM_{2.5}$[a]
Worker Trips	0.12	0.22	3.70	0.00	0.03	0.02
Maximum Daily Emissions	*17.89*	*164.42*	*75.57*	*0.03*	*28.22*	*11.16*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	Yes	No	No	No	No
Trenching (4 months)						
Construction Equipment	9.01	77.04	30.27	0.00	3.73	3.43
On-Road Vehicles	0.08	0.16	2.64	0.00	0.02	0.01
Maximum Daily Emissions	*9.09*	*77.19*	*32.92*	*0.00*	*3.75*	*3.44*
SCAQMD Threshold	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	No	No	No	No	No
Construction Phase (33.5 months)						
Construction Equipment	7.14	63.46	24.94	0.00	3.07	2.82
Vendor Trips	1.58	19.49	14.42	0.03	0.92	0.77
Worker Trips	2.17	4.09	68.99	0.08	0.59	0.32
Maximum Daily Emissions	*10.89*	*87.05*	*108.36*	*0.12*	*4.58*	*3.91*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	No	No	No	No	No
Paving (1 month)						
Construction Equipment	5.37	34.99	19.74	0.00	2.57	2.36
On-Road Vehicles	0.08	1.02	0.38	0.00	0.04	0.04
Worker Trips	0.08	0.16	2.78	0.00	0.03	0.02
Maximum Daily Emissions	*5.53*	*36.16*	*22.90*	*0.01*	*2.64*	*2.42*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	No	No	No	No	No
Coating (1 month)						
Architectural Coating[b]	550.27	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.33	0.62	11.01	0.02	0.12	0.06
Maximum Daily Emissions	*550.60*	*0.62*	*11.01*	*0.02*	*0.12*	*0.06*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	Yes	No	No	No	No	No

SOURCE: PBS&J, 2008. Calculation sheets are provided in Appendix A.

[a] Assumes watering of the proposed project Site would occur three times per day.

[b] Assumes the use of low VOC on all surfaces of Option 2.

Threshold	Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Impact 3 **Daily operation of either Option 1 or Option 2 could generate emissions that exceed SCAQMD thresholds.**

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities on the proposed project site after occupation. Under either option, full operations are expected to begin in the last quarter of 2012. Stationary area source emissions would be generated by the consumption of natural gas for space and water heating devices, and the operation of landscape maintenance equipment. Mobile emissions would be generated by the motor vehicles traveling to and from the proposed project site. The analysis of daily operational emissions has been prepared utilizing the URBEMIS 2007 computer model recommended by the SCAQMD.

Option 1

Stationary operational emissions for Option 1 are identified in Table 5 below.

Table 5 Project Daily Operational Emissions—Stationary Sources—Option 1

	Emissions in Pounds per Day					
Emissions Source	***VOC***	***NO_X***	***CO***	***SO_X***	***PM_{10}***	***PM_{25}***
Natural gas	0.64	8.33	4.10	0.00	0.02	0.02
Landscaping	0.26	0.04	3.21	0.00	0.01	0.01
Consumer Products	36.58	—	—	—	—	—
Architectural Coatings	2.02	—	—	—	—	—
Maximum Daily Emissions	*39.50*	*8.37*	*7.31*	*0.00*	*0.03*	*0.03*
Thresholds (lb/day)	55.00	55.00	550.00	150.00	150.00	55.00
Significant Impact	No	No	No	No	No	No

SOURCE: PBS&J, 2008. Calculation sheets are provided in Appendix A.

As shown in Table 5, operation of Option 1 would not result in stationary emissions that exceed the thresholds of significance recommended by the SCAQMD.

Mobile source emissions would also occur as a result of operation of Option 1. Table 6 identifies the emissions associated area sources.

Table 6 Project Daily Operational Emissions—Mobile Sources—Option 1

	Emissions in Pounds per Day					
Emissions Source	***VOC***	***NO_X***	***CO***	***SO_X***	***PM_{10}***	***PM_{25}***
Apartments	27.73	31.18	318.86	0.39	64.20	12.40
Commercial	32.93	44.74	435.50	0.55	91.67	17.68
Maximum Daily Emissions	*60.66*	*75.92*	*754.36*	*0.94*	*155.87*	*30.08*
Thresholds (lb/day)	55.00	55.00	550.00	150.00	150.00	55.00
Significant Impact	Yes	Yes	Yes	No	Yes	No

SOURCE: PBS&J, 2008. Based on Summer Outputs. Computer sheets are provided in Appendix A.

In order to reduce idling time of delivery trucks to the proposed project site during operation, and therefore, reduce the amount of vehicle emissions emitted during operation of Option 1, the following mitigation measure shall be implemented:

MM2 *The proposed project Applicant shall require by contract specifications that electrical outlets are included in the building design of the loading docks to allow use by refrigerated delivery trucks. The proposed project Applicant shall require that all delivery trucks do not idle for more than five minutes. If loading and/or unloading of perishable goods would occur for more than five minutes, and continual refrigeration is required, all refrigerated delivery trucks shall use the electrical outlets to continue powering the truck refrigeration units when the delivery truck engine is turned off.*

As shown in Table 6, mobile source emissions during operation of Option 1 would generate emissions that exceed the thresholds of significance recommended by the SCAQMD for VOC, NO_X, CO, and PM_{10}. Emissions of SO_X and $PM_{2.5}$ during operation of Option 1 would not exceed thresholds of significance recommended by the SCAQMD. The exceedance of the SCAQMD thresholds for these four criteria pollutants is primarily due to the increase in motor vehicles traveling to and from the proposed project site, as stationary emissions would not exceed thresholds. Implementation of mitigation measure **MM2** would help reduce operational emissions, but not to a less-than-significant level. As no further feasible mitigation is available to reduce these emissions, this impact would remain ***significant and unavoidable***.

Option 2

Option 2 would involve the stationary and mobile source emissions as a result of proposed project operation. Table 7 identifies the projected daily emissions for stationary sources associated with operation of Option 2.

Table 7 Project Daily Operational Emissions—Stationary Sources—Option 2

	Emissions in Pounds per Day					
Emissions Source	***VOC***	***NO_X***	***CO***	***SO_X***	***PM_{10}***	***PM_{25}***
Natural gas	0.70	9.28	5.61	0.00	0.02	0.02
Landscaping	0.26	0.04	3.21	0.00	0.01	0.01
Consumer Products	27.60	—	—	—	—	—
Architectural Coatings	3.34	—	—	—	—	—
Maximum Daily Emissions	*31.90*	*9.32*	*8.82*	*0.00*	*0.03*	*0.03*
Thresholds (lb/day)	55.00	55.00	550.00	150.00	150.00	55.00
Significant Impact	No	No	No	No	No	No

SOURCE: PBS&J, 2008. Computer sheets are provided in Appendix A.

Stationary source emissions resulting from operation of the commercial and residential uses of Option 2 would not exceed thresholds established by the SCAQMD.

Area source emissions, or mobile source emissions would also occur as a result of operation of Option 2. Table 8 identifies the emissions associated area sources.

Table 8 Project Daily Operational Emissions—Mobile Sources—Option 2

Emissions Source	Emissions in Pounds per Day					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Apartments	19.91	22.16	226.64	0.28	45.63	8.81
Commercial	98.72	134.13	1305.74	1.65	274.85	53.00
Maximum Daily Emissions	*118.63*	*156.29*	*1532.38*	*1.93*	*320.48*	*61.81*
Thresholds (lb/day)	55.00	55.00	550.00	150.00	150.00	55.00
Significant Impact	Yes	Yes	Yes	No	Yes	Yes

SOURCE: PBS&J, 2008. Based on Summer Outputs. Computer sheets are provided in Appendix A.

Mitigation measure **MM2**, relating to the inclusion of electrical outlets and the reduction of vehicle idling times for deliveries identified for Option 1 would also apply to Option 2. As shown, mobile source emissions during operation of Option 2 would generate emissions that exceed the thresholds of significance recommended by the SCAQMD for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$. Emissions of SO_X during operation of Option 2 would not exceed thresholds of significance recommended by the SCAQMD. The exceedance of the SCAQMD thresholds for these five criteria pollutants is primarily due to the increase in motor vehicles traveling to and from the proposed project site, as stationary emissions would not exceed thresholds. Implementation of mitigation measure **MM2** would help reduce operational emissions, but not to a less-than-significant level. As no further feasible mitigation is available to reduce these emissions, this impact would remain ***significant and unavoidable*** under Option 2.

Threshold	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact 4 **The proposed project would generate increased local traffic volumes, but would not cause localized CO concentrations at nearby intersections to exceed national or state standards.**

Project-generated traffic could contribute to decreased levels of service at nearby intersections, resulting in additional vehicle emissions and longer vehicle idling times at and near study area intersections. These circumstances could lead to CO hot spots that may affect adjacent sensitive receptors. The simplified CALINE4 screening procedure was used to predict future CO concentrations at the study area intersections that are projected to operate at LOS D or worse with buildout of either Option 1 or Option 2, as these intersections indicated the locations of the highest potential CO concentrations due to vehicle idling.

Option 1 would develop 713 residential units and 138,085 sf of commercial space. Option 1 is anticipated to generate an average of 5,653 daily trips during operation (Austin-Foust 2008). Option 2 would develop 538 residential units and 414,255 sf of commercial use. Under Option 2, an estimated 6,918 daily trips would occur as a result of the proposed project (Austin-Foust). Although both Option 1 and Option 2 are anticipated to generate traffic that would result in certain intersections operating at LOS D or worse, only Option 2 was analyzed to determine potential CO hotspot impacts. Option 2 represents the worst-case scenario with respect to traffic impacts (Austin 2008).

Under Option 2, 13 intersections are projected to operate at LOS D or worse in 2030 (identified in Table 9). The results of the calculations for Option 2 are presented in Table 9 (Carbon Monoxide Concentrations at Selected Intersections in 2030—Option 2) for representative receptor locations at roadway edge (0 feet), 25 feet from the intersection, and 50 feet from the intersection.

Table 9 Carbon Monoxide Concentrations at Selected Intersections in 2030—Option 2

Intersection	Carbon Monoxide (CO) Concentrations in (ppm)					
	Roadway Edge (0 feet)		25 feet		50 feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Goldenwest Avenue and Bolsa Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Goldenwest Avenue and McFadden Avenue	5.1	3.2	5.1	3.2	5.0	3.2
I-405 Southbound Ramp and Center Avenue	5.1	3.2	5.0	3.2	5.0	3.2
Beach Boulevard and Edinger Avenue	5.1	3.3	5.1	3.2	5.1	3.2
Newland Street and Edinger Avenue	5.1	3.2	5.0	3.2	5.0	3.2
Beach Boulevard and Heil Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Gothard Street and Warner Avenue	5.1	3.2	5.1	3.2	5.0	3.2
Beach Boulevard and Warner Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Newland Street and Warner Avenue	5.1	3.2	5.1	3.2	5.0	3.2
Beach Boulevard and McFadden Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Beach Boulevard and Bolsa Avenue	5.1	3.3	5.1	3.2	5.1	3.2
Beach Boulevard and Hazard Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Magnolia Street and Edinger Avenue	5.1	3.2	5.0	3.2	5.0	3.2

SOURCE: PBS&J, 2008; Calculation sheets are provided in Appendix A.

National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.
Federal 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

As shown, future CO concentrations near these intersections would not exceed national or State ambient air quality standards. Therefore, CO hotspots would not occur near these nor any other intersection within the study area in the future as a result of implementation of Option 2, and the contribution of project traffic-related CO at these intersections would be less than established thresholds. This impact would be ***less than significant***.

Additionally, in order to present the most conservative analysis, in consultation with City staff it was determined that Option 2 would create the greatest potential for increases in roadway CO emission levels, as Option 2 would result in the higher future traffic volumes. Therefore, roadway CO concentrations from Option 2 were used to determine the worst-case scenario for project-related increases in roadway CO emissions. Therefore, CO hotspots would not occur near these intersections, or near any other intersections, within the study area in the future as a result of implementation of Option 1. Furthermore, the contribution of project traffic-related CO at these intersections would be less than established thresholds. This impact would be ***less than significant***.

Threshold	Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact 5 **Construction activities associated with development of either Option 1 or Option 2 would generate emissions that could result in an exceedance of localized significance thresholds for CO, NO_2, PM_{10} and $PM_{2.5}$ established by the SCAQMD, and, therefore, could expose sensitive receptors to substantial pollutant concentrations.**

As described above under Impact 2, the emissions from construction activities for Option 1 and Option 2 were estimated using the URBEMIS 2007 emissions model. Construction emissions related to development of these Options are shown in Table 3 (Option 1) and Table 4 (Option 2). Although both Options result in different overall emission rates for the identified pollutants, Option 2 would result in the worst-case scenario in terms of the greatest daily pollutant emissions generated during construction. Therefore, the following analysis is based on the emissions generated by the construction of Option 2. Option 1 was not evaluated, as emissions from construction of Option 1 would be similar to, although slightly less than, those identified for Option 2. For the purposes of this analysis, all emissions shown in Table 4 are assumed to originate from the proposed project site, including use of diesel-powered construction equipment. The on-site combined construction emissions were then used in a dispersion model to estimate associated concentrations at the closest off-site sensitive receptors.

As mentioned above, LSTs have been developed by the SCAQMD to determine maximum allowable concentrations of criteria air pollutants during construction and do not apply to emissions during operation of the proposed project. For projects greater than 5 acres in total area, dispersion modeling is done to determine worst-case pollutant concentration at sensitive receptors associated with construction of the proposed project. Localized concentrations were estimated, as discussed above in the Analytic Method section and assume implementation of City Requirements **CR1(a)** through **CR1(d)**, **CR1**, and Mitigation Measures **MM1(a)** and **MM1(b)**. Total worst-case LST construction emissions for Option 2 of the proposed project are included in Table 10 (Total Construction Emissions and Localized Significance Thresholds—Option 2) and compared to LSTs for SRA 18, the source receptor area that includes the City of Huntington Beach. The maximum modeled concentrations are based on levels measured at sensitive receptors.

Table 10 Total Construction Emissions and Localized Significance Thresholds—Option 2

Pollutant	*Averaging Time*	*Significance Threshold*	*Maximum Modeled Concentration*
CO	1-Hour	15 ppm	0.37 ppm[a]
	8-Hour	6 ppm	0.05 ppm[a]
NO_2	1-Hour	0.156 ppm	0.036 ppm[b]
PM_{10}	24-Hour	10.4 µg/m^3	8.7 µg/m^3 [b]
$PM_{2.5}$	24-Hour	2.5 µg/m^3	3.4 µg/m^3 [b]

SOURCE: PBS&J 2008; Bee-Line Software, BEEST for Windows (Version 9.65); SCAQMD 2003, Localized Significance Threshold Methodology (calculation data sheets provided in Appendix A).

[a] Measured for apartments buildings located 550 feet north of the proposed project site.

[b] Measured for residential units located 760 ft south of the proposed project site.

As shown in Table 10, localized CO 1-hour concentrations, CO 8-hour concentrations, NO_2 1-hour concentrations, and PM_{10} 24-hour concentrations would not exceed SCAQMD thresholds during proposed project construction at any of the identified sensitive receptors. However, Option 2 would exceed the SCAQMD threshold for $PM_{2.5}$ emissions during proposed project construction. Implementation of the identified City Requirements and Mitigation Measures would reduce this impact, but not to a less-than-significant level. The closest sensitive receptors to the proposed project site that would be exposed to elevated levels of $PM_{2.5}$

would be the residential uses to the south of the proposed project site and the residential uses north of the project site, including those at Old World Village and the Seawind Village apartment complex. These residents could be exposed to local concentrations of $PM_{2.5}$ that exceed the SCAQMD's localized significance thresholds. As no further feasible mitigation is available to reduce these concentrations, this impact would be ***significant and unavoidable*** for Option 2.

As discussed above, Option 2 represented the worst-case construction scenario. As identified in Table 3 and Table 4, the largest daily emissions for $PM_{2.5}$ were identical under both Option 1 and Option 2. Therefore, it can be assumed that construction activities associated with Option 1 would result in a similar exceedance of the $PM_{2.5}$ LST at the sensitive receptors identified for Option 2. Therefore, despite the implementation of the identified City Requirements and Mitigation Measures, this impact would be ***significant and unavoidable*** for Option 1 as well.

4.5 Cumulative Impacts

There are eight projects located within one mile of the proposed project site that are currently planned or under construction. Further, The Ripcurl project development is proposed to be developed adjacent to, and west of, the proposed project site. If both developments are approved, construction could occur simultaneously at both the proposed project site and The Ripcurl project site. SCAQMD's approach to determining cumulative air quality impacts for criteria air pollutants is to first determine whether or not the proposed project (Option 1 or Option 2) would result in a significant project-level impact to regional air quality based on SCAQMD significance thresholds. A significant cumulative impact may occur if a project would add a cumulatively considerable contribution of a federal or State non-attainment pollutant. Because the Basin is currently in nonattainment for ozone (for which VOC and NO_X are precursors) and PM_{10} under national and State standards, and is in nonattainment for CO under national standards, projects could cumulatively exceed an air quality standard or contribute to an existing or projected air quality exceedance. With regard to determining the significance of the proposed project's contribution, the SCAQMD neither recommends quantified analyses of cumulative construction or operational emissions, nor provides separate methodologies or thresholds of significance to be used to assess cumulative construction or operational impacts. Instead, the SCAQMD recommends that a project's potential contribution to cumulative impacts should be assessed using the same significance criteria as those for project-specific impacts; that is, individual development projects that generate construction-related or operational emissions that exceed the SCAQMD-recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment.

As identified under Impact 2, both Option 1 and Option 2 would result in a significant and unavoidable impact with respect to VOC and NO_X emissions during construction, despite the identified mitigation measures. Further, operation of either Option 1 or Option 2 is anticipated to result in a significant and unavoidable impact with respect to mobile source emissions, particularly VOC, NO_X, CO and PM_{10} emissions. While operational emissions may be reduced over time through the use of public transit and other emission reducing activities, this would remain a significant impact. Therefore, the emissions generated by construction and operation of either Option 1 or Option 2 would be cumulatively considerable and would constitute a substantial contribution to an existing or projected air quality violation. As described above under Impact 2 and Impact 3, compliance with **CR1(a)-(d)**, implementation of mitigation measures **MM1(a)**, **MM1(b)**, and **MM2** would reduce these emissions, but not to a level of less significance. Therefore, the proposed project would have a ***significant and unavoidable*** cumulative impact to air quality. Furthermore, both Option 1 and Option 2 would result in a cumulatively significant impact with respect to the exceedance of localized significance thresholds. Although the emissions of $PM_{2.5}$ generated by construction under either Option 1 or Option 2 would dissipate as it moves away from the proposed project site, this exceedance would remain a significant and unavoidable impact as it could mix with emissions from The Ripcurl project and result in greater emissions.

Threshold	Would the project make a substantial contribution to greenhouse gas emissions?

In California, the most common GHG is CO_2, which constitutes approximately 84 percent of all GHG emissions (CEC 2006). CO_2 emissions in California are mainly associated with in-State fossil fuel combustion and with fossil fuel combustion in out-of-State power plants supplying electricity to California. Other activities that produce CO_2 emissions include mineral production, waste combustion, and land use changes that reduce vegetation.

By percentage, the transportation sector is the largest contributor to greenhouse gas emissions in California, followed by residential and commercial energy use. California's transportation sector is heavily dependent upon oil, with petroleum-based fuels currently providing nearly all (96 percent) of California's transportation energy needs (State of California 2007). Transportation-related activities represent almost half (48 percent) of California's petroleum-based fuel consumption. Within the transportation sector, light vehicles (i.e., cars, light trucks, and motorcycles) account for about 60 percent of the petroleum-based energy consumption. Electricity generation is the second largest category of GHG emissions in California, followed by natural gas combustion and solid waste processing/disposal.

Implementation of Option 1 or Option 2 would generate greenhouse gases through the construction and operation of new residential and commercial uses. Greenhouse gas emissions from the proposed project would specifically arise from project construction and from sources associated with project operation, including direct sources such as motor vehicles, natural gas consumption, solid waste handling/treatment, and indirect sources such as electricity generation. Emissions from these sources are estimated and presented below.

Option 1

Construction and operation of Option 1 would contribute to greenhouse gas emissions. However, due to the type and size of Option 1, in addition to design features and greenhouse gas emission reduction measures incorporated into the proposed project, this cumulative impact would be considered ***less than significant***. Construction of Option 1 is estimated to last approximately 41 months. During that time, demolition, grading, and building construction would occur. Construction of Option 1 would result in greenhouse gas emissions, particularly CO_2. Table 11 identifies the amount of CO_2 that is estimated to be produced during construction.

Table 11 Estimated CO_2 Construction Emissions, 2009–2012—Option 1

Construction Activity	*Tons CO_2 Produced*
Demolition (2009)	420.61
Mass Grading (2009 and 2010)	264.47
Trenching (2010)	313.66
Building (2010 thru 2012)	5,650.96
Paving (2012)	68.29
Coating (2012)	14.87
Total CO_2 Project Construction Emissions	*6,732.86*

SOURCE: URBEMIS 2007 (output data is provided in Appendix A).

Operation of Option 1 would also contribute to the annual tons of greenhouse gases emitted from the City of Huntington Beach. Operational emissions would primarily result from mobile sources, particularly motor vehicles traveling to and from the proposed project site. Other emissions would result from stationary sources used at the proposed project site. These could include natural gas combustion for heating and electricity consumption. Area (stationary) source emissions during operation are anticipated to result in 1,922 tons of CO_2 per year. Option 1 would also result in an estimated 16,224 tons of CO_2 on an annual basis as a result of

mobile emissions. Table 12 compares the CO_2 estimated to be emitted through stationary and mobile sources from Option 1 to the total tons of CO_2 emitted by the State of California in 2004.

Table 12 Estimated CO_2 Stationary Source (Operational) Emissions (per Year)—Option 1

Geographic Region and Emissions Source	*CO_2(tons)*
State of California (2004)	484,400,000
Proposed Project	18,146

SOURCE: PBS&J, 2008. URBEMIS 2007 (output data is provided in Appendix A); California Air Resource Boards. Inventory from 1990 to 2004. Available at: http://www.arb.ca.gov/cc/inventory/data/data.htm Accessed May 16, 2008.

Option 1 would contribute less than 0.003 percent of the State's 2004 CO_2 emissions. As identified above, Option 1 is estimated to generate (worst-case scenario) approximately 18,146 tons of CO_2 each year.

Since Option 1 involves residential and commercial uses, solid waste generated by development under Option 1 of the proposed project would also contribute to greenhouse gas emissions. Treatment and disposal of municipal, industrial and other solid waste produces significant amounts of CH_4. In addition to CH_4, solid waste disposal sites also produce biogenic CO_2 and non-methane volatile organic compounds (NMVOCs) as well as smaller amounts of N_2O, nitrogen oxides (NO_x) and carbon monoxide (CO). CH_4 produced at solid waste sites contributes approximately 3 to 4 percent to the annual global anthropogenic greenhouse gas emissions (IPCC 2006).

CH_4 and CO_2 emissions from solid waste generated by development under Option 1 of the proposed project were estimated based on formulas provided in the State Workbook: Methodologies for Estimating Greenhouse Gas Emissions (pages 5-1 to 5-3). Estimates were obtained by multiplying the tons of solid waste landfilled annually by the percent of degradable material they contain, by the percent dissimilated and by the pounds of gas produced per pound of biomass. Landfill gas is approximately 50 percent CH_4 and 50 percent CO_2. Total project emission of greenhouse gases from landfill material is shown in Table 13 below. N_2O emissions from landfills are considered negligible (because the microbial environment in landfills is not very conducive to the nitrification and denitrification processes that result in N_2O emissions) and are, therefore, not explicitly modeled as part of greenhouse gas emissions generated through solid waste.

Table 13 Project Operational Greenhouse Gas Emissions from Solid Waste

Geographic Region and Emissions Source	*Solid Waste (tons/year)[a]*	*CH_4 CO_2e (tons)*	*CO_2(tons)*	*Total CO_2e (tons)*
State of California (2005)	38,789,018	33,618,907	2,801,576	36,420,483
City of Huntington Beach (2005)	136,195	118,160	9,831	127,991
Project	668	580.94	48.34	629.28

SOURCE: PBS&J, 2008. California Integrated Waste Management Board. California Waste Stream Profiles. http://www.ciwmb.ca.gov/Profiles/

[a] Landfill gas emissions = tons landfilled x.22x.77x.67.

Development under Option 1 of the proposed project would use electricity for its commercial, residential, retail and other components, which would contribute to greenhouse gas emissions. The generation of electricity through the combustion of fossil fuels typically yields CO_2 and, to a much smaller extent, CH_4 and N_2O. In order to determine emissions from electricity consumption, annual electricity use must be established. The project- related electricity emissions were estimated by using project electricity and natural gas use estimates (see section 4.13 of the Draft EIR, Utilities and Service Systems section). The emissions factors for electricity

use and natural gas combustion were obtained from the California Climate Action Registry (CCAR 2007). Greenhouse gas emissions from these two sources are as shown in Table 14 and Table 15 below.

Table 14 Project Operational Greenhouse Gas Emissions from Electricity Use

Geographic Region and Emissions Source	Energy Use MWh/year	N_2O (Tons)[a]	N_2O CO_2e (Tons)	CO_2 (Tons)[i]	CH_4 M (Tons)[ii]	CH_4 CO_2e (Tons)	Total CO_2e (Tons)
State of California (2005)	272,449,000	504	156,250	109,598,059	913	19,167	109,773,476
Project	6,900	0[d]	3.9	2,774	0[d]	0.51	2,778.41

SOURCE: PBS&J, 2008. California Energy Commission. California Energy Demand 2008-2016. November 2007.

[a] Emissions Factor of .0037 was used for N_2O.

[b] Emissions Factor of 804.54 was used for CO_2.

[c] Emissions Factor of .0067 was used for CH_4.

[d] Value is equal to or less than 0.4 tons.

Table 15 Project Operational Greenhouse Gas Emissions from Natural Gas Combustion

Geographic Region and Emissions Source	Energy Use Therms/year	N_2O (Tons)[a]	N_2O CO_2e (Tons)	CO_2 (Tons)[b]	CH_4 M (Tons)[c]	CH_4 CO_2e (Tons)	Total CO_2e (Tons)
State of California (2005)	13,039,000,000	144	44,556	75,888,858	8,480	178,080	76,111,494
Project	925,421	0[d]	0[iv]	5,367	0[d]	0[d]	5,367

SOURCE: PBS&J, 2008. California Energy Commission. California Energy Demand 2008-2016. November 2007.

[a] Data from 2004 Statewide Inventory.

[b] Same source.

[c] Calculated for each area by multiplying annual kWh per year of energy use x natural gas emissions factor.

[d] Value is equal to or less than 0.4 tons.

Additionally, as identified below (Table 21), Option 1 of the proposed project, as well as the City of Huntington Beach, has numerous programs and policies in place that would further reduce greenhouse gas emissions. Therefore, operation of development under Option 1 is anticipated to have a ***less-than-significant*** impact on climate change as it would introduce a negligible increase in the cumulative sphere of climate change emissions. This cumulative impact is based solely on the quantified data available for Option 1 and does not represent an accepted threshold under CEQA, as there are currently no established thresholds for greenhouse gas emissions or climate change.

Option 2

Development under Option 2 would involve similar construction and operational activities that would result in the emission of greenhouse gases. As with development under Option 1, construction is anticipated to last 41 months, with construction beginning in the first quarter of 2009 for development under Option 2. Table 16 identifies the amount of CO_2 emissions that is estimated to be produced during construction of development under Option 2.

Operation of development under Option 2 would also contribute to the annual tons of greenhouse gases emitted from the City of Huntington Beach. Operational emissions would primarily result from mobile sources, particularly motor vehicles traveling to and from the proposed project site. Other emissions would result from stationary sources used at the proposed project site. These could include natural gas combustion for heating and electricity consumption. Area (stationary) source emissions during operation are anticipated to result in 2,106 tons of CO_2 per year. Development under Option 2 would also result in an estimated 33,277 tons of CO_2

on an annual basis as a result of mobile emissions. Table 17 compares the annual stationary and mobile emissions of development under Option 2 to the State's (2004) annual stationary CO_2 emissions.

Table 16 Estimated CO_2 Construction Emissions, 2009–2012—Option 2

Construction Activity	*Tons CO_2 Produced*
Demolition (2009)	420.61
Mass Grading (2009 and 2010)	264.47
Trenching (2010)	313.66
Building (2010 thru 2012)	5768.15
Paving (2012)	68.29
Coating (2012)	16.04
Total CO_2 Project Construction Emissions	*6851.22*

SOURCE: URBEMIS 2007 (output data is provided in Appendix A).

Table 17 Estimated CO_2 Stationary Source (Operational) Emissions (per Year)—Option 2

Geographic Region and Emissions Source	*CO_2(tons)*
State of California (2004)	484,400,000
Proposed Project	35,383

SOURCE: PBS&J, 2008. URBEMIS 2007 (output data is provided in Appendix A); California Air Resource Boards. Inventory from 1990 to 2004. Available at: http://www.arb.ca.gov/cc/inventory/data/data.htm Accessed May 16, 2008.

Development under Option 2 would contribute less than 0.007 percent of the State's 2004 CO_2 emissions. As identified above, development under Option 2 is estimated to generate (worst-case scenario) approximately 35,383 tons of CO_2 each year.

GHG emissions generated by solid waste under Option 2 is identified in Table 18.

Table 18 Project Operational Greenhouse Gas Emissions from Solid Waste

Geographic Region and Emissions Source	*Solid Waste (tons/year)[a]*	*CH_4 CO_2e (tons)*	*CO_2(tons)*	*Total CO_2e (tons)*
State of California (2005)	38,789,018	33,618,907	2,801,576	36,420,483
City of Huntington Beach (2005)	136,195	118,160	9,831	127,991
Project	829	718	60	778

SOURCE: PBS&J, 2008. California Integrated Waste Management Board. California Waste Stream Profiles. http://www.ciwmb.ca.gov/Profiles/

[a] Landfill gas emissions = tons landfilled x.22x.77x.67.

Electricity and natural gas requirements under Option 2 would also generate GHG emissions, as identified in Tables 19 and 20, below.

Table 19 Project Operational Greenhouse Gas Emissions from Electricity Use

Geographic Region and Emissions Source	Energy Use MWh/year	N_2O (Tons)[a]	N_2O CO_2e (Tons)	CO_2 (Tons)[i]	CH_4 M (Tons)[ii]	CH_4 CO_2e (Tons)	Total CO_2e (Tons)
State of California (2005)	272,449,000	504	156,250	109,598,059	913	19,167	109,773,476
Project	9,657	0[d]	5.5	3,882.1	0[d]	0.71	3,888.31

SOURCE: PBS&J, 2008. California Energy Commission. California Energy Demand 2008-2016. November 2007.

[a] Emissions Factor of .0037 was used for N_2O.

[b] Emissions Factor of 804.54 was used for CO_2.

[c] Emissions Factor of .0067 was used for CH_4.

[d] Value is equal to or less than 0.4 tons.

Table 20 Project Operational Greenhouse Gas Emissions from Natural Gas Combustion

Geographic Region and Emissions Source	Energy Use Therms/year	N_2O (Tons)[a]	N_2O CO_2e (Tons)	CO_2 (Tons)[b]	CH_4 M (Tons)[c]	CH_4 CO_2e (Tons)	Total CO_2e (Tons)
State of California (2005)	13,039,000,000	144	44,556	75,888,858	8,480	178,080	76,111,494
Project (2030)	881,563	0[d]	0[iv]	5,113	0[d]	0[d]	5,113

SOURCE: PBS&J, 2008. California Energy Commission. California Energy Demand 2008-2016. November 2007.

[a] Data from 2004 Statewide Inventory.

[b] Same source.

[c] Calculated for each area by multiplying annual kWh per year of energy use x natural gas emissions factor.

[d] Value is equal to or less than 0.4 tons.

Additionally, as identified below (Table 21), development under Option 2 of the proposed project, as well as the City of Huntington Beach, has numerous programs and policies in place that would further reduce greenhouse gas emissions. Therefore, operation of development under Option 2 is anticipated to have a ***less-than-significant*** impact on climate change as it would introduce a negligible increase in the cumulative sphere of climate change emissions. This cumulative impact is based solely on the quantified data available for Option 2 and does not represent an accepted threshold under CEQA, as there are currently no established thresholds for greenhouse gas emissions or climate change.

Proposed Project Compliance with AB 32

Development under either Option 1 or Option 2 would comply with AB 32 through the implementation of design guidelines and other project requirements that would further reduce the proposed project's overall contribution to climate change. Under AB 32, CARB has the primary responsibility for reducing greenhouse gas emissions. However, the CAT Report contains strategies that many other California agencies can implement. The CAT published a public review draft of Proposed Early Actions to Mitigate Climate Change in California in 2007. Most of the strategies were in the 2006 CAT Report or are similar to the 2006 CAT strategies. As the 2007 report is only a draft and is not the final, this assessment will assess proposed project compliance with the 2006 CAT Report. The 2006 CAT Report strategies that apply to the proposed project are contained in Table 15 below. As shown in Table 15, the proposed project complies with all feasible and applicable measures to bring California to the emissions reduction targets. Therefore, the proposed project would be in compliance with AB 32. The following measures for compliance apply to development under Option 1 or Option 2, collectively referred to as proposed project.

Table 21 Greenhouse Gas Emissions Reduction Mitigation Measures/Design Strategies—Option 1 and Option 2

California Climate Change Greenhouse Gas Emissions Reduction Strategies	*Proposed Project Design/Mitigation Measure for Compliance*
CALIFORNIA CLIMATE ACTION TASKFORCE RECOMMENDATIONS	
Transportation-Related Emissions	
CAT Standard Vehicle Climate Change Standards: AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by the ARB in September 2004.	These are CARB enforced standards and vehicles that access the proposed project are required to comply with the standards. Therefore, the proposed project would be required to be consistent with these strategies, where applicable.
CAT Standard Other Light Duty Vehicle Technology: New standards would be adopted to phase in beginning in the 2017 model.	
CAT Standard Heavy-Duty Vehicle Emission Reduction Measures: Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	
CAT Standard Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling. Post signs that restrict idling; education for truck drivers regarding diesel health impacts.	The proposed project would limit vehicle idling time during construction to five minutes or less (see Draft EIR Mitigation Measure MM1a). The proposed project would comply with CARB's requirement of July 22, 2004 to limit emissions from idling trucks and buses. Operators of commercial trucks and buses are required to manually shut off their engines before the idling time limit of five minutes is reached. The proposed project would place signs in delivery areas instructing operators of the idling restrictions.
California Attorney General Strategy Diesel Anti-Idling: Set specific limits on idling time for commercial vehicles, including delivery vehicles.	
CAT Standard Alternative Fuels—Biodiesel Blends: CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.	Applicable only to industrial projects.
CAT Standard Alternative Fuels—Ethanol: Increased use of ethanol fuel.	These are CARB-enforced standards and vehicles that access the proposed project are required to comply with the standards. Therefore, the proposed project would be required to be consistent with these strategies, where applicable.
CALIFORNIA ATTORNEY GENERAL'S OFFICE RECOMMENDED STRATEGIES	
California Attorney General Strategy Alternative Fuels—General: The project shall include the necessary infrastructure to encourage the use of alternative fuel vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).	The proposed project will require the installation of facilities to support the use of alternative fuel vehicles, if feasible and available based on market conditions. The proposed site is located within walking distance to the Golden West Transportation center, a major transportation hub for Orange County. Residents and employees of the proposed project site would be encouraged to use mass transit when possible.

Table 21 Greenhouse Gas Emissions Reduction Mitigation Measures/Design Strategies—Option 1 and Option 2

California Climate Change Greenhouse Gas Emissions Reduction Strategies	*Proposed Project Design/Mitigation Measure for Compliance*
California Attorney General Strategy Transportation Emissions Reduction: Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights.	Where signals would be installed or modified as a result of identified mitigation, the City of Huntington Beach will install LED traffic lights where feasible.
California Attorney General Strategy Transportation Emissions Reduction: The project applicant shall promote ride sharing programs e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing, and designating adequate passenger loading and unloading and waiting areas.	Parking at the proposed project site would be designated for residents, employees, and patrons. Further, the proposed project site would be located within walking distance to an Orange County Bus Transit Center, offering mass transit access throughout the City as well as Orange County.
California Attorney General Strategy Transportation Emissions Reduction: Offer public transit discounts to residents.	The proposed project would locate residential uses within walking distance of a bus transit center which serves all of Orange County; fees associated with the use of public transit would be determined at a later time, including a potential discount for proposed project residents. It should further be noted that all of the housing units in the proposed project area would be within walking distance to transit.
California Attorney General Strategy Transportation Emissions Reduction: Design a regional transportation center where public transportation of various modes intersects.	The proposed project site would be located within walking distance to the Golden West Transportation Center, which is the City's largest transportation hub. The center contains six bus routes and would provide residents and employees a convenient alternative. In addition, the proposed project could also benefit from future commuter rail service if it is established along the existing Union Pacific Railroad line.
California Attorney General Strategy Transportation Emissions Reduction: Contribute transportation impact fees per residential and commercial unit to the City, to facilitate and increase public transit service.	The proposed project would comply with all City requirements, including all transportation impact fees that would facilitate and increase public transit service.
California Attorney General Strategy Transportation Emissions Reduction: Provide shuttle service to public transit.	Shuttle service would not be required, as the proposed project would be located within walking distance from a City and County wide bus transit center.
California Attorney General Strategy Transportation Emissions Reduction: Incorporate bicycle lanes into the project circulation system.	Proposed project Applicant(s) would comply with all regulations established by the City of Huntington Beach with regards to bicycle lane development, including section 10.84.220 of the City's municipal code, which identifies the requirement regarding the establishment of bicycle lanes and paths.
California Attorney General Strategy Transportation Emissions Reduction: Create bicycle lanes and walking paths directed to the location of schools and other logical points of destination in the project area.	The proposed project site would be located within walking distance to Golden West City College, the City's largest public college. Further, the site would be within waking distance of the Bella Terra Phase 1 site and the Golden West Transportation Center, which provides transit access to all major points of attraction within the City as well as all of Orange County.

Table 21 Greenhouse Gas Emissions Reduction Mitigation Measures/Design Strategies—Option 1 and Option 2

California Climate Change Greenhouse Gas Emissions Reduction Strategies	*Proposed Project Design/Mitigation Measure for Compliance*
California Attorney General Strategy Transportation Emissions Reduction: Provide on-site bicycle and pedestrian facilities (showers, bicycle parking, etc.) for commercial uses, to encourage employees to bicycle or walk to work.	The proposed project site would supply bike racks for residents and patrons.
California Attorney General Strategy Transportation Emissions Reduction: Provide public education and publicity about public transportation services.	The City of Huntington Beach is working to improve public transportation throughout the City. The proposed project would provide additional public transit opportunities and would therefore support this strategy. It should also be noted some residents of the development may choose to work in the retail and office components of the proposed project, and would be able to walk to work. Further, through the City's "HB Goes Green" campaign, the benefits of mass transit and ridesharing will continue to be discussed and improved upon within the City.
Solid Waste and Energy Emissions	
CAT Standard Zero Waste—High Recycling: Additional recycling beyond the State's 50 percent recycling goal. 1) Design locations for separate waste and recycling receptacles. 2) Utilize recycled components in the building design.	As the proposed project is located within the limits of the City of Huntington Beach, the proposed project would be subject to and implement the recycling/waste reduction practices/requirements of the City. It should be noted that, per the California Integrated Waste Management Board, the City of Huntington Beach has achieved a diversion rate of 65% since 2002.
California Attorney General Strategy Solid Waste Reduction Strategy: Project construction shall require reuse and recycling of construction and demolition waste.	The City will require the reuse or recycling of construction waste materials, as appropriate or feasible.
California Attorney General Strategy Solid Waste Reduction Strategy: Project shall ensure that each unit includes recycling and composting containers and convenient facilities for residents and businesses.	The City Municipal Code requires recycling in all new developments within the City.
California Attorney General Strategy Solid Waste Reduction Strategy: Project shall extend the types of recycling services offered (e.g., food and green waste recycling).	The City adopted a Source Reduction and Recycling Element (SRRE) in April of 1992. Any development within the City, including the proposed project, is subject to the plans/policies of the SRRE.
CAT Standard Water Use Efficiency: Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce greenhouse gas emissions. Use both potable and non-potable water to the maximum extent practicable; low flow appliances (i.e., toilets, dishwashers, shower heads, washing machines, etc.); automatic shut off valves for sinks in restrooms; drought resistant landscaping; Place "Save Water" signs near water faucets.	The proposed project would comply with Chapter 14.52 of the City's municipal code, which designates water efficiency policies for landscaping as well as the City's "HB Goes Green" policies and recommendations regarding water conservation practices, such as the use of native water efficient landscaping as well as reducing the amount of overspray from watering.

Table 21 Greenhouse Gas Emissions Reduction Mitigation Measures/Design Strategies—Option 1 and Option 2

California Climate Change Greenhouse Gas Emissions Reduction Strategies	*Proposed Project Design/Mitigation Measure for Compliance*
California Attorney General Strategy Water Use Efficiency: Require measures that reduce the amount of water sent to the sewer system- see examples in CCAT standard above. (Reduction in water volume sent to the sewer system means less water has to be treated and pumped to the end user, thereby saving energy.)	The proposed project would comply with requirements of Title 24 with respect to energy conservation. Further, the proposed project would comply with all policies established by the City's "HB Goes Green" campaign to reduce water waste, such as through the installation of low-flush toilets and faucet aerators to reduce overall water use.
CAT Standard Green Buildings Initiative: Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels.	The proposed project would comply with the requirements of Title 24. Further, the proposed project Applicant will use Energy Star appliances to the extent feasible in the residential and commercial components of the proposed project site.
California Attorney General Strategy Energy Efficiency and Renewable Energy Standards: Project shall comply with LEED certified green building standards.	
California Attorney General Strategy Energy Efficiency and Renewable Energy Standards: Incorporate on-site renewable energy production (through, e.g., participation in the California Energy Commission's New Solar Homes Partnership). Require project proponents to install solar panels, water reuse systems, and/or other systems to capture energy sources that would otherwise be wasted.	Although specific materials to be used on the proposed project have not yet been determined, it is assumed that the proposed project will utilize the most efficient and "green" products, where feasible.
CAT Standard Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings). Projects are required to achieve a greater reduction in combined space heating, cooling and water heating energy compared to the current Title 24 Standards.	The proposed project would comply with the requirements of Title 24. Further, the proposed project Applicant will use Energy Star appliances to the extent feasible in the residential and commercial components of the proposed project site.
CAT Standard Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	The proposed project would comply with the requirements of Title 24. Further, the proposed project Applicant will use Energy Star appliances to the extent feasible in the residential and commercial components of the proposed project site. No update has been scheduled at this time.
California Attorney General Strategy Energy Efficiency and Renewable Energy Standards: Fund and schedule energy efficiency "tune-ups" of existing buildings by checking, repairing, and readjusting heating, ventilation, air conditioning, lighting, hot water equipment, insulation and weatherization. (Improvement of energy efficiency in existing buildings could offset in part the global warming impacts of new development.)	Not applicable to the proposed project.

Table 21 Greenhouse Gas Emissions Reduction Mitigation Measures/Design Strategies—Option 1 and Option 2

California Climate Change Greenhouse Gas Emissions Reduction Strategies	*Proposed Project Design/Mitigation Measure for Compliance*
California Attorney General Strategy Lighting Efficiency Standards: Require that the project include efficient lighting. (Fluorescent lighting uses approximately 75 percent less energy than incandescent lighting to deliver the same amount of light.)	The proposed project Applicant will use Energy Star appliances to the extent feasible in the residential and commercial components of the proposed project. Further, the proposed Project Applicant will encourage residents and tenants to use energy star appliances.
California Attorney General Strategy Energy Efficiency and Renewable Energy Standards: Contribute funds for energy management services, research and development for energy efficient equipment and vehicles, and public education and publicity about energy efficiency programs and incentives.	The following Mitigation Measure is suggested to improve the energy efficiency standards. *The Applicant or its successor(s) in interest shall provide each home and business with an information packet that will contain at a minimum, the following information:* ■ *Commute Option: to inform planning project occupants of the alternative travel amenities provided, including ridesharing and public transit availability/schedules;* ■ *Maps showing plan area pedestrian and bicycle paths to community centers, shopping areas, employment areas, schools, parks, and recreation areas.*
CAT Standard Hydrofluorocarbon Reduction: 1) Ban retail sale of HFC in small cans; 2) Require that only low GWP refrigerants be used in new vehicular systems; 3) Adopt specifications for new commercial refrigeration; 4) Add refrigerant leaktightness to the pass criteria for vehicular Inspection and Maintenance programs; 5) Enforce federal ban on releasing HFCs.	This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to will comply with the measures.
CAT Standard Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification. If TRUs access the site, implement measures to reduce emissions; install electrification in applicable projects (i.e., truck stops, warehouses, etc.)	The proposed project would comply with CARB's requirement of July 22, 2004 to limit emissions from idling trucks and buses. Operators of commercial trucks and buses are required to manually shut off their engines before the idling time limit of five minutes is reached. The proposed project would place signs in delivery areas instructing operators of the idling restrictions. Further, Mitigation Measure MM2 would require the project Applicant to install electrical outlets at all loading bays to allow refrigeration systems to run without the vehicles idling.
CAT Standard Cement Manufacturing: Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.	This measure applies to the manufacturing of cement and is not applicable to the proposed project.
LAND USE MEASURES, SMART GROWTH STRATEGIES, AND CARBON OFFSETS	
CAT Standard Urban Forestry: A new statewide goal of planting 5 million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs. Trees near structures shall be planted to act as insulators from weather, thereby decreasing energy requirements. Trees also store carbon.	The proposed project is also required to comply with landscaping requirements identified in Section 232.08(B)(3) of the City's Municipal Code which requires one 36 inch box tree for every 45 lineal feet of street frontage.

Table 21 Greenhouse Gas Emissions Reduction Mitigation Measures/Design Strategies—Option 1 and Option 2

California Climate Change Greenhouse Gas Emissions Reduction Strategies	*Proposed Project Design/Mitigation Measure for Compliance*
CAT Standard Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands which were previously forested and are now covered with other vegetative types. Residential development on the Project site shall be clustered to preserve forest/woodland resources; increase density; and preserve and restore open space.	
CAT Standard Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. Governor Schwarzenegger is finalizing a comprehensive 10-year strategic growth plan with the intent of developing ways to promote, through state investments, incentives and technical assistance, land use, and technology strategies that provide for a prosperous economy, social equity, and a quality environment.	This proposed project is promoting jobs/housing proximity and high-density mixed-use residential development and would be consistent with this strategy. The proposed project would provide for access to mass transit and encourage pedestrian access to retail and commercial establishments as well as Golden West City College.
California Attorney General Strategy Smart Land Use and Intelligent Transportation Systems (ITS): Encourage mixed-use and high-density development to reduce vehicle trips, promote alternatives to vehicle travel and promote efficient delivery of services and goods. (A city or county could promote "smart" development by reducing developer fees or granting property tax credits for qualifying projects.)	This proposed project is promoting jobs/housing proximity and high-density mixed-use residential development and would be consistent with this strategy. The proposed project would provide for access to transit and encourage pedestrian access to retail and commercial establishments from the residential component. Further, the proposed project would place residential uses close to Golden West City College
California Attorney General Strategy Smart Land Use and Intelligent Transportation Systems (ITS): Impose measures to address the "urban heat island" effect by, e.g., requiring light colored and reflective roofing materials and paint; light-colored roads and parking lots; shade trees in parking lots; and shade trees on the south and west sides of new or renovated buildings.	The proposed project includes an extensive design plan that would include landscaping to provide shading of structures and sidewalks to reduce the "urban heat island" effect.
California Attorney General Strategy Smart Land Use and Intelligent Transportation Systems (ITS): Incorporate public transit into project design.	This proposed project is promoting jobs/housing proximity and high-density mixed-use residential development and would be consistent with this strategy. The proposed project is within walking distance to transit at the Golden West Transit Center, the City's largest mass transit hub.
California Attorney General Strategy Smart Land Use and Intelligent Transportation Systems (ITS): Require pedestrian-only streets and plazas within the Project Site and destinations that may be reached conveniently by public transportation, walking, or bicycling.	In addition to encouraging a mix of residential and commercial uses, one of the primary intents and design considerations of the proposed project is the promotion of pedestrian-friendly routes and uses. This would be further provided through close proximity to mass transit opportunities, Golden West City College, and the Bella Terra Phase 1 development.

Table 21 Greenhouse Gas Emissions Reduction Mitigation Measures/Design Strategies—Option 1 and Option 2

California Climate Change Greenhouse Gas Emissions Reduction Strategies	*Proposed Project Design/Mitigation Measure for Compliance*
California Attorney General Strategy Smart Land Use and Intelligent Transportation Systems (ITS): Discourage "leapfrog" development. Enact ordinances and programs to limit sprawl.	The proposed project promotes the centrifying of use such that the need for sprawl is reduced. The proposed project encourages infill development as opposed to leapfrog development.
California Attorney General Strategy Carbon Emissions Offsets: In some instances, a lead agency may find that measures that will directly reduce a project's emissions are insufficient. A lead agency may consider whether carbon offsets would be appropriate. The lead agency should ensure that any mitigation taking the form of carbon offsets is specifically identified and that such mitigation will in fact occur.	Measures not currently proposed.

SOURCE: PBS&J 2008

It should be noted that many of the emissions reduction strategies in this table relate to technologies that are evolving and will evolve, or become available, during build-out of the proposed project. Some of these measures also relate to emissions reduction strategies that must be implemented on an area-wide or regional basis. Thus, several of these measures will be implemented over time as implementation becomes practicable, and the wording of these additional measures reflects that condition.

In light of the contribution that the proposed project would make, in addition to the characteristics and design features identified for both Options as well as the identified mitigation measures, the proposed project would result in a ***less-than-significant*** impact on greenhouse gas emissions and would follow the goals and policies established by AB 32.

4.6 Reduced GPA/ZTA Alternative

Threshold	Would the project conflict with or obstruct implementation of the applicable air quality plan?

The reduced project alternative would provide new sources of regional air emissions, but would not impair implementation of the Air Quality Management Plan.

The 2007 AQMP was prepared to accommodate growth, to reduce the high levels of pollutants within the areas under the jurisdiction of SCAQMD, to return clean air to the region, and to minimize the impact on the economy. Projects that are considered to be consistent with the AQMP would not interfere with attainment, because this growth is included in the projections used to formulate the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

Projects that are consistent with the projections of employment and population forecasts identified in the Growth Management Chapter of the RCPG are considered consistent with the AQMP growth projections. In turn, projects that are consistent with City's General Plan are considered to be consistent with the Growth Management Chapter, as the General Plan forms the basis for population and employment forecasts in the RCPG. This is because the Growth Management Chapter forms the basis of the land use and transportation control portions of the AQMP.

The reduced project alternative would involve the construction of 538 residential units and 138,085 sf of commercial space, a combination of the each of the Options identified for the proposed project. The project

site is currently planned for commercial regional and residential land uses. Under the existing General Plan, a maximum of 396 residential units and 345,213 sf of commercial space could be built on the site. Therefore, population increases as a result of the proposed project would be similar to those projected by SCAG and subsequently used for the 2007 AQMP. Further, past residential projects within the City of Huntington Beach have not reached the full size allowed under the General Plan for those sites (Broeren 2008). Many of these projects have been developed to 70 percent of the total allowable size with the City not reaching its full population potential within the time frame previously anticipated. By way of example, the majority of the City's new housing growth in the last 10 years has occurred in the Holly Sea Cliff area. The total number of units built is 33 percent less than what could have been built at allowed densities. Similarly, recent developments along the coast, Waterfront Residential and Boardwalk/Mystic Point, have developed at densities that are 20 and 50 percent less than permitted, respectively (Broeren 2008). Therefore, development of the reduced project alternative would result in a less-than-significant impact with respect to conflicting with the existing AQMP.

Threshold	Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Peak construction activities associated with the reduced project alternative could generate emissions that exceed SCAQMD thresholds.

Estimated air emissions from the construction activities associated with the reduced project alternative were calculated using the URBEMIS 2007 emissions model approved by CARB. Construction activities would generally involve five stages: (1) abatement and demolition, (2) excavation and shoring, (3) trenching, (4) construction (which includes pile driving and building and parking construction) and (5) final coating along with landscaping improvements and paving activities.

The reduced project alternative would involve the demolition of the existing on-site buildings, followed by the construction of 538 residential units and 138,085 sf of commercial space. Construction is anticipated to begin in the first quarter of 2009 and is estimated to take 35 months to complete. No more than 2 acres would be disturbed at any one period of time by earth moving equipment. Because of the construction time frame and the normal day-to-day variability in construction activities, it is difficult, if not impossible to precisely quantify the daily emissions associated with each phase of the proposed construction activities. Nonetheless, Table 22 identifies daily emissions that are estimated to occur on peak construction days for the reduced project alternative. These calculations assume that appropriate dust control measures would be implemented during each phase of development as required by SCAQMD Rule 403—Fugitive Dust, and that all other appropriate mitigation, such as routine equipment maintenance, has been used.

As shown, construction-related daily emissions would exceed SCAQMD significance thresholds for NO_X during the demolition and grading phases and VOCs emitted during the architectural coating (painting) phase of the reduced project alternative. No other threshold is anticipated to be exceeded during construction.

All City requirements and mitigation measures identified for both Option 1 and Option 2 of the proposed project would apply to the reduced project alternative.

Although **MM1(b)** would require the use of low VOC paint for project coating, VOC emissions would remain above the thresholds established by the SCAQMD. Further, **MM1(a)** would reduce the amount of NO_X during vehicle idling, but not to a level below the thresholds established by the SCAQMD. Therefore, construction impacts of the proposed project would remain significant and unavoidable, similar to the proposed project.

Table 22 Estimated Peak Daily Construction Emissions in Pounds per Day

Emissions Source	Peak Day Emissions in Pounds per Day					
	VOC	NO_x	CO	SO_x	PM_{10}[a]	$PM_{2.5}$[a]
Demolition Phase (3.5 months)						
Construction Equipment	9.07	79.44	30.93	0.00	3.61	3.32
On-Road Vehicles	1.51	21.09	7.71	0.02	0.94	0.81
Fugitive Dust[a]	0.00	0.00	0.00	0.00	14.28	2.97
Worker Trips	0.08	0.16	2.64	0.00	0.02	0.01
Maximum Daily Emissions	*10.67*	*100.68*	*41.29*	*0.03*	*18.86*	*7.12*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	Yes	No	No	No	No
Site Grading (1.5 months)						
Construction Equipment	16.47	146.14	65.27	0.00	6.65	6.12
On-Road Vehicles	1.30	18.06	6.60	0.02	0.81	0.70
Fugitive Dust[a]	0.00	0.00	0.00	0.00	20.72	4.33
Worker Trips	0.12	0.22	3.70	0.00	0.03	0.02
Maximum Daily Emissions	*17.89*	*164.42*	*75.57*	*0.03*	*28.22*	*11.16*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	Yes	No	No	No	No
Trenching (3 months)						
Construction Equipment	9.01	77.04	30.27	0.00	3.73	3.43
Worker Trips	0.08	0.16	2.64	0.00	0.02	0.01
Maximum Daily Emissions	*9.01*	*77.19*	*32.92*	*0.00*	*3.75*	*3.44*
SCAQMD Threshold	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	No	No	No	No	No
Construction Phase (26.5 months)						
Construction Equipment	7.14	63.46	24.94	0.00	3.07	2.82
Vendor Trips	1.32	16.30	11.95	0.03	0.77	0.65
Worker Trips	1.58	2.98	50.32	0.06	0.43	0.23
Maximum Daily Emissions	*10.04*	*82.75*	*87.21*	*0.09*	*4.27*	*3.70*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	No	No	No	No	No	No
Paving (0.5 month)						
Construction Equipment	7.01	42.55	20.77	0.00	3.14	2.89
On-Road Vehicles	0.27	3.76	1.37	0.00	0.17	0.14
Worker Trips	0.11	0.20	3.44	0.00	0.03	0.02
Maximum Daily Emissions	*7.39*	*46.51*	*25.58*	*0.01*	*3.34*	*3.05*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0

Table 22 Estimated Peak Daily Construction Emissions in Pounds per Day

Emissions Source	Peak Day Emissions in Pounds per Day					
	VOC	NO_x	CO	SO_x	PM_{10}[a]	$PM_{2.5}$[a]
Significant Impact?	No	No	No	No	No	No
Architectural Coating (1 month)						
Architectural Coating[b]	78.97	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.07	0.12	2.17	0.00	0.02	0.01
Maximum Daily Emissions	*79.04*	*0.12*	*2.17*	*0.00*	*0.02*	*0.01*
SCAQMD Thresholds	75.0	100.0	550.0	150.0	150.0	55.0
Significant Impact?	Yes	No	No	No	No	No

SOURCE: PBS&J, 2008. Calculation sheets are provided in Appendix A.

[a] Assumes watering of the proposed project site would occur three times per day.

[b] Assumes the use of low VOC on all surfaces of Option 1.

Threshold	Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Daily operation of reduced project alternative could generate emissions that exceed SCAQMD thresholds.

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities on the project site after occupation. Stationary area source emissions would be generated by the consumption of natural gas for space and water heating devices, and the operation of landscape maintenance equipment. Mobile emissions would be generated by the motor vehicles traveling to and from the project site.

The analysis of daily operational emissions has been prepared utilizing the URBEMIS 2007 computer model recommended by the SCAQMD. Stationary operational emissions for the reduced project alternative are identified in Table 23, below.

Table 23 Project Daily Operational Emissions—Stationary Sources

Emissions Source	Emissions in Pounds per Day					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Natural gas	0.50	6.61	3.37	0.00	0.01	0.01
Landscaping	0.26	0.04	3.21	0.00	0.01	0.01
Consumer Products	27.60	—	—	—	—	—
Architectural Coatings	1.73	—	—	—	—	—
Maximum Daily Emissions	*30.09*	*6.65*	*6.58*	*0.00*	*0.02*	*0.02*
Thresholds (lb/day)	55.00	55.00	550.00	150.00	150.00	55.00
Significant Impact	No	No	No	No	No	No

SOURCE: PBS&J, 2008. Computer sheets are provided in Appendix A.

As shown, operation of reduced project alternative would not result in stationary emissions that exceed the thresholds of significance recommended by the SCAQMD, similar to the proposed project.

Area source emissions, or mobile source emissions, would also occur as a result of operation of the reduced project alternative. Table 24 identifies the emissions associated with mobile sources.

Table 24 Project Daily Operational Emissions—Mobile Sources

	Emissions in Pounds per Day					
Emissions Source	***VOC***	***NO_X***	***CO***	***SO_X***	***PM_{10}***	***PM_{25}***
Apartments	20.89	23.48	240.14	0.29	48.35	9.34
Commercial	32.93	44.74	435.50	0.55	91.67	17.68
Maximum Daily Emissions	*53.82*	*68.22*	*675.64*	*0.84*	*140.02*	*27.02*
Thresholds (lb/day)	55.00	55.00	550.00	150.00	150.00	55.00
Significant Impact	No	Yes	Yes	No	No	No

SOURCE: PBS&J, 2008. Based on Summer Outputs. Computer sheets are provided in Appendix X

Mitigation measure **MM3** identified for the proposed project, which requires power outlets to be provided in delivery areas for the project site would apply to the reduced project alternative. This would allow delivery trucks that require cooling to plug in and turn off engines and generators, reducing emissions.

As shown, mobile source emissions during operation of the reduced project alternative would generate emissions that exceed the thresholds of significance recommended by the SCAQMD for NO_X and CO. Emissions of VOC, SO_X, PM_{10} and $PM_{2.5}$ during operation of the reduced project alternative would not exceed thresholds of significance recommended by the SCAQMD. The exceedance of the SCAQMD thresholds for these two criteria pollutants is primarily due to the increase in motor vehicles traveling to and from the site, as stationary emissions would not exceed thresholds. Implementation of **MM3** would help reduce operational emissions, but not to a less-than-significant level. As no further feasible mitigation is available to reduce these emissions, this impact would remain significant and unavoidable, although less than the proposed project as the reduced project alternative would not exceed the threshold for PM_{10} and $PM_{2.5}$ emissions.

Threshold	Would the project expose sensitive receptors to substantial pollutant concentrations?

The reduced project alternative would generate increased local traffic volumes, but would not cause localized CO concentrations at nearby intersections to exceed national or state standards.

Project-generated traffic from the reduced project alternative could contribute to decreased levels of service at local intersections, resulting in longer vehicle idling times at and near study area intersections and additional vehicle emissions. These circumstances could lead to CO hot spots that may affect adjacent sensitive receptors such as schools or residences. The simplified CALINE4 screening procedure was used to predict future CO concentrations at the study area intersections that are projected to operate at LOS D or worse with buildout of the reduced project alternative, as these intersections indicated the locations of the highest potential CO concentrations due to vehicle idling. Twelve of the studied intersections are projected to operate at LOS D or worse at project buildout (identified in Table 25).

The results of these calculations are presented in Table 25 (Carbon Monoxide Concentrations at Selected Intersections) for representative receptor location at the roadway edge (0 feet), 25 feet from the intersection, and 50 feet from the intersection.

Table 25 Carbon Monoxide Concentrations at Selected Intersections in 2030

Intersection	Carbon Monoxide (CO) Concentrations in (ppm)					
	Roadway Edge (0 feet)		25 feet		50 feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Goldenwest Street and Bolsa Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Goldenwest Avenue and McFadden Avenue	5.1	3.2	5.1	3.2	5.0	3.2
Beach Boulevard and Edinger Avenue	5.1	3.3	5.1	3.2	5.1	3.2
Newland Street and Edinger Avenue	5.1	3.2	5.0	3.2	5.0	3.2
Beach Boulevard and Heil Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Gothard Street and Warner Avenue	5.1	3.2	5.1	3.2	5.0	3.2
Beach Boulevard and Warner Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Newland Street and Warner Avenue	5.1	3.2	5.1	3.2	5.0	3.2
Beach Boulevard and McFadden Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Beach Boulevard and Bolsa Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Beach Boulevard and Hazard Avenue	5.1	3.2	5.1	3.2	5.1	3.2
Magnolia Street and Edinger Avenue	5.1	3.2	5.0	3.2	5.0	3.2

SOURCE: PBS&J, 2008; Calculation sheets are provided in Appendix A.

National 1-hour standard is 35.0 parts per million. State 1-hour standard is 20.0 parts per million.
Federal 8-hour standard is 9.0 parts per million. State 8-hour standard is 9.0 parts per million.

As shown, future CO concentrations near these intersections would not exceed national or State ambient air quality standards under the reduced project alternative. Therefore, CO hotspots would not occur near this nor any other intersection within the study area in the future as a result of the reduced project alternative, and the contribution of project traffic-related CO at these intersections would be less than established thresholds. Therefore, this impact would be less than significant, similar to the proposed project.

Threshold	Would the project expose sensitive receptors to substantial pollutant concentrations?

Construction activities associated with development of the reduced project alternative would generate emissions that could result in an exceedance of localized significance thresholds for CO, NO_2, PM_{10} and $PM_{2.5}$ established by the SCAQMD, and, therefore, could expose sensitive receptors to substantial pollutant concentrations.

As described above, the emissions from construction activities for the reduced project alternative were estimated using the URBEMIS 2007 emissions model. Construction emissions related to development of the reduced project alternative are shown in Table 16. For the purpose of this analysis, all emissions shown in Table 22 are assumed to originate from the project site, such as use of diesel-powered construction equipment. The on-site project combined construction emissions were then used in a dispersion model to estimate associated concentrations at the closest off-site sensitive receptors.

As mentioned above, LSTs have been developed by the SCAQMD to determine maximum allowable concentrations of criteria air pollutants during construction of the proposed project. As stated above, LSTs have been established by the SCAQMD only for construction of projects and do not apply to emissions during operation. For projects greater than 5 acres in total area, dispersion modeling is done to determine worst-case pollutant concentration at sensitive receptors associated with construction of the project. For the reduced

project alternative, the largest single day emissions of NO_X, PM_{10}, and $PM_{2.5}$ would result in identical emissions rates when compared to similar pollutants from Option 2 of the proposed project. Although the CO emissions estimated for the reduced project alternative are less than those identified for Option 2, this pollutant was not found to exceed localized significance thresholds as established by the SCAQMD.

Therefore, the significance determination made for NO_X, PM_{10}, and $PM_{2.5}$ under Option 2 of the proposed project would also apply to the reduced project alternative. As shown in Table 4.2-9 of the EIR, localized NO_2 1-hour concentrations and PM_{10} 24-hour concentrations would not exceed SCAQMD thresholds during project construction at any of the identified sensitive receptors. However, the reduced project alternative would exceed the SCAQMD threshold for $PM_{2.5}$ emissions during project construction. Implementation of the identified City requirements and mitigation measures (identified for the proposed project) would reduce this impact, but not to a less-than-significant level. The closest sensitive receptors to the project site that would be exposed to elevated levels of $PM_{2.5}$ would be the residential uses south of the project site, as well as the Old World Village residents and the Seawind Village apartment complex located north of the project site. People at these sites could be exposed to criteria pollutant concentrations which exceed the SCAQMD's localized significance thresholds. As no further feasible mitigation is available to reduce these concentrations, this impact would be significant and unavoidable, similar to the proposed project.

Threshold	Would the project make a substantial contribution to greenhouse gas emissions?

Implementation of the reduced project alternative project would generate greenhouse gases through the construction and operation of new residential and commercial uses. Greenhouse gas emissions from the project would specifically arise from project construction and from sources associated with project operation, including direct sources such as motor vehicles, natural gas consumption, solid waste handling/treatment, and indirect sources such as electricity generation. Emissions from these sources are estimated and presented below.

Construction and operation of the reduced project alternative would contribute to greenhouse gas emissions. However, due to the type and size of the alternative, in addition to design features and greenhouse gas emission reduction measures incorporated into the alternative, this cumulative impact would be considered less than significant. Construction of the reduced project alternative is estimated to last approximately 41 months. During that time, demolition, grading, and building construction would occur. Construction of the reduced project alternative would result in greenhouse gas emissions, particularly CO_2. Table 26 identifies the amount of CO_2 that is estimated to be produced during construction.

Table 26 Estimated CO_2 Construction Emissions, 2009–2012

Construction Activity	*Tons CO_2 Produced*
Demolition (2009)	420.61
Mass Grading (2009 and 2010)	264.47
Trenching (2010)	268.85
Building (2010 thru 2012)	3,980.54
Paving (2012)	27.39
Coating (2012)	35.25
Total CO_2 Project Construction Emissions	*4,997.11*

SOURCE: URBEMIS 2007 (output data is provided in Appendix A)

Operation of the reduced project alternative would also contribute to the annual tons of greenhouse gases emitted from the City of Huntington Beach. Operational emissions would primarily result from mobile sources, particularly motor vehicles traveling to and from the site. Other emissions would result from stationary sources used at the project site. These could include natural gas combustion for heating and electricity consumption.

Area (stationary) source emissions during operation are anticipated to result in 1,522 tons of CO_2 per year. The reduced project alternative would also result in an estimated 14,565 tons of CO_2 on an annual basis as a result of mobile emissions. Table 27 compares the CO_2 estimated to be emitted through stationary and mobile sources from the reduced project alternative to the total tons of CO_2 emitted by the State of California in 2004.

Table 27 Estimated CO_2 Operational Emissions (per Year)

Geographic Region and Emissions Source	*CO_2(tons)*
State of California (2004)	484,400,000
Project	16,087

SOURCE: PBS&J, 2008. URBEMIS 2007 (output data is provided in Appendix A); California Air Resource Boards. Inventory from 1990 to 2004. Available at: http://www.arb.ca.gov/cc/inventory/data/data.htm Accessed May 16, 2008.

The reduced project alternative would contribute less than 0.003 percent of the State's 2004 CO_2 emissions. As identified above, the alternative is estimated to generate (worst-case scenario) approximately 16,087 tons of CO_2 each year. The reduced project alternative would also comply with the rules and policies outlined in Table 4.2-15 of the EIR. Therefore, operation of the reduced project alternative is anticipated to have a less-than-significant impact on climate change as it would introduce a negligible increase in the cumulative sphere of climate change emissions, similar to the proposed project.

4.7 References

Austin-Foust Associates, Inc. 2008. Bella Terra Traffic Study. April.

Austin, Terry. 2008. Personal communication with Austin-Foust Associates (Traffic Consultant), April 30.

Broeren, Mary Beth. 2008. City of Huntington Beach Planning Department. Phone Conversation, May 12.

California Environmental Protection Agency (California EPA). n.d. AB 1493 (Pavley) Briefing Package Global Warming and Greenhouse Gas Emissions from Motor Vehicles.

———. Climate Action Team. 2006. Climate Action Team Report to Governor Schwarzenegger and the California Legislature, March.

California Air Resource Board (CARB). 2007. Area Designations (Activities and Maps). July 26. Available at www.arb.ca.gov/desig.htm. Accessed April 10, 2008.

———. Fact Sheet: Climate Change Emission Control Regulations, December 10, 2004.

California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA and Climate Change—Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. January 2008.

California Energy Commission (CEC). 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Staff Final Report, December.

Huntington Beach, City of. 1996. *General Plan.* Prepared by Envicom Corporation, 13 May.

Intergovernmental Panel on Climate Change (IPCC). 2006. IPCC Guidelines for National Greenhouse Gas Inventories. Chapter 3, Solid Waste Disposal.

———. 2007. Climate Change 2007: The Physical Science Basis, Summary for Policymakers.

Ontario, City of. 2007. Rich Haven Specific Plan EIR, Global Climate Change Analysis, June 28.

South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*.

———. 2007. *2007 Air Quality Management Plan*.

Western Regional Climate Center. n.d. Available at http://www.wrcc.dri.edu (accessed April 20, 2008).

Appendix A Air Quality Modeling Data

*** ISCST3 - VERSION 02035 ***
*** LA Project - Bella Terra Phase II - NOx LSTw/ 3 Sensitive Receptors ***
*** Model Executed on 05/07/08 at 09:43:07 ***
Input File - C:\Documents and Settings\13213\My Documents\ProjDocs\California Projects 2008\LA Project May 2008\ISC Modeling May 2008\LA Project-Bella Terra Ph 2 NOx LST 20080507_1981_NO2.DTA
Output File - C:\Documents and Settings\13213\My Documents\ProjDocs\California Projects 2008\LA Project May 2008\ISC Modeling May 2008\LA Project-Bella Terra Ph 2 NOx LST 20080507_1981_NO2.LST
Met File - C:\Documents and Settings\13213\My Documents\MetDataCA1981\COSMESA.ASC

Number of sources - 100
Number of source groups - 1
Number of receptors - 307

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S1	0	0.25900E-01	10.0	10.0	0.0	5.00	9.30	1.16	HROFDY
S2	0	0.25900E-01	10.0	30.0	0.0	5.00	9.30	1.16	HROFDY
S3	0	0.25900E-01	10.0	50.0	0.0	5.00	9.30	1.16	HROFDY
S4	0	0.25900E-01	10.0	70.0	0.0	5.00	9.30	1.16	HROFDY
S5	0	0.25900E-01	10.0	90.0	0.0	5.00	9.30	1.16	HROFDY
S6	0	0.25900E-01	10.0	110.0	0.0	5.00	9.30	1.16	HROFDY
S7	0	0.25900E-01	10.0	130.0	0.0	5.00	9.30	1.16	HROFDY
S8	0	0.25900E-01	10.0	150.0	0.0	5.00	9.30	1.16	HROFDY
S9	0	0.25900E-01	10.0	170.0	0.0	5.00	9.30	1.16	HROFDY
S10	0	0.25900E-01	10.0	190.0	0.0	5.00	9.30	1.16	HROFDY
S11	0	0.25900E-01	10.0	210.0	0.0	5.00	9.30	1.16	HROFDY
S12	0	0.25900E-01	10.0	230.0	0.0	5.00	9.30	1.16	HROFDY
S13	0	0.25900E-01	10.0	250.0	0.0	5.00	9.30	1.16	HROFDY
S14	0	0.25900E-01	10.0	270.0	0.0	5.00	9.30	1.16	HROFDY
S15	0	0.25900E-01	10.0	290.0	0.0	5.00	9.30	1.16	HROFDY
S16	0	0.25900E-01	30.0	10.0	0.0	5.00	9.30	1.16	HROFDY
S17	0	0.25900E-01	30.0	30.0	0.0	5.00	9.30	1.16	HROFDY
S18	0	0.25900E-01	30.0	50.0	0.0	5.00	9.30	1.16	HROFDY
S19	0	0.25900E-01	30.0	70.0	0.0	5.00	9.30	1.16	HROFDY
S20	0	0.25900E-01	30.0	90.0	0.0	5.00	9.30	1.16	HROFDY
S21	0	0.25900E-01	30.0	110.0	0.0	5.00	9.30	1.16	HROFDY

S22	0	0.25900E-01	30.0	130.0	0.0	5.00	9.30	1.16	HROFDY
S23	0	0.25900E-01	30.0	150.0	0.0	5.00	9.30	1.16	HROFDY
S24	0	0.25900E-01	30.0	170.0	0.0	5.00	9.30	1.16	HROFDY
S25	0	0.25900E-01	30.0	190.0	0.0	5.00	9.30	1.16	HROFDY
S26	0	0.25900E-01	30.0	210.0	0.0	5.00	9.30	1.16	HROFDY
S27	0	0.25900E-01	30.0	230.0	0.0	5.00	9.30	1.16	HROFDY
S28	0	0.25900E-01	30.0	250.0	0.0	5.00	9.30	1.16	HROFDY
S29	0	0.25900E-01	30.0	270.0	0.0	5.00	9.30	1.16	HROFDY
S30	0	0.25900E-01	30.0	290.0	0.0	5.00	9.30	1.16	HROFDY
S31	0	0.25900E-01	50.0	10.0	0.0	5.00	9.30	1.16	HROFDY
S32	0	0.25900E-01	50.0	30.0	0.0	5.00	9.30	1.16	HROFDY
S33	0	0.25900E-01	50.0	50.0	0.0	5.00	9.30	1.16	HROFDY
S34	0	0.25900E-01	50.0	70.0	0.0	5.00	9.30	1.16	HROFDY
S35	0	0.25900E-01	50.0	90.0	0.0	5.00	9.30	1.16	HROFDY
S36	0	0.25900E-01	50.0	110.0	0.0	5.00	9.30	1.16	HROFDY
S37	0	0.25900E-01	50.0	130.0	0.0	5.00	9.30	1.16	HROFDY
S38	0	0.25900E-01	50.0	150.0	0.0	5.00	9.30	1.16	HROFDY
S39	0	0.25900E-01	50.0	170.0	0.0	5.00	9.30	1.16	HROFDY
S40	0	0.25900E-01	50.0	190.0	0.0	5.00	9.30	1.16	HROFDY

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S41	0	0.25900E-01	50.0	210.0	0.0	5.00	9.30	1.16	HROFDY
S42	0	0.25900E-01	50.0	230.0	0.0	5.00	9.30	1.16	HROFDY
S43	0	0.25900E-01	50.0	250.0	0.0	5.00	9.30	1.16	HROFDY
S44	0	0.25900E-01	50.0	270.0	0.0	5.00	9.30	1.16	HROFDY
S45	0	0.25900E-01	50.0	290.0	0.0	5.00	9.30	1.16	HROFDY
S46	0	0.25900E-01	70.0	10.0	0.0	5.00	9.30	1.16	HROFDY
S47	0	0.25900E-01	70.0	30.0	0.0	5.00	9.30	1.16	HROFDY
S48	0	0.25900E-01	70.0	50.0	0.0	5.00	9.30	1.16	HROFDY
S49	0	0.25900E-01	70.0	70.0	0.0	5.00	9.30	1.16	HROFDY
S50	0	0.25900E-01	70.0	90.0	0.0	5.00	9.30	1.16	HROFDY
S51	0	0.25900E-01	70.0	110.0	0.0	5.00	9.30	1.16	HROFDY
S52	0	0.25900E-01	70.0	130.0	0.0	5.00	9.30	1.16	HROFDY
S53	0	0.25900E-01	70.0	150.0	0.0	5.00	9.30	1.16	HROFDY
S54	0	0.25900E-01	70.0	170.0	0.0	5.00	9.30	1.16	HROFDY
S55	0	0.25900E-01	70.0	190.0	0.0	5.00	9.30	1.16	HROFDY

S56	0	0.25900E-01	70.0	210.0	0.0	5.00	9.30	1.16	HROFDY
S57	0	0.25900E-01	70.0	230.0	0.0	5.00	9.30	1.16	HROFDY
S58	0	0.25900E-01	70.0	250.0	0.0	5.00	9.30	1.16	HROFDY
S59	0	0.25900E-01	70.0	270.0	0.0	5.00	9.30	1.16	HROFDY
S60	0	0.25900E-01	70.0	290.0	0.0	5.00	9.30	1.16	HROFDY
S61	0	0.25900E-01	90.0	10.0	0.0	5.00	9.30	1.16	HROFDY
S62	0	0.25900E-01	90.0	30.0	0.0	5.00	9.30	1.16	HROFDY
S63	0	0.25900E-01	90.0	50.0	0.0	5.00	9.30	1.16	HROFDY
S64	0	0.25900E-01	90.0	70.0	0.0	5.00	9.30	1.16	HROFDY
S65	0	0.25900E-01	90.0	90.0	0.0	5.00	9.30	1.16	HROFDY
S66	0	0.25900E-01	90.0	110.0	0.0	5.00	9.30	1.16	HROFDY
S67	0	0.25900E-01	90.0	130.0	0.0	5.00	9.30	1.16	HROFDY
S68	0	0.25900E-01	90.0	150.0	0.0	5.00	9.30	1.16	HROFDY
S69	0	0.25900E-01	90.0	170.0	0.0	5.00	9.30	1.16	HROFDY
S70	0	0.25900E-01	90.0	190.0	0.0	5.00	9.30	1.16	HROFDY
S71	0	0.25900E-01	90.0	210.0	0.0	5.00	9.30	1.16	HROFDY
S72	0	0.25900E-01	90.0	230.0	0.0	5.00	9.30	1.16	HROFDY
S73	0	0.25900E-01	90.0	250.0	0.0	5.00	9.30	1.16	HROFDY
S74	0	0.25900E-01	90.0	270.0	0.0	5.00	9.30	1.16	HROFDY
S75	0	0.25900E-01	90.0	290.0	0.0	5.00	9.30	1.16	HROFDY
S76	0	0.25900E-01	110.0	10.0	0.0	5.00	9.30	1.16	HROFDY
S77	0	0.25900E-01	110.0	30.0	0.0	5.00	9.30	1.16	HROFDY
S78	0	0.25900E-01	110.0	50.0	0.0	5.00	9.30	1.16	HROFDY
S79	0	0.25900E-01	110.0	70.0	0.0	5.00	9.30	1.16	HROFDY
S80	0	0.25900E-01	110.0	90.0	0.0	5.00	9.30	1.16	HROFDY

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S81	0	0.25900E-01	110.0	110.0	0.0	5.00	9.30	1.16	HROFDY
S82	0	0.25900E-01	110.0	130.0	0.0	5.00	9.30	1.16	HROFDY
S83	0	0.25900E-01	110.0	150.0	0.0	5.00	9.30	1.16	HROFDY
S84	0	0.25900E-01	110.0	170.0	0.0	5.00	9.30	1.16	HROFDY
S85	0	0.25900E-01	110.0	190.0	0.0	5.00	9.30	1.16	HROFDY
S86	0	0.25900E-01	110.0	210.0	0.0	5.00	9.30	1.16	HROFDY
S87	0	0.25900E-01	110.0	230.0	0.0	5.00	9.30	1.16	HROFDY
S88	0	0.25900E-01	110.0	250.0	0.0	5.00	9.30	1.16	HROFDY
S89	0	0.25900E-01	110.0	270.0	0.0	5.00	9.30	1.16	HROFDY

S90	0	0.25900E-01	110.0	290.0	0.0	5.00	9.30	1.16	HROFDY
S91	0	0.25900E-01	130.0	110.0	0.0	5.00	9.30	1.16	HROFDY
S92	0	0.25900E-01	130.0	130.0	0.0	5.00	9.30	1.16	HROFDY
S93	0	0.25900E-01	130.0	150.0	0.0	5.00	9.30	1.16	HROFDY
S94	0	0.25900E-01	130.0	170.0	0.0	5.00	9.30	1.16	HROFDY
S95	0	0.25900E-01	130.0	190.0	0.0	5.00	9.30	1.16	HROFDY
S96	0	0.25900E-01	150.0	110.0	0.0	5.00	9.30	1.16	HROFDY
S97	0	0.25900E-01	150.0	130.0	0.0	5.00	9.30	1.16	HROFDY
S98	0	0.25900E-01	150.0	150.0	0.0	5.00	9.30	1.16	HROFDY
S99	0	0.25900E-01	150.0	170.0	0.0	5.00	9.30	1.16	HROFDY
S100	0	0.25900E-01	150.0	190.0	0.0	5.00	9.30	1.16	HROFDY

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
ALL	S1 , S2 , S3 , S4 , S5 , S6 , S7 , S8 , S9 , S10 , S11 , S12 ,
	S13 , S14 , S15 , S16 , S17 , S18 , S19 , S20 , S21 , S22 , S23 , S24 ,
	S25 , S26 , S27 , S28 , S29 , S30 , S31 , S32 , S33 , S34 , S35 , S36 ,
	S37 , S38 , S39 , S40 , S41 , S42 , S43 , S44 , S45 , S46 , S47 , S48 ,
	S49 , S50 , S51 , S52 , S53 , S54 , S55 , S56 , S57 , S58 , S59 , S60 ,
	S61 , S62 , S63 , S64 , S65 , S66 , S67 , S68 , S69 , S70 , S71 , S72 ,
	S73 , S74 , S75 , S76 , S77 , S78 , S79 , S80 , S81 , S82 , S83 , S84 ,
	S85 , S86 , S87 , S88 , S89 , S90 , S91 , S92 , S93 , S94 , S95 , S96 ,
	S97 , S98 , S99 , S100 ,

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF NO2 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH 1ST HIGH VALUE IS 1309.78931	ON 81011708:	AT (75.00, -25.00, 2.00, 2.00)	DC	NA

*** ISCST3 - VERSION 02035 ***
*** LA Project - Bella Terra Phase II - PM10 AND PM2.5 LST ***
*** Model Executed on 05/07/08 at 09:59:22 ***
Input File - C:\Documents and Settings\13213\My Documents\ProjDocs\California Projects 2008\LA Project May 2008\ISC Modeling May 2008\LA Project-Bella Terra Ph 2 PM10 & PM2.5 LST 20080507_1981_PM2.5.DTA
Output File - C:\Documents and Settings\13213\My Documents\ProjDocs\California Projects 2008\LA Project May 2008\ISC Modeling May 2008\LA Project-Bella Terra Ph 2 PM10 & PM2.5 LST 20080507_1981_PM2.5.LST
Met File - C:\Documents and Settings\13213\My Documents\MetDataCA1981\COSMESA.ASC

Number of sources - 100
Number of source groups - 1
Number of receptors - 310

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S1	0	0.44000E-05	0.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S2	0	0.44000E-05	0.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S3	0	0.44000E-05	0.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S4	0	0.44000E-05	0.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S5	0	0.44000E-05	0.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S6	0	0.44000E-05	0.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S7	0	0.44000E-05	0.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S8	0	0.44000E-05	0.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S9	0	0.44000E-05	0.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S10	0	0.44000E-05	0.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S11	0	0.44000E-05	0.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S12	0	0.44000E-05	0.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S13	0	0.44000E-05	0.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S14	0	0.44000E-05	0.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S15	0	0.17600E-04	0.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S16	0	0.44000E-05	20.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S17	0	0.44000E-05	20.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S18	0	0.44000E-05	20.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S19	0	0.44000E-05	20.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S20	0	0.44000E-05	20.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S21	0	0.44000E-05	20.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

S22	0	0.44000E-05	20.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S23	0	0.44000E-05	20.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S24	0	0.44000E-05	20.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S25	0	0.44000E-05	20.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S26	0	0.44000E-05	20.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S27	0	0.44000E-05	20.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S28	0	0.44000E-05	20.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S29	0	0.44000E-05	20.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S30	0	0.17600E-04	20.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S31	0	0.44000E-05	40.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S32	0	0.44000E-05	40.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S33	0	0.44000E-05	40.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S34	0	0.44000E-05	40.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S35	0	0.44000E-05	40.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S36	0	0.44000E-05	40.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S37	0	0.44000E-05	40.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S38	0	0.44000E-05	40.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S39	0	0.44000E-05	40.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S40	0	0.44000E-05	40.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S41	0	0.44000E-05	40.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S42	0	0.44000E-05	40.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S43	0	0.44000E-05	40.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S44	0	0.44000E-05	40.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S45	0	0.17600E-04	40.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S46	0	0.44000E-05	60.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S47	0	0.44000E-05	60.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S48	0	0.44000E-05	60.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S49	0	0.44000E-05	60.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S50	0	0.44000E-05	60.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S51	0	0.44000E-05	60.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S52	0	0.44000E-05	60.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S53	0	0.44000E-05	60.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S54	0	0.44000E-05	60.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S55	0	0.44000E-05	60.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

S56	0	0.44000E-05	60.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S57	0	0.44000E-05	60.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S58	0	0.44000E-05	60.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S59	0	0.44000E-05	60.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S60	0	0.17600E-04	60.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S61	0	0.44000E-05	80.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S62	0	0.44000E-05	80.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S63	0	0.44000E-05	80.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S64	0	0.44000E-05	80.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S65	0	0.44000E-05	80.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S66	0	0.44000E-05	80.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S67	0	0.44000E-05	80.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S68	0	0.44000E-05	80.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S69	0	0.44000E-05	80.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S70	0	0.44000E-05	80.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S71	0	0.44000E-05	80.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S72	0	0.44000E-05	80.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S73	0	0.44000E-05	80.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S74	0	0.44000E-05	80.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S75	0	0.17600E-04	80.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S76	0	0.44000E-05	100.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S77	0	0.44000E-05	100.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S78	0	0.44000E-05	100.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S79	0	0.44000E-05	100.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S80	0	0.44000E-05	100.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S81	0	0.44000E-05	100.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S82	0	0.44000E-05	100.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S83	0	0.44000E-05	100.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S84	0	0.44000E-05	100.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S85	0	0.44000E-05	100.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S86	0	0.44000E-05	100.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S87	0	0.44000E-05	100.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S88	0	0.44000E-05	100.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S89	0	0.44000E-05	100.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

S90	0	0.17600E-04	100.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S91	0	0.44000E-05	120.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S92	0	0.44000E-05	120.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S93	0	0.44000E-05	120.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S94	0	0.44000E-05	120.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S95	0	0.44000E-05	120.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S96	0	0.44000E-05	140.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S97	0	0.44000E-05	140.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S98	0	0.44000E-05	140.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S99	0	0.44000E-05	140.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S100	0	0.44000E-05	140.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL S1 , S2 , S3 , S4 , S5 , S6 , S7 , S8 , S9 , S10 , S11 , S12 ,
S13 , S14 , S15 , S16 , S17 , S18 , S19 , S20 , S21 , S22 , S23 , S24 ,
S25 , S26 , S27 , S28 , S29 , S30 , S31 , S32 , S33 , S34 , S35 , S36 ,
S37 , S38 , S39 , S40 , S41 , S42 , S43 , S44 , S45 , S46 , S47 , S48 ,
S49 , S50 , S51 , S52 , S53 , S54 , S55 , S56 , S57 , S58 , S59 , S60 ,
S61 , S62 , S63 , S64 , S65 , S66 , S67 , S68 , S69 , S70 , S71 , S72 ,
S73 , S74 , S75 , S76 , S77 , S78 , S79 , S80 , S81 , S82 , S83 , S84 ,
S85 , S86 , S87 , S88 , S89 , S90 , S91 , S92 , S93 , S94 , S95 , S96 ,
S97 , S98 , S99 , S100 ,

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM2.5 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH 1ST HIGH VALUE IS 22.95663	ON 81122524:	AT (24.00, 285.00, 2.00, 2.00)	DC	NA

*** ISCST3 - VERSION 02035 ***
*** LA Project - Bella Terra Phase II - PM10 AND PM2.5 LST ***
*** Model Executed on 05/07/08 at 09:46:45 ***
Input File - C:\Documents and Settings\13213\My Documents\ProjDocs\California Projects 2008\LA Project May 2008\ISC Modeling May 2008\LA Project-Bella Terra Ph 2 PM10 & PM2.5 LST 20080507_1981_PM.DTA
Output File - C:\Documents and Settings\13213\My Documents\ProjDocs\California Projects 2008\LA Project May 2008\ISC Modeling May 2008\LA Project-Bella Terra Ph 2 PM10 & PM2.5 LST 20080507_1981_PM.LST
Met File - C:\Documents and Settings\13213\My Documents\MetDataCA1981\COSMESA.ASC

Number of sources - 100
Number of source groups - 1
Number of receptors - 310

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S1	0	0.11100E-04	0.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S2	0	0.11100E-04	0.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S3	0	0.11100E-04	0.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S4	0	0.11100E-04	0.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S5	0	0.11100E-04	0.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S6	0	0.11100E-04	0.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S7	0	0.11100E-04	0.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S8	0	0.11100E-04	0.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S9	0	0.11100E-04	0.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S10	0	0.11100E-04	0.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S11	0	0.11100E-04	0.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S12	0	0.11100E-04	0.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S13	0	0.11100E-04	0.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S14	0	0.11100E-04	0.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S15	0	0.44400E-04	0.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S16	0	0.11100E-04	20.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S17	0	0.11100E-04	20.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S18	0	0.11100E-04	20.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S19	0	0.11100E-04	20.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S20	0	0.11100E-04	20.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S21	0	0.11100E-04	20.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

S22	0	0.11100E-04	20.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S23	0	0.11100E-04	20.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S24	0	0.11100E-04	20.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S25	0	0.11100E-04	20.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S26	0	0.11100E-04	20.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S27	0	0.11100E-04	20.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S28	0	0.11100E-04	20.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S29	0	0.11100E-04	20.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S30	0	0.44400E-04	20.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S31	0	0.11100E-04	40.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S32	0	0.11100E-04	40.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S33	0	0.11100E-04	40.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S34	0	0.11100E-04	40.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S35	0	0.11100E-04	40.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S36	0	0.11100E-04	40.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S37	0	0.11100E-04	40.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S38	0	0.11100E-04	40.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S39	0	0.11100E-04	40.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S40	0	0.11100E-04	40.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S41	0	0.11100E-04	40.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S42	0	0.11100E-04	40.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S43	0	0.11100E-04	40.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S44	0	0.11100E-04	40.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S45	0	0.44400E-04	40.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S46	0	0.11100E-04	60.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S47	0	0.11100E-04	60.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S48	0	0.11100E-04	60.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S49	0	0.11100E-04	60.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S50	0	0.11100E-04	60.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S51	0	0.11100E-04	60.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S52	0	0.11100E-04	60.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S53	0	0.11100E-04	60.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S54	0	0.11100E-04	60.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S55	0	0.11100E-04	60.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

S56	0	0.11100E-04	60.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S57	0	0.11100E-04	60.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S58	0	0.11100E-04	60.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S59	0	0.11100E-04	60.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S60	0	0.44400E-04	60.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S61	0	0.11100E-04	80.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S62	0	0.11100E-04	80.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S63	0	0.11100E-04	80.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S64	0	0.11100E-04	80.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S65	0	0.11100E-04	80.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S66	0	0.11100E-04	80.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S67	0	0.11100E-04	80.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S68	0	0.11100E-04	80.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S69	0	0.11100E-04	80.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S70	0	0.11100E-04	80.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S71	0	0.11100E-04	80.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S72	0	0.11100E-04	80.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S73	0	0.11100E-04	80.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S74	0	0.11100E-04	80.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S75	0	0.44400E-04	80.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S76	0	0.11100E-04	100.0	0.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S77	0	0.11100E-04	100.0	20.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S78	0	0.11100E-04	100.0	40.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S79	0	0.11100E-04	100.0	60.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S80	0	0.11100E-04	100.0	80.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. OF AREA (DEG.)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
S81	0	0.11100E-04	100.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S82	0	0.11100E-04	100.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S83	0	0.11100E-04	100.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S84	0	0.11100E-04	100.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S85	0	0.11100E-04	100.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S86	0	0.11100E-04	100.0	200.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S87	0	0.11100E-04	100.0	220.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S88	0	0.11100E-04	100.0	240.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S89	0	0.11100E-04	100.0	260.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

S90	0	0.44400E-04	100.0	280.0	0.0	1.00	20.00	5.00	0.00	1.00	HROFDY
S91	0	0.11100E-04	120.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S92	0	0.11100E-04	120.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S93	0	0.11100E-04	120.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S94	0	0.11100E-04	120.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S95	0	0.11100E-04	120.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S96	0	0.11100E-04	140.0	100.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S97	0	0.11100E-04	140.0	120.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S98	0	0.11100E-04	140.0	140.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S99	0	0.11100E-04	140.0	160.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY
S100	0	0.11100E-04	140.0	180.0	0.0	1.00	20.00	20.00	0.00	1.00	HROFDY

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID SOURCE IDs

ALL S1 , S2 , S3 , S4 , S5 , S6 , S7 , S8 , S9 , S10 , S11 , S12 ,
S13 , S14 , S15 , S16 , S17 , S18 , S19 , S20 , S21 , S22 , S23 , S24 ,
S25 , S26 , S27 , S28 , S29 , S30 , S31 , S32 , S33 , S34 , S35 , S36 ,
S37 , S38 , S39 , S40 , S41 , S42 , S43 , S44 , S45 , S46 , S47 , S48 ,
S49 , S50 , S51 , S52 , S53 , S54 , S55 , S56 , S57 , S58 , S59 , S60 ,
S61 , S62 , S63 , S64 , S65 , S66 , S67 , S68 , S69 , S70 , S71 , S72 ,
S73 , S74 , S75 , S76 , S77 , S78 , S79 , S80 , S81 , S82 , S83 , S84 ,
S85 , S86 , S87 , S88 , S89 , S90 , S91 , S92 , S93 , S94 , S95 , S96 ,
S97 , S98 , S99 , S100 ,

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH 1ST HIGH VALUE IS 57.91331	ON 81122524:	AT (24.00, 285.00, 2.00, 2.00)	DC	NA

-PRELIMINARY-
LA Bella Terra Modeling Summary

Air Contaminant	Averaging Period	AAQS ppm	Average Ambient Monitored (2004 - 2006) ppm	LST ppm	LST µg/m3	At Property-Line Max Modeled µg/m3	At Property-Line Max Modeled ppm	At Property-Line LST Exceeded?	Sensitive Receptors 760 ft - Residential µg/m3	760 ft - Residential ppm	760 ft - Residential LST Exceeded?	945 ft - College µg/m3	945 ft - College ppm	945 ft - College LST Exceeded?	550 ft - Apartments µg/m3	550 ft - Apartments ppm	550 ft - Apartments LST Exceeded?
CO	1-hr	20	5.0	15	17477	864.8	0.74	NO	353	0.30	NO	207	0.18	NO	429	0.37	NO
CO	8-hr	9	3.4	6	6509	257.7	0.22	NO	47	0.04	NO	34	0.03	NO	61	0.05	NO
PM10	24-hr		81	--	10.4	57.9	--	**YES**	8.7	--	NO	5.3	--	NO	8.2	--	NO
PM2.5	24-hr		54.5	--	2.5	23.0	--	**YES**	**3.4**	--	**YES**	2.1	--	NO	**3.2**	--	**YES**

For NO2 - Adjust for NO2/NOx Ratio based on Table 2-4 of "Final Localized Significance Threshold Methodology"

Receptor Location	Averaging Period	AAQS ppm	Average Ambient Monitored (2004 - 2006) ppm	LST ppm	LST µg/m3	Max Modeled NOx µg/m3	NO2/NOx Ratio	Adjusted NO2 µg/m3	Adjusted NO2 ppm	LST Exceeded?
Property-Line	1-hr	0.25	0.094	0.156	298	1310	0.05	65.5	0.034	NO
760 ft - Residential	1-hr	0.25	0.094	0.156	298	534	0.129	68.9	0.036	NO
945 ft - College	1-hr	0.25	0.094	0.156	298	314	0.156	49.0	0.026	NO
550 ft Apartments	1-hr	0.25	0.094	0.156	298	650	0.101	65.7	0.034	NO

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

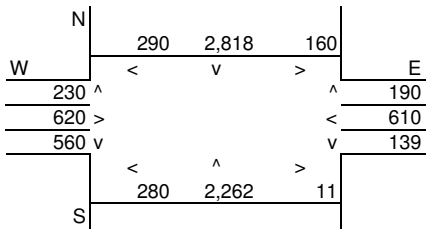
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

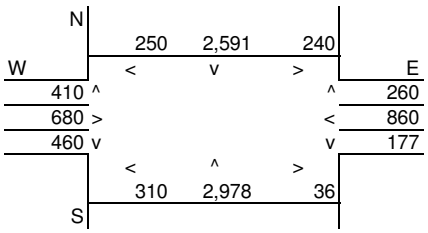
Intersection: Beach Boulevard and Bolsa Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Bolsa Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	6,070	N-S Road:	6,729
E-W Road:	2,590	E-W Road:	2,970

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,070	0.19	0.10	0.06	0.05	0.04
East-West Road	2.8	2.3	2.0	1.7	2,590	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,729	0.19	0.11	0.07	0.06	0.04
East-West Road	2.8	2.3	2.0	1.7	2,970	0.19	0.02	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

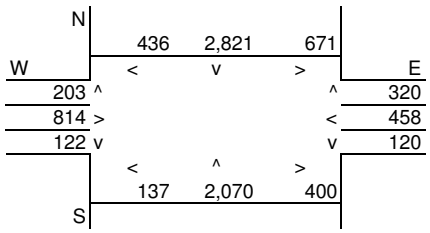
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

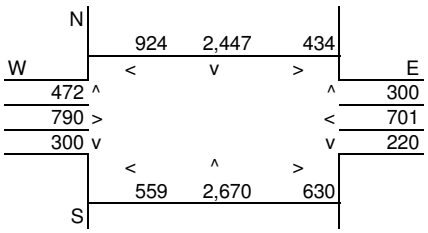
Intersection: Beach Boulevard and Edinger Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	6,521	N-S Road:	7,247
E-W Road:	2,783	E-W Road:	3,746

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,521	0.19	0.10	0.07	0.06	0.04
East-West Road	2.8	2.3	2.0	1.7	2,783	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	7,247	0.19	0.11	0.08	0.06	0.05
East-West Road	2.8	2.3	2.0	1.7	3,746	0.19	0.02	0.02	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.3
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

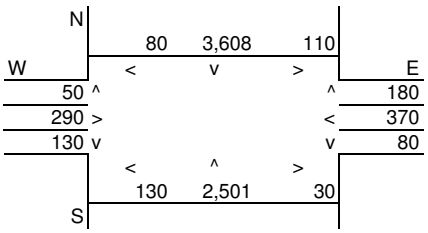
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

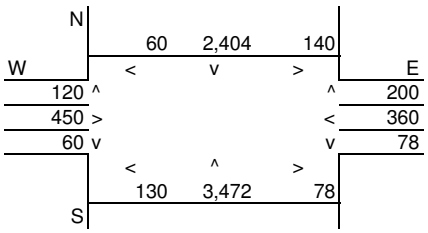
Intersection: Beach Boulevard and Hazard Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Hazard Avenue	At Grade	6	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	6,529	N-S Road:	6,396
E-W Road:	1,060	E-W Road:	1,306

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,529	0.19	0.10	0.07	0.06	0.04
East-West Road	2.8	2.3	2.0	1.7	1,060	0.19	0.01	0.00	0.00	0.00
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,396	0.19	0.10	0.07	0.05	0.04
East-West Road	2.8	2.3	2.0	1.7	1,306	0.19	0.01	0.01	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

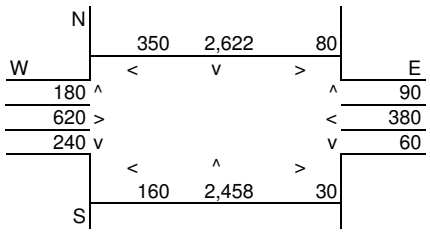
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

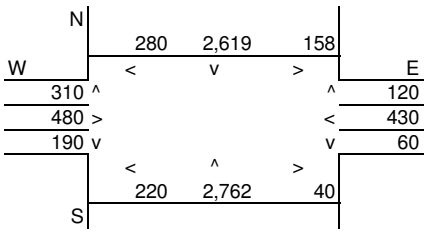
Intersection: Beach Boulevard at Heil
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Heil Avenue	At Grade	4	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,780	N-S Road:	6,249
E-W Road:	1,930	E-W Road:	1,910

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,780	0.19	0.09	0.06	0.05	0.04
East-West Road	3.3	2.6	2.2	1.7	1,930	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,249	0.19	0.10	0.07	0.05	0.04
East-West Road	3.3	2.6	2.2	1.7	1,910	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

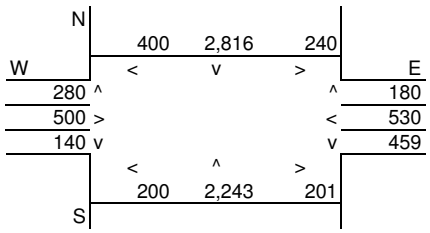
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

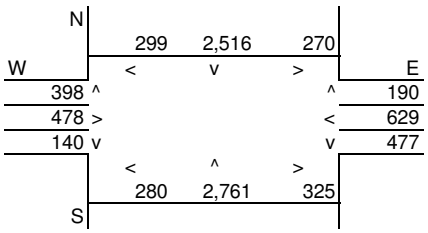
Intersection: Beach Boulevard and McFadden Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	McFadden Avenue	At Grade	4	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	6,159	N-S Road:	6,499
E-W Road:	2,110	E-W Road:	2,369

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,159	0.19	0.10	0.07	0.05	0.04
East-West Road	3.3	2.6	2.2	1.7	2,110	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,499	0.19	0.10	0.07	0.06	0.04
East-West Road	3.3	2.6	2.2	1.7	2,369	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

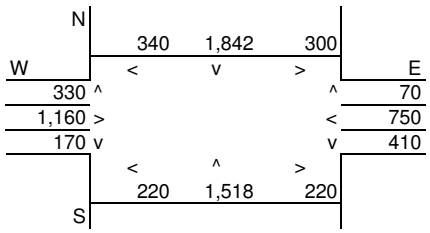
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

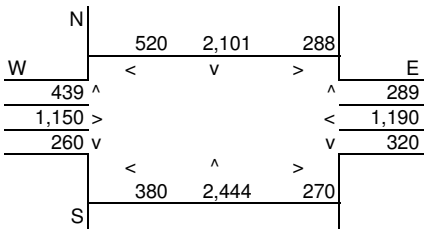
Intersection: Beach Boulevard and Warner Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	4,400	N-S Road:	6,081
E-W Road:	2,970	E-W Road:	3,939

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,400	0.19	0.07	0.05	0.04	0.03
East-West Road	2.8	2.3	2.0	1.7	2,970	0.19	0.02	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,081	0.19	0.10	0.06	0.05	0.04
East-West Road	2.8	2.3	2.0	1.7	3,939	0.19	0.02	0.02	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.0	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

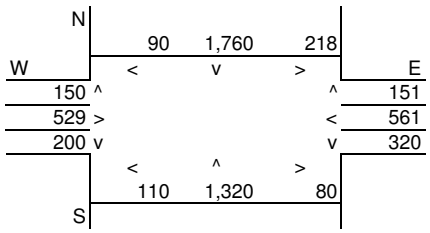
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

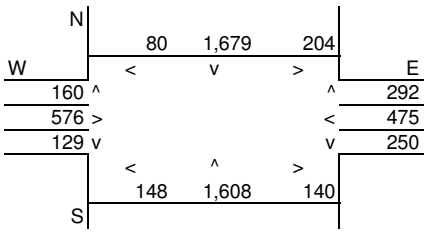
Intersection: Goldenwest Street and McFadden Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Goldenwest Street	At Grade	6	45	45
East-West Roadway:	McFadden Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,790	N-S Road:	4,023
E-W Road:	1,859	E-W Road:	1,937

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,790	0.19	0.07	0.04	0.03	0.02
East-West Road	2.8	2.3	2.0	1.7	1,859	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,023	0.19	0.07	0.05	0.04	0.03
East-West Road	2.8	2.3	2.0	1.7	1,937	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

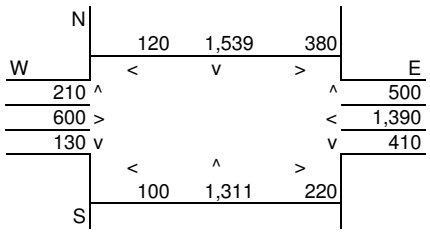
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

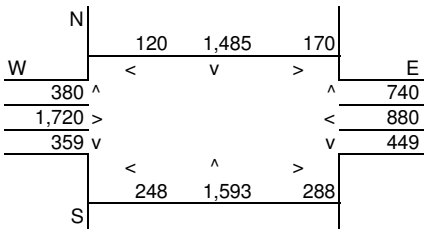
Intersection: Goldenwest Street and Bolsa Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Goldenwest Street	At Grade	6	45	45
East-West Roadway:	Bolsa Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	4,060	N-S Road:	4,488
E-W Road:	3,500	E-W Road:	4,247

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,060	0.19	0.07	0.05	0.04	0.03
East-West Road	2.8	2.3	2.0	1.7	3,500	0.19	0.02	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,488	0.19	0.08	0.05	0.04	0.03
East-West Road	2.8	2.3	2.0	1.7	4,247	0.19	0.02	0.02	0.02	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

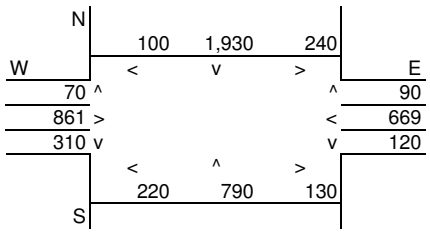
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

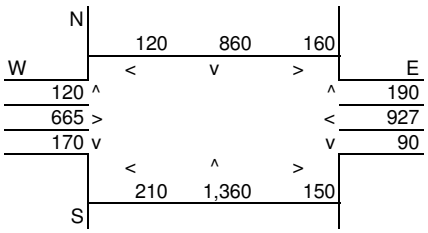
Intersection: Magnolia Avenue and Edinger Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Magnolia Avenue	At Grade	6	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,500	N-S Road:	2,840
E-W Road:	2,230	E-W Road:	2,212

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,500	0.19	0.06	0.04	0.03	0.02
East-West Road	2.8	2.3	2.0	1.7	2,230	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,840	0.19	0.05	0.03	0.03	0.02
East-West Road	2.8	2.3	2.0	1.7	2,212	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.0	5.0	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

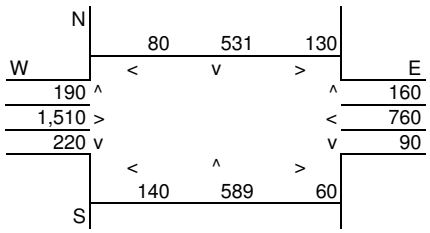
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

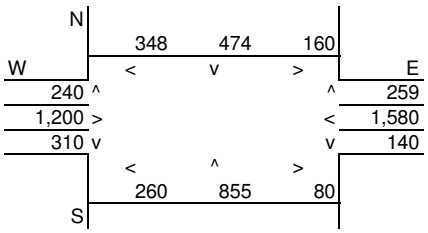
Intersection: Gothard Street and Warner Avenue
Analysis Condition: Reduced Alternative

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Gothard Street	At Grade	6	40	40
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,680	N-S Road:	2,336
E-W Road:	2,900	E-W Road:	3,938

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,680	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	2,900	0.19	0.05	0.03	0.03	0.02
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,336	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	3,938	0.19	0.07	0.04	0.04	0.03

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.0	5.1	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

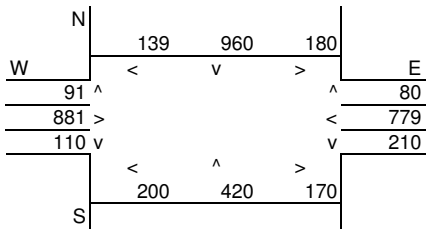
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

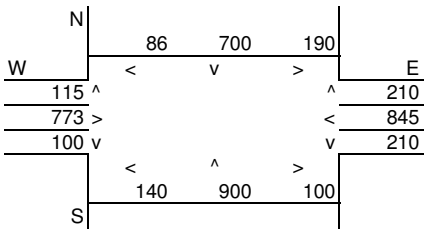
Intersection: Newland Street at Edinger Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Newland Street	At Grade	6	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,070	N-S Road:	2,201
E-W Road:	2,300	E-W Road:	2,328

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,070	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	2,300	0.19	0.04	0.03	0.02	0.01
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,201	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	2,328	0.19	0.04	0.03	0.02	0.02

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.0	5.0	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

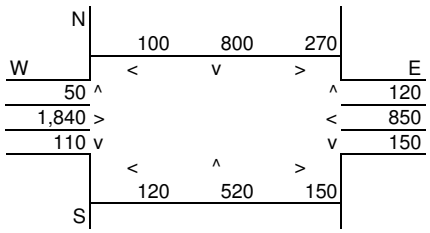
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

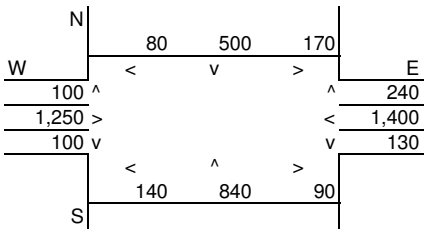
Intersection: Newland Street at Warner Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Newland Street	At Grade	6	45	45
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,860	N-S Road:	1,930
E-W Road:	3,380	E-W Road:	3,280

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,860	2.98	0.16	0.13	0.11	0.09
East-West Road	9.5	6.1	4.9	3.5	3,380	2.98	0.96	0.61	0.49	0.35
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,930	2.98	0.16	0.13	0.11	0.10
East-West Road	9.5	6.1	4.9	3.5	3,280	2.98	0.93	0.60	0.48	0.34

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.1	6.1	3.9
25 Feet from Roadway Edge	5.7	5.7	3.7
50 Feet from Roadway Edge	5.6	5.6	3.6

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

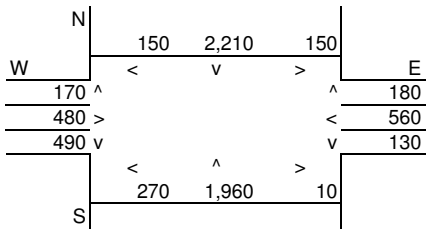
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

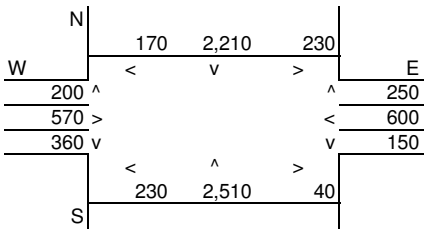
Intersection: Beach Boulevard and Bolsa Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Bolsa Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,070	N-S Road:	5,570
E-W Road:	2,120	E-W Road:	2,130

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,070	2.98	1.28	0.86	0.69	0.51
East-West Road	2.8	2.3	2.0	1.7	2,120	3.07	0.18	0.15	0.13	0.11
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,570	2.98	1.41	0.95	0.76	0.56
East-West Road	2.8	2.3	2.0	1.7	2,130	3.07	0.18	0.15	0.13	0.11

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.5	6.6	4.3
25 Feet from Roadway Edge	6.0	6.1	3.9
50 Feet from Roadway Edge	5.8	5.9	3.8

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

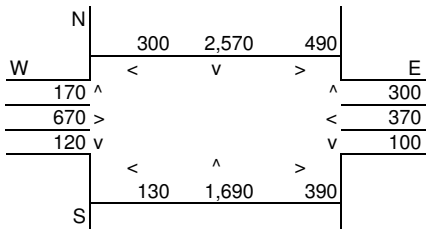
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

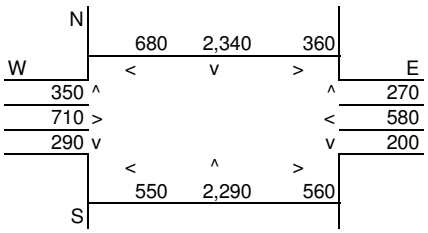
Intersection: Beach Boulevard and Edinger Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,520	N-S Road:	6,290
E-W Road:	2,320	E-W Road:	3,160

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,520	2.98	1.40	0.94	0.76	0.56
East-West Road	2.8	2.3	2.0	1.7	2,320	3.07	0.20	0.16	0.14	0.12
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,290	2.98	1.59	1.07	0.86	0.64
East-West Road	2.8	2.3	2.0	1.7	3,160	3.07	0.27	0.22	0.19	0.16

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.6	6.9	4.5
25 Feet from Roadway Edge	6.1	6.3	4.1
50 Feet from Roadway Edge	5.9	6.1	3.9

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

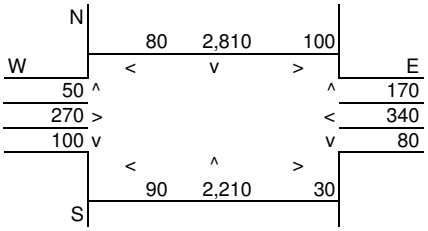
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

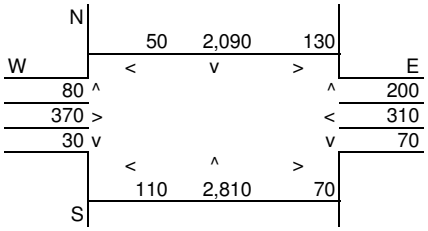
Intersection: Beach Boulevard and Hazard Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Hazard Avenue	At Grade	6	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,420	N-S Road:	5,360
E-W Road:	990	E-W Road:	1,150

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,420	2.98	1.37	0.92	0.74	0.55
East-West Road	2.8	2.3	2.0	1.7	990	3.23	0.09	0.07	0.06	0.05
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,360	2.98	1.36	0.91	0.73	0.54
East-West Road	2.8	2.3	2.0	1.7	1,150	3.23	0.10	0.09	0.07	0.06

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.5	6.5	4.2
25 Feet from Roadway Edge	6.0	6.0	3.9
50 Feet from Roadway Edge	5.8	5.8	3.7

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

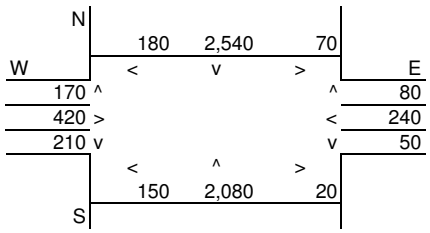
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

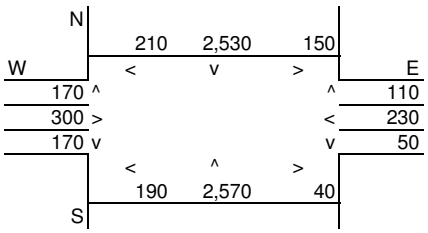
Intersection: Beach Boulevard at Heil
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Heil Avenue	At Grade	4	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,120	N-S Road:	5,740
E-W Road:	1,370	E-W Road:	1,270

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,120	2.98	1.30	0.87	0.70	0.52
East-West Road	3.3	2.6	2.2	1.7	1,370	3.07	0.14	0.11	0.09	0.07
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,740	2.98	1.45	0.97	0.79	0.58
East-West Road	3.3	2.6	2.2	1.7	1,270	3.07	0.13	0.10	0.09	0.07

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.4	6.6	4.3
25 Feet from Roadway Edge	6.0	6.1	3.9
50 Feet from Roadway Edge	5.8	5.9	3.8

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

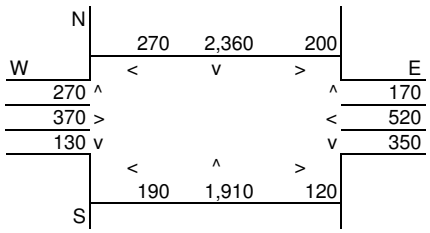
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

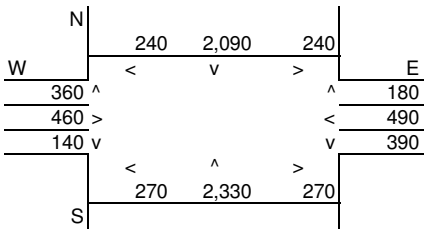
Intersection: Beach Boulevard and McFadden Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	McFadden Avenue	At Grade	4	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,180	N-S Road:	5,490
E-W Road:	1,750	E-W Road:	2,030

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,180	2.98	1.31	0.88	0.71	0.52
East-West Road	3.3	2.6	2.2	1.7	1,750	3.07	0.18	0.14	0.12	0.09
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,490	2.98	1.39	0.93	0.75	0.56
East-West Road	3.3	2.6	2.2	1.7	2,030	3.07	0.21	0.16	0.14	0.11

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.5	6.6	4.3
25 Feet from Roadway Edge	6.0	6.1	3.9
50 Feet from Roadway Edge	5.8	5.9	3.8

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

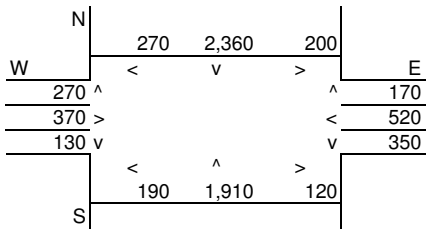
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

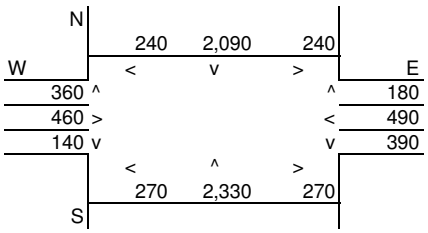
Intersection: Beach Boulevard and Warner Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,180	N-S Road:	5,490
E-W Road:	1,750	E-W Road:	2,030

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,180	2.98	1.31	0.88	0.71	0.52
East-West Road	2.8	2.3	2.0	1.7	1,750	2.98	0.15	0.12	0.10	0.09
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,490	2.98	1.39	0.93	0.75	0.56
East-West Road	2.8	2.3	2.0	1.7	2,030	2.98	0.17	0.14	0.12	0.10

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.5	6.6	4.3
25 Feet from Roadway Edge	6.0	6.1	3.9
50 Feet from Roadway Edge	5.8	5.9	3.8

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

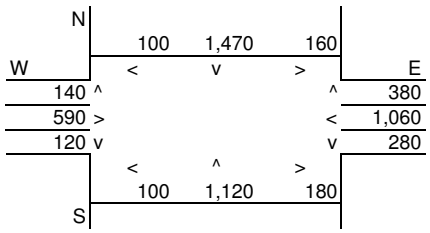
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

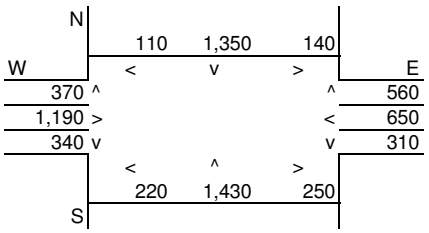
Intersection: Goldenwest Street and Bolsa Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Goldenwest Street	At Grade	6	45	45
East-West Roadway:	Bolsa Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

	A.M.	P.M.
N-S Road:	3,370	3,960
E-W Road:	2,650	3,100

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,370	2.98	0.95	0.61	0.49	0.35
East-West Road	2.8	2.3	2.0	1.7	2,650	3.07	0.23	0.19	0.16	0.14
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,960	2.98	1.12	0.72	0.58	0.41
East-West Road	2.8	2.3	2.0	1.7	3,100	3.07	0.27	0.22	0.19	0.16

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.2	6.4	4.1
25 Feet from Roadway Edge	5.8	5.9	3.8
50 Feet from Roadway Edge	5.7	5.8	3.7

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

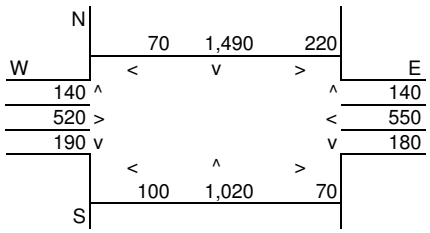
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

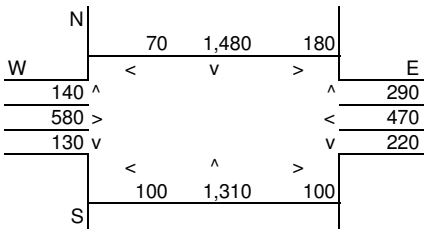
Intersection: Goldenwest Street and McFadden Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Goldenwest Street	At Grade	6	45	45
East-West Roadway:	McFadden Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,080	N-S Road:	3,470
E-W Road:	1,680	E-W Road:	1,840

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,080	2.98	0.87	0.56	0.45	0.32
East-West Road	2.8	2.3	2.0	1.7	1,680	3.07	0.14	0.12	0.10	0.09
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,470	2.98	0.98	0.63	0.51	0.36
East-West Road	2.8	2.3	2.0	1.7	1,840	3.07	0.16	0.13	0.11	0.10

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	6.1	4.0
25 Feet from Roadway Edge	5.7	5.8	3.7
50 Feet from Roadway Edge	5.6	5.6	3.6

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

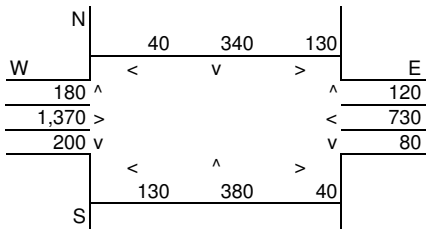
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

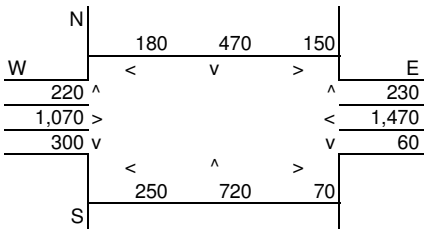
Intersection: Gothard Street and Warner Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Gothard Street	At Grade	6	40	40
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,190	N-S Road:	1,970
E-W Road:	2,650	E-W Road:	3,490

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,190	3.07	0.10	0.08	0.07	0.06
East-West Road	9.5	6.1	4.9	3.5	2,650	2.98	0.75	0.48	0.39	0.28
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,970	3.07	0.17	0.14	0.12	0.10
East-West Road	9.5	6.1	4.9	3.5	3,490	2.98	0.99	0.63	0.51	0.36

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.9	6.2	4.0
25 Feet from Roadway Edge	5.6	5.8	3.7
50 Feet from Roadway Edge	5.5	5.6	3.6

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

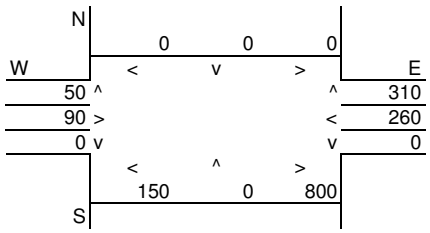
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

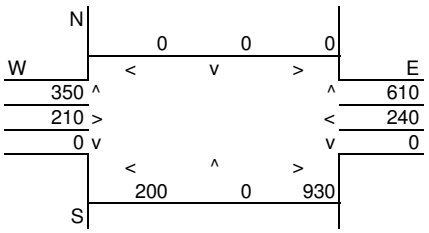
Intersection: I-405 SB Ramp at Center Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	I-405 Offramp	At Grade	4	45	45
East-West Roadway:	Center Avenue	At Grade	4	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	950	N-S Road:	1,130
E-W Road:	1,460	E-W Road:	1,990

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	950	2.98	0.09	0.07	0.06	0.05
East-West Road	11.9	7.0	5.4	3.8	1,460	3.23	0.56	0.33	0.25	0.18
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,130	2.98	0.11	0.09	0.07	0.06
East-West Road	11.9	7.0	5.4	3.8	1,990	3.23	0.77	0.45	0.35	0.24

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	5.9	3.8
25 Feet from Roadway Edge	5.4	5.5	3.5
50 Feet from Roadway Edge	5.3	5.4	3.5

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

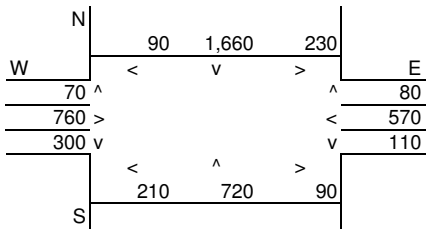
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

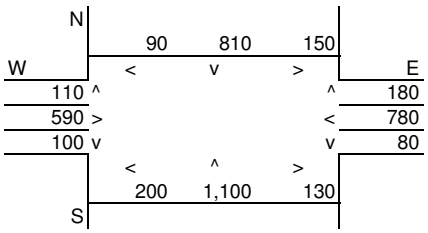
Intersection: Magnolia Avenue and Edinger Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Magnolia Avenue	At Grade	6	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,090	N-S Road:	2,440
E-W Road:	2,000	E-W Road:	1,910

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,090	2.98	0.87	0.56	0.45	0.32
East-West Road	2.8	2.3	2.0	1.7	2,000	3.07	0.17	0.14	0.12	0.10
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,440	2.98	0.69	0.44	0.36	0.25
East-West Road	2.8	2.3	2.0	1.7	1,910	3.07	0.16	0.13	0.12	0.10

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	5.9	3.9
25 Feet from Roadway Edge	5.7	5.6	3.7
50 Feet from Roadway Edge	5.6	5.5	3.6

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

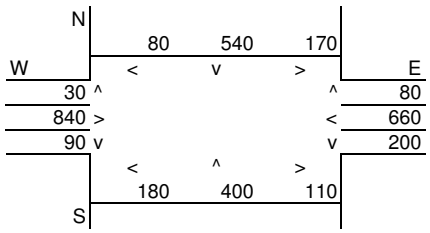
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

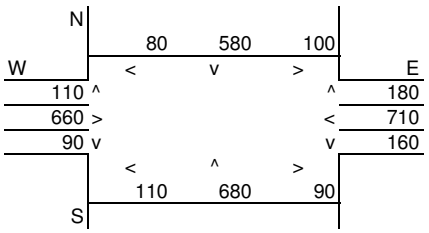
Intersection: Newland Street at Edinger Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Newland Street	At Grade	6	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,520	N-S Road:	1,730
E-W Road:	2,060	E-W Road:	1,900

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,520	2.98	0.13	0.10	0.09	0.08
East-West Road	9.5	6.1	4.9	3.5	2,060	3.07	0.60	0.39	0.31	0.22
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,730	2.98	0.14	0.12	0.10	0.09
East-West Road	9.5	6.1	4.9	3.5	1,900	3.07	0.55	0.36	0.29	0.20

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	5.7	3.7
25 Feet from Roadway Edge	5.5	5.5	3.5
50 Feet from Roadway Edge	5.4	5.4	3.4

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

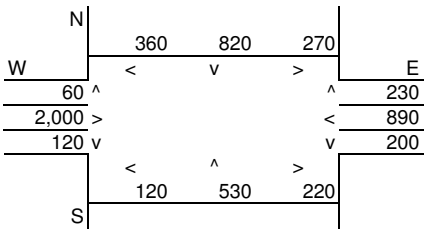
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

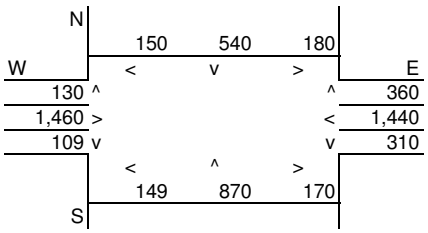
Intersection: Newland Street at Warner Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Newland Street	At Grade	6	45	45
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,270	N-S Road:	2,230
E-W Road:	3,810	E-W Road:	3,920

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,270	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	3,810	0.19	0.07	0.04	0.03	0.02
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,230	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	3,920	0.19	0.07	0.04	0.04	0.03

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

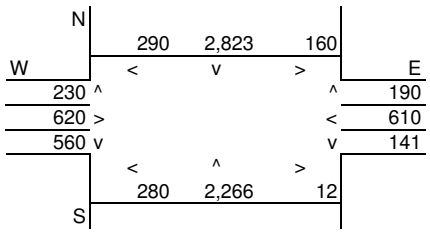
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

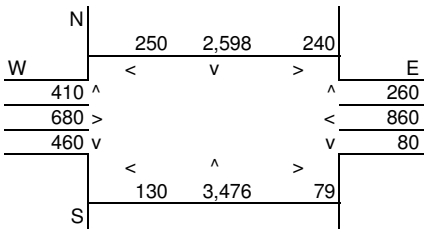
Intersection: Beach Boulevard and Bolsa Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Bolsa Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	6,082	N-S Road:	7,234
E-W Road:	2,590	E-W Road:	2,790

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,082	0.19	0.10	0.06	0.05	0.04
East-West Road	2.8	2.3	2.0	1.7	2,590	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	7,234	0.19	0.11	0.08	0.06	0.05
East-West Road	2.8	2.3	2.0	1.7	2,790	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.3
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

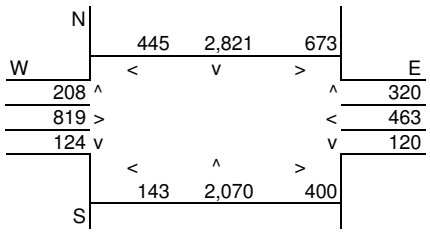
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

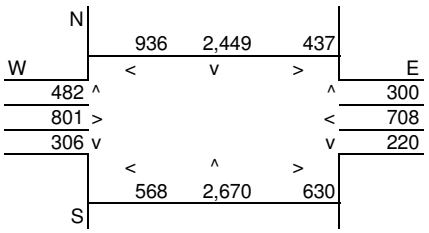
Intersection: Beach Boulevard and Edinger Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	6,537	N-S Road:	7,274
E-W Road:	2,795	E-W Road:	3,801

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,537	0.19	0.10	0.07	0.06	0.04
East-West Road	2.8	2.3	2.0	1.7	2,795	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	7,274	0.19	0.12	0.08	0.06	0.05
East-West Road	2.8	2.3	2.0	1.7	3,801	0.19	0.02	0.02	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.3
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

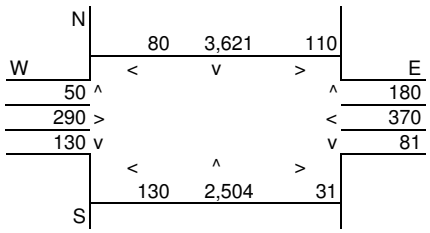
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

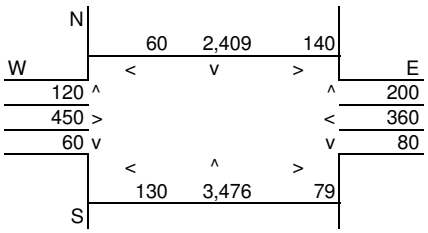
Intersection: Beach Boulevard and Hazard Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Hazard Avenue	At Grade	6	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	6,545	N-S Road:	6,405
E-W Road:	1,062	E-W Road:	1,309

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,545	0.19	0.10	0.07	0.06	0.04
East-West Road	2.8	2.3	2.0	1.7	1,062	0.19	0.01	0.00	0.00	0.00
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,405	0.19	0.10	0.07	0.05	0.04
East-West Road	2.8	2.3	2.0	1.7	1,309	0.19	0.01	0.01	0.00	0.00

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

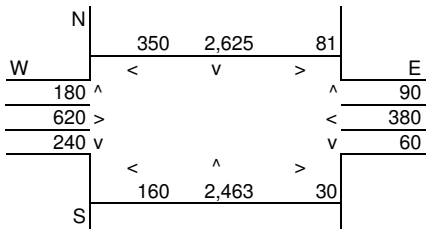
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

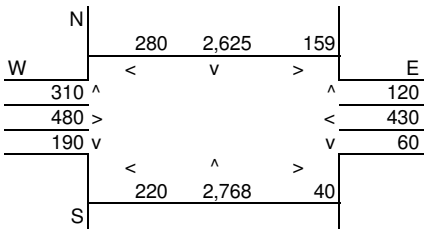
Intersection: Beach Boulevard at Heil
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Heil Avenue	At Grade	4	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,789	N-S Road:	6,262
E-W Road:	1,930	E-W Road:	1,910

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,789	0.19	0.09	0.06	0.05	0.04
East-West Road	3.3	2.6	2.2	1.7	1,930	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,262	0.19	0.10	0.07	0.05	0.04
East-West Road	3.3	2.6	2.2	1.7	1,910	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

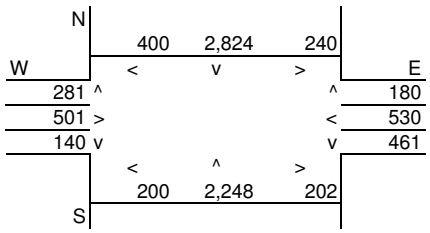
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

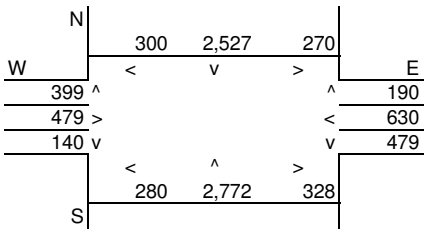
Intersection: Beach Boulevard and McFadden Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	McFadden Avenue	At Grade	4	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	6,173	N-S Road:	6,526
E-W Road:	2,114	E-W Road:	2,376

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,173	0.19	0.10	0.07	0.05	0.04
East-West Road	3.3	2.6	2.2	1.7	2,114	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,526	0.19	0.10	0.07	0.06	0.04
East-West Road	3.3	2.6	2.2	1.7	2,376	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

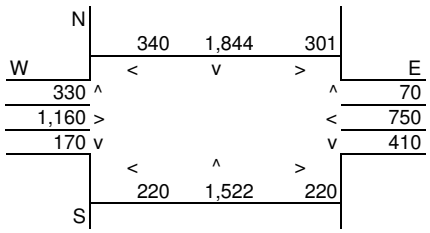
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

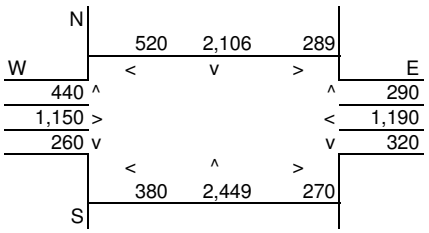
Intersection: Beach Boulevard and Warner Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Beach Boulevard	At Grade	8	45	45
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	4,407	N-S Road:	6,094
E-W Road:	2,970	E-W Road:	3,940

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,407	0.19	0.07	0.05	0.04	0.03
East-West Road	2.8	2.3	2.0	1.7	2,970	0.19	0.02	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,094	0.19	0.10	0.06	0.05	0.04
East-West Road	2.8	2.3	2.0	1.7	3,940	0.19	0.02	0.02	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.0	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

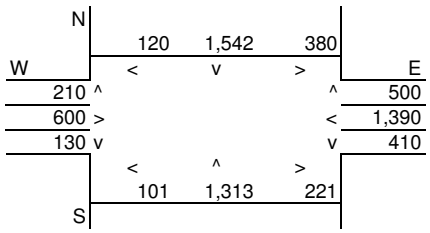
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

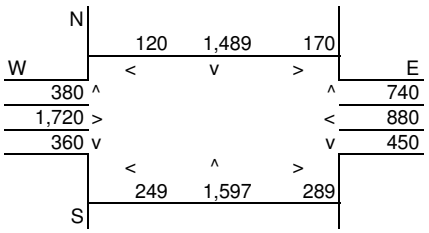
Intersection: Goldenwest Street and Bolsa Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Goldenwest Street	At Grade	6	45	45
East-West Roadway:	Bolsa Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	4,065	N-S Road:	4,496
E-W Road:	3,501	E-W Road:	4,249

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,065	0.19	0.07	0.05	0.04	0.03
East-West Road	2.8	2.3	2.0	1.7	3,501	0.19	0.02	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,496	0.19	0.08	0.05	0.04	0.03
East-West Road	2.8	2.3	2.0	1.7	4,249	0.19	0.02	0.02	0.02	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

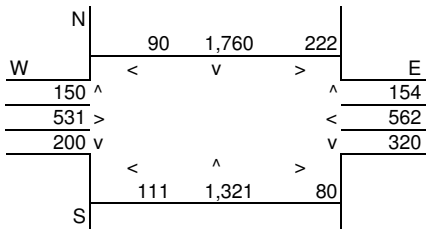
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

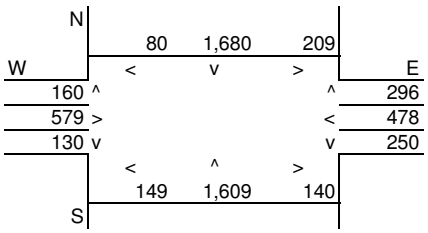
Intersection: Goldenwest Avenue and McFadden Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Goldenwest Avenue	At Grade	6	45	45
East-West Roadway:	McFadden Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,792	N-S Road:	4,034
E-W Road:	1,869	E-W Road:	1,952

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,792	0.19	0.07	0.04	0.03	0.02
East-West Road	2.8	2.3	2.0	1.7	1,869	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,034	0.19	0.07	0.05	0.04	0.03
East-West Road	2.8	2.3	2.0	1.7	1,952	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

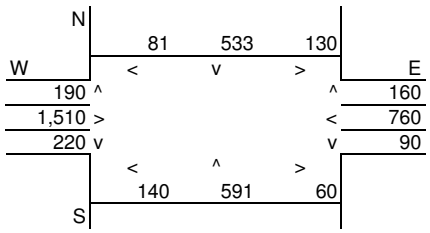
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

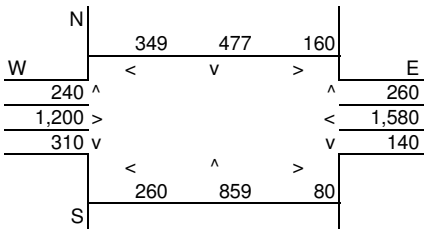
Intersection: Gothard Street and Warner Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Gothard Street	At Grade	6	40	40
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,685	N-S Road:	2,345
E-W Road:	2,901	E-W Road:	3,939

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,685	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	2,901	0.19	0.05	0.03	0.03	0.02
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,345	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	3,939	0.19	0.07	0.04	0.04	0.03

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.0	5.1	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

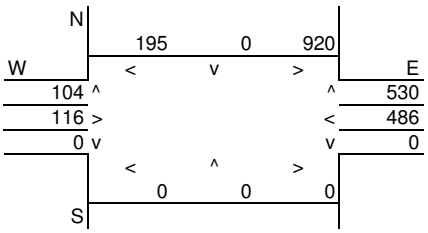
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

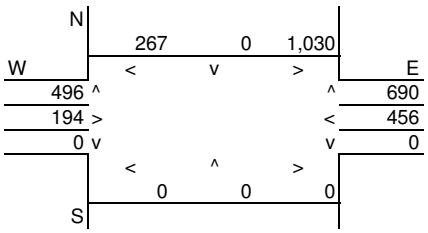
Intersection: I-405 SB Ramp at Center Avenue
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	I-405 Offramp	At Grade	4	45	45
East-West Roadway:	Center Avenue	At Grade	4	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,749	N-S Road:	2,483
E-W Road:	2,052	E-W Road:	2,370

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,749	0.19	0.01	0.01	0.01	0.01
East-West Road	11.9	7.0	5.4	3.8	2,052	0.19	0.05	0.03	0.02	0.01
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,483	0.19	0.05	0.03	0.02	0.02
East-West Road	3.3	2.6	2.2	1.7	2,370	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.0	5.0	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

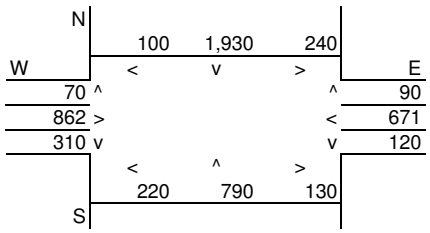
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

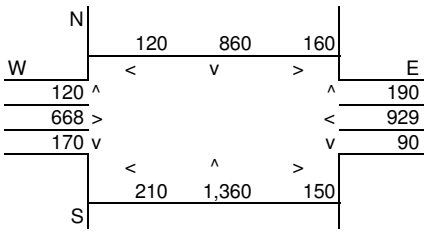
Intersection: Magnolia Avenue and Edinger Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Magnolia Avenue	At Grade	6	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,500	N-S Road:	2,840
E-W Road:	2,233	E-W Road:	2,217

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,500	0.19	0.06	0.04	0.03	0.02
East-West Road	2.8	2.3	2.0	1.7	2,233	0.19	0.01	0.01	0.01	0.01
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,840	0.19	0.05	0.03	0.03	0.02
East-West Road	2.8	2.3	2.0	1.7	2,217	0.19	0.01	0.01	0.01	0.01

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.0	5.0	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

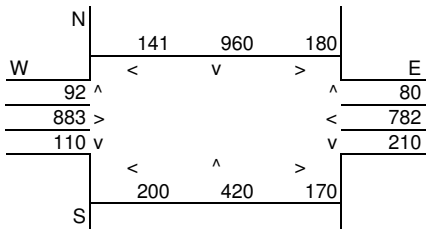
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

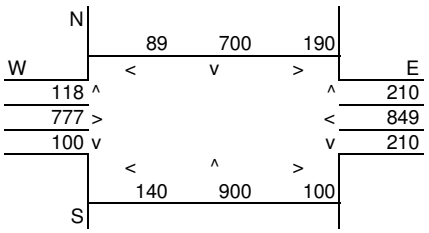
Intersection: Newland Street at Edinger Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Newland Street	At Grade	6	45	45
East-West Roadway:	Edinger Avenue	At Grade	6	40	40

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,070	N-S Road:	2,207
E-W Road:	2,305	E-W Road:	2,336

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

Roadway	A Reference CO Concentrations Edge	A_1 25 Feet	A_2 50 Feet	A_3 100 Feet	B Traffic Volume	C Emission Factors[2]	Estimated CO Concentrations Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,070	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	2,305	0.19	0.04	0.03	0.02	0.02
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,207	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	2,336	0.19	0.04	0.03	0.02	0.02

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.0	5.0	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 0D2138300
Project Title: HB Bella Terra EIR

Background Information

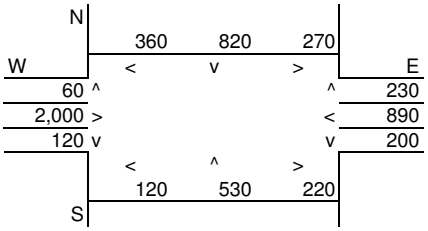
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.2
Persistence Factor:	0.7
Analysis Year:	2030

Roadway Data

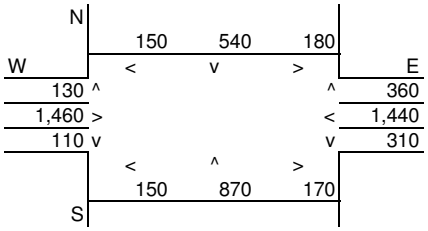
Intersection: Newland Street at Warner Avenue
Analysis Condition: GPA Option 2

		Roadway Type	No. of Lanes	Average Speed A.M.	Average Speed P.M.
North-South Roadway:	Newland Street	At Grade	6	45	45
East-West Roadway:	Warner Avenue	At Grade	6	45	45

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,270	N-S Road:	2,230
E-W Road:	3,810	E-W Road:	3,920

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

	A	A_1	A_2	A_3	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors[2]	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,270	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	3,810	0.19	0.07	0.04	0.03	0.02
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,230	0.19	0.01	0.01	0.01	0.01
East-West Road	9.5	6.1	4.9	3.5	3,920	0.19	0.07	0.04	0.04	0.03

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.1	5.1	3.2
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.0	5.0	3.2

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra GPA-ZTA Option 1.urb924

Project Name: HB Bella Terra EIR - GPA - ZTA Option 1

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	1.46	12.82	8.02	0.01	1.22	0.59	1.81	0.26	0.54	0.80	1,680.57
2009 TOTALS (tons/year mitigated)	1.46	12.82	8.02	0.01	0.90	0.59	1.49	0.19	0.54	0.73	1,680.57
Percent Reduction	0.00	0.00	0.00	0.00	26.07	0.00	17.57	25.77	0.00	8.30	0.00
2010 TOTALS (tons/year unmitigated)	1.33	10.70	12.73	0.01	0.06	0.49	0.55	0.02	0.45	0.47	2,341.20
2010 TOTALS (tons/year mitigated)	1.33	10.70	12.73	0.01	0.06	0.49	0.55	0.02	0.45	0.47	2,341.20
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011 TOTALS (tons/year unmitigated)	1.22	9.74	11.90	0.01	0.06	0.45	0.51	0.02	0.41	0.43	2,331.98
2011 TOTALS (tons/year mitigated)	1.22	9.74	11.90	0.01	0.06	0.45	0.51	0.02	0.41	0.43	2,331.98
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012 TOTALS (tons/year unmitigated)	3.94	1.71	1.89	0.00	0.01	0.09	0.10	0.00	0.09	0.09	379.12
2012 TOTALS (tons/year mitigated)	3.57	1.71	1.89	0.00	0.01	0.09	0.10	0.00	0.09	0.09	379.12
Percent Reduction	9.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

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	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	7.22	1.53	1.34	0.00	0.00	0.00	1,921.91

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	11.38	14.84	135.57	0.16	28.45	5.49	16,223.50

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	18.60	16.37	136.91	0.16	28.45	5.49	18,145.41

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.46	12.82	8.02	0.01	1.22	0.59	1.81	0.26	0.54	0.80	1,680.57
Demolition 01/01/2009-04/15/2009	0.40	3.78	1.55	0.00	0.54	0.17	0.71	0.11	0.15	0.27	420.61
Fugitive Dust	0.00	0.00	0.00	0.00	1.54	0.00	1.54	0.32	0.00	0.32	0.00
Demo Off Road Diesel	0.34	2.98	1.16	0.00	0.00	0.14	0.14	0.00	0.12	0.12	308.86
Demo On Road Diesel	0.06	0.79	0.29	0.00	0.00	0.03	0.04	0.00	0.03	0.03	100.07
Demo Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.67
Mass Grading 04/16/2009-06/01/2009	0.30	2.71	1.25	0.00	0.66	0.12	0.78	0.14	0.11	0.25	264.47
Mass Grading Dust	0.00	0.00	0.00	0.00	0.66	0.00	0.66	0.14	0.00	0.14	0.00
Mass Grading Off Road Diesel	0.27	2.41	1.08	0.00	0.00	0.11	0.11	0.00	0.10	0.10	219.58
Mass Grading On Road Diesel	0.02	0.30	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.70
Mass Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.19
Trenching 06/02/2009-09/16/2009	0.35	2.97	1.27	0.00	0.00	0.14	0.14	0.00	0.13	0.13	313.66
Trenching Off Road Diesel	0.35	2.97	1.17	0.00	0.00	0.14	0.14	0.00	0.13	0.13	301.68
Trenching Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98

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Building 09/17/2009-02/15/2012	0.41	3.36	3.95	0.00	0.02	0.16	0.18	0.01	0.14	0.15	681.82
Building Off Road Diesel	0.27	2.41	0.95	0.00	0.00	0.12	0.12	0.00	0.11	0.11	259.02
Building Vendor Trips	0.06	0.80	0.59	0.00	0.00	0.03	0.04	0.00	0.03	0.03	138.16
Building Worker Trips	0.08	0.14	2.42	0.00	0.01	0.01	0.02	0.00	0.01	0.01	284.64
2010	1.33	10.70	12.73	0.01	0.06	0.49	0.55	0.02	0.45	0.47	2,341.20
Building 09/17/2009-02/15/2012	1.33	10.70	12.73	0.01	0.06	0.49	0.55	0.02	0.45	0.47	2,341.20
Building Off Road Diesel	0.88	7.74	3.11	0.00	0.00	0.36	0.36	0.00	0.33	0.33	889.53
Building Vendor Trips	0.21	2.50	1.88	0.00	0.02	0.10	0.12	0.01	0.09	0.10	474.45
Building Worker Trips	0.24	0.45	7.73	0.01	0.05	0.03	0.07	0.02	0.02	0.04	977.21
2011	1.22	9.74	11.90	0.01	0.06	0.45	0.51	0.02	0.41	0.43	2,331.98
Building 09/17/2009-02/15/2012	1.22	9.74	11.90	0.01	0.06	0.45	0.51	0.02	0.41	0.43	2,331.98
Building Off Road Diesel	0.81	7.09	2.98	0.00	0.00	0.33	0.33	0.00	0.30	0.30	886.12
Building Vendor Trips	0.19	2.24	1.74	0.00	0.02	0.09	0.11	0.01	0.08	0.09	472.63
Building Worker Trips	0.22	0.41	7.18	0.01	0.05	0.03	0.07	0.02	0.02	0.04	973.23
2012	3.94	1.71	1.89	0.00	0.01	0.09	0.10	0.00	0.09	0.09	379.12
Building 09/17/2009-02/15/2012	0.15	1.13	1.42	0.00	0.01	0.05	0.06	0.00	0.05	0.05	295.96
Building Off Road Diesel	0.10	0.83	0.36	0.00	0.00	0.04	0.04	0.00	0.04	0.04	112.47
Building Vendor Trips	0.02	0.25	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	59.99
Building Worker Trips	0.03	0.05	0.85	0.00	0.01	0.00	0.01	0.00	0.00	0.00	123.50
Asphalt 02/16/2012-03/30/2012	0.09	0.58	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	68.29
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.08	0.56	0.32	0.00	0.00	0.04	0.04	0.00	0.04	0.04	58.97
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85
Paving Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47
Coating 04/02/2012-04/27/2012	3.71	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.87
Architectural Coating	3.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.87

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Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition
Building Volume Total (cubic feet): 3150000
Building Volume Daily (cubic feet): 34000
On Road Truck Travel (VMT): 629.63
Off-Road Equipment:
2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day
4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 15
Maximum Daily Acreage Disturbed: 2
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 539.09
Off-Road Equipment:
2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day
2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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
2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/16/2009 - Default Trenching Description
Off-Road Equipment:
2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

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Phase: Paving 2/16/2012 - 3/30/2012 - Curb/gutter base paving

Acres to be Paved: 3.75

Off-Road Equipment:

3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

4 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 8 hours per day

Phase: Building Construction 9/17/2009 - 2/15/2012 - Pile Driving and Building Construction

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.46	12.82	8.02	0.01	0.90	0.59	1.49	0.19	0.54	0.73	1,680.57
Demolition 01/01/2009-04/15/2009	0.40	3.78	1.55	0.00	0.54	0.17	0.71	0.11	0.15	0.27	420.61

Fugitive Dust	0.00	0.00	0.00	0.00	1.54	0.00	1.54	0.32	0.00	0.32	0.00
Demo Off Road Diesel	0.34	2.98	1.16	0.00	0.00	0.14	0.14	0.00	0.12	0.12	308.86
Demo On Road Diesel	0.06	0.79	0.29	0.00	0.00	0.03	0.04	0.00	0.03	0.03	100.07
Demo Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.67
Mass Grading 04/16/2009-06/01/2009	0.30	2.71	1.25	0.00	0.34	0.12	0.47	0.07	0.11	0.18	264.47
Mass Grading Dust	0.00	0.00	0.00	0.00	0.34	0.00	0.34	0.07	0.00	0.07	0.00
Mass Grading Off Road Diesel	0.27	2.41	1.08	0.00	0.00	0.11	0.11	0.00	0.10	0.10	219.58
Mass Grading On Road Diesel	0.02	0.30	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.70
Mass Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.19
Trenching 06/02/2009-09/16/2009	0.35	2.97	1.27	0.00	0.00	0.14	0.14	0.00	0.13	0.13	313.66
Trenching Off Road Diesel	0.35	2.97	1.17	0.00	0.00	0.14	0.14	0.00	0.13	0.13	301.68
Trenching Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98
Building 09/17/2009-02/15/2012	0.41	3.36	3.95	0.00	0.02	0.16	0.18	0.01	0.14	0.15	681.82
Building Off Road Diesel	0.27	2.41	0.95	0.00	0.00	0.12	0.12	0.00	0.11	0.11	259.02
Building Vendor Trips	0.06	0.80	0.59	0.00	0.00	0.03	0.04	0.00	0.03	0.03	138.16
Building Worker Trips	0.08	0.14	2.42	0.00	0.01	0.01	0.02	0.00	0.01	0.01	284.64
2010	1.33	10.70	12.73	0.01	0.06	0.49	0.55	0.02	0.45	0.47	2,341.20
Building 09/17/2009-02/15/2012	1.33	10.70	12.73	0.01	0.06	0.49	0.55	0.02	0.45	0.47	2,341.20
Building Off Road Diesel	0.88	7.74	3.11	0.00	0.00	0.36	0.36	0.00	0.33	0.33	889.53
Building Vendor Trips	0.21	2.50	1.88	0.00	0.02	0.10	0.12	0.01	0.09	0.10	474.45
Building Worker Trips	0.24	0.45	7.73	0.01	0.05	0.03	0.07	0.02	0.02	0.04	977.21
2011	1.22	9.74	11.90	0.01	0.06	0.45	0.51	0.02	0.41	0.43	2,331.98
Building 09/17/2009-02/15/2012	1.22	9.74	11.90	0.01	0.06	0.45	0.51	0.02	0.41	0.43	2,331.98
Building Off Road Diesel	0.81	7.09	2.98	0.00	0.00	0.33	0.33	0.00	0.30	0.30	886.12
Building Vendor Trips	0.19	2.24	1.74	0.00	0.02	0.09	0.11	0.01	0.08	0.09	472.63
Building Worker Trips	0.22	0.41	7.18	0.01	0.05	0.03	0.07	0.02	0.02	0.04	973.23
2012	3.57	1.71	1.89	0.00	0.01	0.09	0.10	0.00	0.09	0.09	379.12

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Building 09/17/2009-02/15/2012	0.15	1.13	1.42	0.00	0.01	0.05	0.06	0.00	0.05	0.05	295.96
Building Off Road Diesel	0.10	0.83	0.36	0.00	0.00	0.04	0.04	0.00	0.04	0.04	112.47
Building Vendor Trips	0.02	0.25	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	59.99
Building Worker Trips	0.03	0.05	0.85	0.00	0.01	0.00	0.01	0.00	0.00	0.00	123.50
Asphalt 02/16/2012-03/30/2012	0.09	0.58	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	68.29
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.08	0.56	0.32	0.00	0.00	0.04	0.04	0.00	0.04	0.04	58.97
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85
Paving Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47
Coating 04/02/2012-04/27/2012	3.34	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.87
Architectural Coating	3.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.87

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2

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Natural Gas	0.12	1.52	0.75	0.00	0.00	0.00	1,920.91
Hearth							
Landscape	0.05	0.01	0.59	0.00	0.00	0.00	1.00
Consumer Products	6.68						
Architectural Coatings	0.37						
TOTALS (tons/year, unmitigated)	7.22	1.53	1.34	0.00	0.00	0.00	1,921.91

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	5.11	6.10	57.22	0.07	11.72	2.26	6,717.09
Regnl shop. center	6.27	8.74	78.35	0.09	16.73	3.23	9,506.41
TOTALS (tons/year, unmitigated)	11.38	14.84	135.57	0.16	28.45	5.49	16,223.50

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	10.00	5.17	dwelling units	713.00	3,686.21	37,241.04
Regnl shop. center		42.94	1000 sq ft	138.08	5,929.16	53,202.31
					9,615.37	90,443.35

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra GPA-ZTA Option 1.urb924

Project Name: HB Bella Terra EIR - GPA - ZTA Option 1

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	17.89	164.42	104.02	0.11	40.10	7.39	47.49	8.39	6.80	15.19	17,942.73
2009 TOTALS (lbs/day mitigated)	17.89	164.42	104.02	0.11	20.82	7.39	28.22	4.36	6.80	11.16	17,942.73
2010 TOTALS (lbs/day unmitigated)	10.19	81.96	97.52	0.11	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
2010 TOTALS (lbs/day mitigated)	10.19	81.96	97.52	0.11	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
2011 TOTALS (lbs/day unmitigated)	9.41	74.94	91.53	0.11	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
2011 TOTALS (lbs/day mitigated)	9.41	74.94	91.53	0.11	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
2012 TOTALS (lbs/day unmitigated)	370.83	68.41	85.92	0.11	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
2012 TOTALS (lbs/day mitigated)	333.78	68.41	85.92	0.11	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	39.50	8.37	7.31	0.00	0.03	0.03	10,531.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2

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TOTALS (lbs/day, unmitigated)	60.66	75.92	754.36	0.94	155.87	30.08	91,868.90

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	100.16	84.29	761.67	0.94	155.90	30.11	102,399.95

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	**40.10**	**7.39**	**47.49**	**8.39**	**6.80**	**15.19**	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	40.10	7.39	47.49	8.39	6.80	15.19	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/16/2009 Active Days: 77	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/16/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/17/2009-12/31/2009 Active Days: 76	10.85	88.32	**104.02**	**0.11**	0.48	4.13	4.61	0.17	3.78	3.95	**17,942.73**
Building 09/17/2009-02/15/2012	10.85	88.32	104.02	0.11	0.48	4.13	4.61	0.17	3.78	3.95	17,942.73

Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.71	21.09	15.44	0.03	0.13	0.87	0.99	0.04	0.79	0.84	3,635.77
Building Worker Trips	2.00	3.77	63.64	0.08	0.35	0.19	0.55	0.13	0.16	0.29	7,490.62
Time Slice 1/1/2010-12/31/2010 Active Days: 261	10.19	81.96	97.52	**0.11**	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
Building 09/17/2009-02/15/2012	10.19	81.96	97.52	0.11	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.59	19.19	14.42	0.03	0.13	0.78	0.90	0.04	0.71	0.76	3,635.67
Building Worker Trips	1.83	3.46	59.24	0.08	0.35	0.19	0.55	0.13	0.16	0.29	7,488.21
Time Slice 1/3/2011-12/30/2011 Active Days: 260	9.41	74.94	91.53	**0.11**	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
Building 09/17/2009-02/15/2012	9.41	74.94	91.53	0.11	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.47	17.25	13.42	0.03	0.13	0.69	0.82	0.04	0.63	0.68	3,635.60
Building Worker Trips	1.67	3.17	55.23	0.08	0.35	0.20	0.56	0.13	0.17	0.30	7,486.39
Time Slice 1/2/2012-2/15/2012 Active Days: 33	8.81	68.41	85.92	**0.11**	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
Building 09/17/2009-02/15/2012	8.81	68.41	85.92	0.11	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
Building Off Road Diesel	5.94	50.16	22.09	0.00	0.00	2.32	2.32	0.00	2.13	2.13	6,816.34
Building Vendor Trips	1.34	15.36	12.43	0.03	0.13	0.61	0.74	0.04	0.56	0.60	3,635.66
Building Worker Trips	1.53	2.89	51.40	0.08	0.35	0.20	0.56	0.13	0.17	0.30	7,485.13
Time Slice 2/16/2012-3/30/2012 Active Days: 32	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Asphalt 02/16/2012-03/30/2012	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.06	34.99	19.74	0.00	0.00	2.57	2.57	0.00	2.36	2.36	3,685.57
Paving On Road Diesel	0.08	1.02	0.38	0.00	0.01	0.04	0.04	0.00	0.04	0.04	178.29
Paving Worker Trips	0.08	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.28
Time Slice 4/2/2012-4/27/2012 Active Days: 20	**370.83**	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88
Coating 04/02/2012-04/27/2012	370.83	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88
Architectural Coating	370.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Coating Worker Trips	0.30	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88

Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition

Building Volume Total (cubic feet): 3150000

Building Volume Daily (cubic feet): 34000

On Road Truck Travel (VMT): 629.63

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day

4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 15

Maximum Daily Acreage Disturbed: 2

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 539.09

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/16/2009 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

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Phase: Paving 2/16/2012 - 3/30/2012 - Curb/gutter base paving

Acres to be Paved: 3.75

Off-Road Equipment:

3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

4 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 8 hours per day

Phase: Building Construction 9/17/2009 - 2/15/2012 - Pile Driving and Building Construction

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20

Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	20.82	**7.39**	28.22	4.36	**6.80**	11.16	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	20.82	7.39	28.22	4.36	6.80	11.16	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	20.72	0.00	20.72	4.33	0.00	4.33	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/16/2009 Active Days: 77	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/16/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/17/2009-12/31/2009 Active Days: 76	10.85	88.32	**104.02**	**0.11**	0.48	4.13	4.61	0.17	3.78	3.95	**17,942.73**
Building 09/17/2009-02/15/2012	10.85	88.32	104.02	0.11	0.48	4.13	4.61	0.17	3.78	3.95	17,942.73
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.71	21.09	15.44	0.03	0.13	0.87	0.99	0.04	0.79	0.84	3,635.77
Building Worker Trips	2.00	3.77	63.64	0.08	0.35	0.19	0.55	0.13	0.16	0.29	7,490.62
Time Slice 1/1/2010-12/31/2010 Active Days: 261	10.19	81.96	97.52	**0.11**	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
Building 09/17/2009-02/15/2012	10.19	81.96	97.52	0.11	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.59	19.19	14.42	0.03	0.13	0.78	0.90	0.04	0.71	0.76	3,635.67
Building Worker Trips	1.83	3.46	59.24	0.08	0.35	0.19	0.55	0.13	0.16	0.29	7,488.21
Time Slice 1/3/2011-12/30/2011 Active Days: 260	9.41	74.94	91.53	**0.11**	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
Building 09/17/2009-02/15/2012	9.41	74.94	91.53	0.11	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34

Building Vendor Trips	1.47	17.25	13.42	0.03	0.13	0.69	0.82	0.04	0.63	0.68	3,635.60
Building Worker Trips	1.67	3.17	55.23	0.08	0.35	0.20	0.56	0.13	0.17	0.30	7,486.39
Time Slice 1/2/2012-2/15/2012 Active Days: 33	8.81	68.41	85.92	**0.11**	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
Building 09/17/2009-02/15/2012	8.81	68.41	85.92	0.11	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
Building Off Road Diesel	5.94	50.16	22.09	0.00	0.00	2.32	2.32	0.00	2.13	2.13	6,816.34
Building Vendor Trips	1.34	15.36	12.43	0.03	0.13	0.61	0.74	0.04	0.56	0.60	3,635.66
Building Worker Trips	1.53	2.89	51.40	0.08	0.35	0.20	0.56	0.13	0.17	0.30	7,485.13
Time Slice 2/16/2012-3/30/2012 Active Days: 32	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Asphalt 02/16/2012-03/30/2012	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.06	34.99	19.74	0.00	0.00	2.57	2.57	0.00	2.36	2.36	3,685.57
Paving On Road Diesel	0.08	1.02	0.38	0.00	0.01	0.04	0.04	0.00	0.04	0.04	178.29
Paving Worker Trips	0.08	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.28
Time Slice 4/2/2012-4/27/2012 Active Days: 20	333.78	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88
Coating 04/02/2012-04/27/2012	333.78	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88
Architectural Coating	333.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.30	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.64	8.33	4.10	0.00	0.02	0.02	10,525.55
Hearth							
Landscape	0.26	0.04	3.21	0.00	0.01	0.01	5.50
Consumer Products	36.58						
Architectural Coatings	2.02						
TOTALS (lbs/day, unmitigated)	39.50	8.37	7.31	0.00	0.03	0.03	10,531.05

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	27.73	31.18	318.86	0.39	64.20	12.40	38,030.16
Regnl shop. center	32.93	44.74	435.50	0.55	91.67	17.68	53,838.74
TOTALS (lbs/day, unmitigated)	60.66	75.92	754.36	0.94	155.87	30.08	91,868.90

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	10.00	5.17	dwelling units	713.00	3,686.21	37,241.04
Regnl shop. center		42.94	1000 sq ft	138.08	5,929.16	53,202.31
					9,615.37	90,443.35

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			

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% of Trips - Commercial (by land use)

Regnl shop. center	2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra GPA-ZTA Option 1.urb924

Project Name: HB Bella Terra EIR - GPA - ZTA Option 1

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	17.89	164.42	104.02	0.11	40.10	7.39	47.49	8.39	6.80	15.19	17,942.73
2009 TOTALS (lbs/day mitigated)	17.89	164.42	104.02	0.11	20.82	7.39	28.22	4.36	6.80	11.16	17,942.73
2010 TOTALS (lbs/day unmitigated)	10.19	81.96	97.52	0.11	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
2010 TOTALS (lbs/day mitigated)	10.19	81.96	97.52	0.11	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
2011 TOTALS (lbs/day unmitigated)	9.41	74.94	91.53	0.11	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
2011 TOTALS (lbs/day mitigated)	9.41	74.94	91.53	0.11	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
2012 TOTALS (lbs/day unmitigated)	370.83	68.41	85.92	0.11	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
2012 TOTALS (lbs/day mitigated)	333.78	68.41	85.92	0.11	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	39.24	8.33	4.10	0.00	0.02	0.02	10,525.55

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2

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TOTALS (lbs/day, unmitigated)	65.86	92.07	719.89	0.78	155.87	30.08	82,949.84

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	105.10	100.40	723.99	0.78	155.89	30.10	93,475.39

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	**40.10**	**7.39**	**47.49**	**8.39**	**6.80**	**15.19**	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	40.10	7.39	47.49	8.39	6.80	15.19	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/16/2009 Active Days: 77	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/16/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/17/2009-12/31/2009 Active Days: 76	10.85	88.32	**104.02**	**0.11**	0.48	4.13	4.61	0.17	3.78	3.95	**17,942.73**
Building 09/17/2009-02/15/2012	10.85	88.32	104.02	0.11	0.48	4.13	4.61	0.17	3.78	3.95	17,942.73

Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.71	21.09	15.44	0.03	0.13	0.87	0.99	0.04	0.79	0.84	3,635.77
Building Worker Trips	2.00	3.77	63.64	0.08	0.35	0.19	0.55	0.13	0.16	0.29	7,490.62
Time Slice 1/1/2010-12/31/2010 Active Days: 261	10.19	81.96	97.52	**0.11**	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
Building 09/17/2009-02/15/2012	10.19	81.96	97.52	0.11	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.59	19.19	14.42	0.03	0.13	0.78	0.90	0.04	0.71	0.76	3,635.67
Building Worker Trips	1.83	3.46	59.24	0.08	0.35	0.19	0.55	0.13	0.16	0.29	7,488.21
Time Slice 1/3/2011-12/30/2011 Active Days: 260	9.41	74.94	91.53	**0.11**	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
Building 09/17/2009-02/15/2012	9.41	74.94	91.53	0.11	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.47	17.25	13.42	0.03	0.13	0.69	0.82	0.04	0.63	0.68	3,635.60
Building Worker Trips	1.67	3.17	55.23	0.08	0.35	0.20	0.56	0.13	0.17	0.30	7,486.39
Time Slice 1/2/2012-2/15/2012 Active Days: 33	8.81	68.41	85.92	**0.11**	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
Building 09/17/2009-02/15/2012	8.81	68.41	85.92	0.11	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
Building Off Road Diesel	5.94	50.16	22.09	0.00	0.00	2.32	2.32	0.00	2.13	2.13	6,816.34
Building Vendor Trips	1.34	15.36	12.43	0.03	0.13	0.61	0.74	0.04	0.56	0.60	3,635.66
Building Worker Trips	1.53	2.89	51.40	0.08	0.35	0.20	0.56	0.13	0.17	0.30	7,485.13
Time Slice 2/16/2012-3/30/2012 Active Days: 32	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Asphalt 02/16/2012-03/30/2012	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.06	34.99	19.74	0.00	0.00	2.57	2.57	0.00	2.36	2.36	3,685.57
Paving On Road Diesel	0.08	1.02	0.38	0.00	0.01	0.04	0.04	0.00	0.04	0.04	178.29
Paving Worker Trips	0.08	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.28
Time Slice 4/2/2012-4/27/2012 Active Days: 20	**370.83**	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88
Coating 04/02/2012-04/27/2012	370.83	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88
Architectural Coating	370.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Coating Worker Trips	0.30	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88

Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition
Building Volume Total (cubic feet): 3150000
Building Volume Daily (cubic feet): 34000
On Road Truck Travel (VMT): 629.63
Off-Road Equipment:
2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day
4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 15
Maximum Daily Acreage Disturbed: 2
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 539.09
Off-Road Equipment:
2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day
2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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
2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/16/2009 - Default Trenching Description
Off-Road Equipment:
2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

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Phase: Paving 2/16/2012 - 3/30/2012 - Curb/gutter base paving

Acres to be Paved: 3.75

Off-Road Equipment:

3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

4 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 8 hours per day

Phase: Building Construction 9/17/2009 - 2/15/2012 - Pile Driving and Building Construction

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20

Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	20.82	**7.39**	28.22	4.36	**6.80**	11.16	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	20.82	7.39	28.22	4.36	6.80	11.16	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	20.72	0.00	20.72	4.33	0.00	4.33	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/16/2009 Active Days: 77	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/16/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/17/2009-12/31/2009 Active Days: 76	10.85	88.32	**104.02**	**0.11**	0.48	4.13	4.61	0.17	3.78	3.95	**17,942.73**
Building 09/17/2009-02/15/2012	10.85	88.32	104.02	0.11	0.48	4.13	4.61	0.17	3.78	3.95	17,942.73
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.71	21.09	15.44	0.03	0.13	0.87	0.99	0.04	0.79	0.84	3,635.77
Building Worker Trips	2.00	3.77	63.64	0.08	0.35	0.19	0.55	0.13	0.16	0.29	7,490.62
Time Slice 1/1/2010-12/31/2010 Active Days: 261	10.19	81.96	97.52	**0.11**	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
Building 09/17/2009-02/15/2012	10.19	81.96	97.52	0.11	0.48	3.76	4.24	0.17	3.44	3.61	17,940.21
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.59	19.19	14.42	0.03	0.13	0.78	0.90	0.04	0.71	0.76	3,635.67
Building Worker Trips	1.83	3.46	59.24	0.08	0.35	0.19	0.55	0.13	0.16	0.29	7,488.21
Time Slice 1/3/2011-12/30/2011 Active Days: 260	9.41	74.94	91.53	**0.11**	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
Building 09/17/2009-02/15/2012	9.41	74.94	91.53	0.11	0.48	3.43	3.91	0.17	3.14	3.31	17,938.34
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34

Building Vendor Trips	1.47	17.25	13.42	0.03	0.13	0.69	0.82	0.04	0.63	0.68	3,635.60
Building Worker Trips	1.67	3.17	55.23	0.08	0.35	0.20	0.56	0.13	0.17	0.30	7,486.39
Time Slice 1/2/2012-2/15/2012 Active Days: 33	8.81	68.41	85.92	**0.11**	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
Building 09/17/2009-02/15/2012	8.81	68.41	85.92	0.11	0.48	3.13	3.61	0.17	2.86	3.03	17,937.13
Building Off Road Diesel	5.94	50.16	22.09	0.00	0.00	2.32	2.32	0.00	2.13	2.13	6,816.34
Building Vendor Trips	1.34	15.36	12.43	0.03	0.13	0.61	0.74	0.04	0.56	0.60	3,635.66
Building Worker Trips	1.53	2.89	51.40	0.08	0.35	0.20	0.56	0.13	0.17	0.30	7,485.13
Time Slice 2/16/2012-3/30/2012 Active Days: 32	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Asphalt 02/16/2012-03/30/2012	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.06	34.99	19.74	0.00	0.00	2.57	2.57	0.00	2.36	2.36	3,685.57
Paving On Road Diesel	0.08	1.02	0.38	0.00	0.01	0.04	0.04	0.00	0.04	0.04	178.29
Paving Worker Trips	0.08	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.28
Time Slice 4/2/2012-4/27/2012 Active Days: 20	333.78	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88
Coating 04/02/2012-04/27/2012	333.78	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88
Architectural Coating	333.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.30	0.57	10.21	0.02	0.07	0.04	0.11	0.03	0.03	0.06	1,486.88

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.64	8.33	4.10	0.00	0.02	0.02	10,525.55
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	36.58						
Architectural Coatings	2.02						
TOTALS (lbs/day, unmitigated)	39.24	8.33	4.10	0.00	0.02	0.02	10,525.55

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	28.58	37.84	302.89	0.32	64.20	12.40	34,357.64
Regnl shop. center	37.28	54.23	417.00	0.46	91.67	17.68	48,592.20
TOTALS (lbs/day, unmitigated)	65.86	92.07	719.89	0.78	155.87	30.08	82,949.84

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	10.00	5.17	dwelling units	713.00	3,686.21	37,241.04
Regnl shop. center		42.94	1000 sq ft	138.08	5,929.16	53,202.31
					9,615.37	90,443.35

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			

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% of Trips - Commercial (by land use)

Regnl shop. center	2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra GPA-ZTA Option 2.urb924

Project Name: HB Bella Terra EIR - GPA - ZTA Option 2

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	1.46	12.77	8.18	0.01	1.22	0.59	1.81	0.26	0.54	0.80	1,694.71
2009 TOTALS (tons/year mitigated)	1.46	12.77	8.18	0.01	0.90	0.59	1.49	0.19	0.54	0.73	1,694.71
Percent Reduction	0.00	0.00	0.00	0.00	26.06	0.00	17.58	25.74	0.00	8.31	0.00
2010 TOTALS (tons/year unmitigated)	1.33	10.54	13.25	0.02	0.07	0.48	0.55	0.02	0.44	0.47	2,389.75
2010 TOTALS (tons/year mitigated)	1.33	10.54	13.25	0.02	0.07	0.48	0.55	0.02	0.44	0.47	2,389.75
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011 TOTALS (tons/year unmitigated)	1.23	9.61	12.39	0.02	0.07	0.44	0.51	0.02	0.40	0.43	2,380.33
2011 TOTALS (tons/year mitigated)	1.23	9.61	12.39	0.02	0.07	0.44	0.51	0.02	0.40	0.43	2,380.33
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012 TOTALS (tons/year unmitigated)	6.35	1.70	1.95	0.00	0.01	0.09	0.10	0.00	0.09	0.09	386.42
2012 TOTALS (tons/year mitigated)	5.74	1.70	1.95	0.00	0.01	0.09	0.10	0.00	0.09	0.09	386.42
Percent Reduction	9.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	5.83	1.70	1.61	0.00	0.00	0.00	2,106.31

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	22.47	30.54	275.59	0.33	58.49	11.28	33,277.02

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	28.30	32.24	277.20	0.33	58.49	11.28	35,383.33

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.46	12.77	8.18	0.01	1.22	0.59	1.81	0.26	0.54	0.80	1,694.71
Demolition 01/01/2009-04/15/2009	0.40	3.78	1.55	0.00	0.54	0.17	0.71	0.11	0.15	0.27	420.61
Fugitive Dust	0.00	0.00	0.00	0.00	1.54	0.00	1.54	0.32	0.00	0.32	0.00
Demo Off Road Diesel	0.34	2.98	1.16	0.00	0.00	0.14	0.14	0.00	0.12	0.12	308.86
Demo On Road Diesel	0.06	0.79	0.29	0.00	0.00	0.03	0.04	0.00	0.03	0.03	100.07
Demo Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.67
Mass Grading 04/16/2009-06/01/2009	0.30	2.71	1.25	0.00	0.66	0.12	0.78	0.14	0.11	0.25	264.47
Mass Grading Dust	0.00	0.00	0.00	0.00	0.66	0.00	0.66	0.14	0.00	0.14	0.00
Mass Grading Off Road Diesel	0.27	2.41	1.08	0.00	0.00	0.11	0.11	0.00	0.10	0.10	219.58
Mass Grading On Road Diesel	0.02	0.30	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.70
Mass Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.19
Trenching 06/02/2009-09/16/2009	0.35	2.97	1.27	0.00	0.00	0.14	0.14	0.00	0.13	0.13	313.66

Trenching Off Road Diesel	0.35	2.97	1.17	0.00	0.00	0.14	0.14	0.00	0.13	0.13	301.68
Trenching Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98
Building 09/17/2009-02/15/2012	0.41	3.31	4.12	0.00	0.02	0.16	0.17	0.01	0.14	0.15	695.97
Building Off Road Diesel	0.27	2.41	0.95	0.00	0.00	0.12	0.12	0.00	0.11	0.11	259.02
Building Vendor Trips	0.06	0.74	0.55	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.37
Building Worker Trips	0.08	0.16	2.62	0.00	0.01	0.01	0.02	0.01	0.01	0.01	308.57
2010	1.33	10.54	13.25	0.02	0.07	0.48	0.55	0.02	0.44	0.47	2,389.75
Building 09/17/2009-02/15/2012	1.33	10.54	13.25	0.02	0.07	0.48	0.55	0.02	0.44	0.47	2,389.75
Building Off Road Diesel	0.88	7.74	3.11	0.00	0.00	0.36	0.36	0.00	0.33	0.33	889.53
Building Vendor Trips	0.19	2.31	1.76	0.00	0.02	0.09	0.11	0.01	0.09	0.09	440.85
Building Worker Trips	0.26	0.49	8.38	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,059.37
2011	1.23	9.61	12.39	0.02	0.07	0.44	0.51	0.02	0.40	0.43	2,380.33
Building 09/17/2009-02/15/2012	1.23	9.61	12.39	0.02	0.07	0.44	0.51	0.02	0.40	0.43	2,380.33
Building Off Road Diesel	0.81	7.09	2.98	0.00	0.00	0.33	0.33	0.00	0.30	0.30	886.12
Building Vendor Trips	0.18	2.07	1.63	0.00	0.02	0.08	0.10	0.01	0.08	0.08	439.15
Building Worker Trips	0.24	0.45	7.78	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,055.05
2012	6.35	1.70	1.95	0.00	0.01	0.09	0.10	0.00	0.09	0.09	386.42
Building 09/17/2009-02/15/2012	0.15	1.11	1.48	0.00	0.01	0.05	0.06	0.00	0.05	0.05	302.10
Building Off Road Diesel	0.10	0.83	0.36	0.00	0.00	0.04	0.04	0.00	0.04	0.04	112.47
Building Vendor Trips	0.02	0.23	0.19	0.00	0.00	0.01	0.01	0.00	0.01	0.01	55.74
Building Worker Trips	0.03	0.05	0.92	0.00	0.01	0.00	0.01	0.00	0.00	0.01	133.89
Asphalt 02/16/2012-03/30/2012	0.09	0.58	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	68.29
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.08	0.56	0.32	0.00	0.00	0.04	0.04	0.00	0.04	0.04	58.97
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85
Paving Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47

Coating 04/02/2012-04/27/2012	6.12	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.04
Architectural Coating	6.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.04

Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition

Building Volume Total (cubic feet): 3150000

Building Volume Daily (cubic feet): 34000

On Road Truck Travel (VMT): 629.63

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day

4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 15

Maximum Daily Acreage Disturbed: 2

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 539.09

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/16/2009 - Default Trenching Description

Off-Road Equipment:

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2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 2/16/2012 - 3/30/2012 - Curb/gutter base paving

Acres to be Paved: 3.75

Off-Road Equipment:

3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

4 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 8 hours per day

Phase: Building Construction 9/17/2009 - 2/15/2012 - Pile Driving and Building Construction

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

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CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.46	12.77	8.18	0.01	0.90	0.59	1.49	0.19	0.54	0.73	1,694.71
Demolition 01/01/2009-04/15/2009	0.40	3.78	1.55	0.00	0.54	0.17	0.71	0.11	0.15	0.27	420.61
Fugitive Dust	0.00	0.00	0.00	0.00	1.54	0.00	1.54	0.32	0.00	0.32	0.00
Demo Off Road Diesel	0.34	2.98	1.16	0.00	0.00	0.14	0.14	0.00	0.12	0.12	308.86
Demo On Road Diesel	0.06	0.79	0.29	0.00	0.00	0.03	0.04	0.00	0.03	0.03	100.07
Demo Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.67
Mass Grading 04/16/2009-06/01/2009	0.30	2.71	1.25	0.00	0.34	0.12	0.47	0.07	0.11	0.18	264.47
Mass Grading Dust	0.00	0.00	0.00	0.00	0.34	0.00	0.34	0.07	0.00	0.07	0.00
Mass Grading Off Road Diesel	0.27	2.41	1.08	0.00	0.00	0.11	0.11	0.00	0.10	0.10	219.58
Mass Grading On Road Diesel	0.02	0.30	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.70
Mass Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.19
Trenching 06/02/2009-09/16/2009	0.35	2.97	1.27	0.00	0.00	0.14	0.14	0.00	0.13	0.13	313.66
Trenching Off Road Diesel	0.35	2.97	1.17	0.00	0.00	0.14	0.14	0.00	0.13	0.13	301.68
Trenching Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98
Building 09/17/2009-02/15/2012	0.41	3.31	4.12	0.00	0.02	0.16	0.17	0.01	0.14	0.15	695.97
Building Off Road Diesel	0.27	2.41	0.95	0.00	0.00	0.12	0.12	0.00	0.11	0.11	259.02
Building Vendor Trips	0.06	0.74	0.55	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.37
Building Worker Trips	0.08	0.16	2.62	0.00	0.01	0.01	0.02	0.01	0.01	0.01	308.57
2010	1.33	10.54	13.25	0.02	0.07	0.48	0.55	0.02	0.44	0.47	2,389.75
Building 09/17/2009-02/15/2012	1.33	10.54	13.25	0.02	0.07	0.48	0.55	0.02	0.44	0.47	2,389.75
Building Off Road Diesel	0.88	7.74	3.11	0.00	0.00	0.36	0.36	0.00	0.33	0.33	889.53
Building Vendor Trips	0.19	2.31	1.76	0.00	0.02	0.09	0.11	0.01	0.09	0.09	440.85
Building Worker Trips	0.26	0.49	8.38	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,059.37

2011	1.23	9.61	12.39	0.02	0.07	0.44	0.51	0.02	0.40	0.43	2,380.33
Building 09/17/2009-02/15/2012	1.23	9.61	12.39	0.02	0.07	0.44	0.51	0.02	0.40	0.43	2,380.33
Building Off Road Diesel	0.81	7.09	2.98	0.00	0.00	0.33	0.33	0.00	0.30	0.30	886.12
Building Vendor Trips	0.18	2.07	1.63	0.00	0.02	0.08	0.10	0.01	0.08	0.08	439.15
Building Worker Trips	0.24	0.45	7.78	0.01	0.05	0.03	0.08	0.02	0.02	0.04	1,055.05
2012	5.74	1.70	1.95	0.00	0.01	0.09	0.10	0.00	0.09	0.09	386.42
Building 09/17/2009-02/15/2012	0.15	1.11	1.48	0.00	0.01	0.05	0.06	0.00	0.05	0.05	302.10
Building Off Road Diesel	0.10	0.83	0.36	0.00	0.00	0.04	0.04	0.00	0.04	0.04	112.47
Building Vendor Trips	0.02	0.23	0.19	0.00	0.00	0.01	0.01	0.00	0.01	0.01	55.74
Building Worker Trips	0.03	0.05	0.92	0.00	0.01	0.00	0.01	0.00	0.00	0.01	133.89
Asphalt 02/16/2012-03/30/2012	0.09	0.58	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	68.29
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.08	0.56	0.32	0.00	0.00	0.04	0.04	0.00	0.04	0.04	58.97
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85
Paving Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.47
Coating 04/02/2012-04/27/2012	5.51	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.04
Architectural Coating	5.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.04

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.13	1.69	1.02	0.00	0.00	0.00	2,105.31
Hearth							
Landscape	0.05	0.01	0.59	0.00	0.00	0.00	1.00
Consumer Products	5.04						
Architectural Coatings	0.61						
TOTALS (tons/year, unmitigated)	5.83	1.70	1.61	0.00	0.00	0.00	2,106.31

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	3.66	4.33	40.67	0.05	8.33	1.61	4,774.33
Regnl shop. center	18.81	26.21	234.92	0.28	50.16	9.67	28,502.69
TOTALS (tons/year, unmitigated)	22.47	30.54	275.59	0.33	58.49	11.28	33,277.02

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	5.00	4.87	dwelling units	538.00	2,620.06	26,469.94
Regnl shop. center		42.94	1000 sq ft	414.00	17,777.16	159,514.45
					20,397.22	185,984.39

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer

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Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra GPA-ZTA Option 2.urb924

Project Name: HB Bella Terra EIR - GPA - ZTA Option 2

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	17.89	164.42	108.36	0.12	40.10	7.39	47.49	8.39	6.80	15.19	18,314.95
2009 TOTALS (lbs/day mitigated)	17.89	164.42	108.36	0.12	20.82	7.39	28.22	4.36	6.80	11.16	18,314.95
2010 TOTALS (lbs/day unmitigated)	10.22	80.80	101.56	0.12	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
2010 TOTALS (lbs/day mitigated)	10.22	80.80	101.56	0.12	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
2011 TOTALS (lbs/day unmitigated)	9.44	73.90	95.30	0.12	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
2011 TOTALS (lbs/day mitigated)	9.44	73.90	95.30	0.12	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
2012 TOTALS (lbs/day unmitigated)	611.74	67.49	89.43	0.12	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
2012 TOTALS (lbs/day mitigated)	550.60	67.49	89.43	0.12	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	31.90	9.32	8.82	0.00	0.03	0.03	11,541.44

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2

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TOTALS (lbs/day, unmitigated)	118.63	156.29	1,532.38	1.93	320.48	61.81	188,453.48

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	150.53	165.61	1,541.20	1.93	320.51	61.84	199,994.92

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	**40.10**	**7.39**	**47.49**	**8.39**	**6.80**	**15.19**	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	40.10	7.39	47.49	8.39	6.80	15.19	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/16/2009 Active Days: 77	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/16/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/17/2009-12/31/2009 Active Days: 76	10.89	87.05	**108.36**	**0.12**	0.50	4.08	4.58	0.18	3.74	3.91	**18,314.95**
Building 09/17/2009-02/15/2012	10.89	87.05	108.36	0.12	0.50	4.08	4.58	0.18	3.74	3.91	18,314.95

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Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.58	19.49	14.42	0.03	0.12	0.80	0.92	0.04	0.73	0.77	3,378.24
Building Worker Trips	2.17	4.09	68.99	0.08	0.38	0.21	0.59	0.14	0.18	0.32	8,120.37
Time Slice 1/1/2010-12/31/2010 Active Days: 261	10.22	80.80	101.56	**0.12**	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
Building 09/17/2009-02/15/2012	10.22	80.80	101.56	0.12	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.47	17.73	13.47	0.03	0.12	0.72	0.84	0.04	0.66	0.70	3,378.15
Building Worker Trips	1.98	3.75	64.22	0.08	0.38	0.21	0.59	0.14	0.18	0.32	8,117.76
Time Slice 1/3/2011-12/30/2011 Active Days: 260	9.44	73.90	95.30	**0.12**	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
Building 09/17/2009-02/15/2012	9.44	73.90	95.30	0.12	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.36	15.95	12.54	0.03	0.12	0.64	0.76	0.04	0.59	0.63	3,378.09
Building Worker Trips	1.81	3.43	59.87	0.08	0.38	0.22	0.60	0.14	0.19	0.32	8,115.79
Time Slice 1/2/2012-2/15/2012 Active Days: 33	8.84	67.49	89.43	**0.12**	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
Building 09/17/2009-02/15/2012	8.84	67.49	89.43	0.12	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
Building Off Road Diesel	5.94	50.16	22.09	0.00	0.00	2.32	2.32	0.00	2.13	2.13	6,816.34
Building Vendor Trips	1.25	14.20	11.62	0.03	0.12	0.57	0.68	0.04	0.52	0.56	3,378.15
Building Worker Trips	1.65	3.13	55.72	0.08	0.38	0.22	0.60	0.14	0.19	0.32	8,114.42
Time Slice 2/16/2012-3/30/2012 Active Days: 32	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Asphalt 02/16/2012-03/30/2012	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.06	34.99	19.74	0.00	0.00	2.57	2.57	0.00	2.36	2.36	3,685.57
Paving On Road Diesel	0.08	1.02	0.38	0.00	0.01	0.04	0.04	0.00	0.04	0.04	178.29
Paving Worker Trips	0.08	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.28
Time Slice 4/2/2012-4/27/2012 Active Days: 20	**611.74**	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67
Coating 04/02/2012-04/27/2012	611.74	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67
Architectural Coating	611.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Coating Worker Trips	0.33	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67

Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition

Building Volume Total (cubic feet): 3150000

Building Volume Daily (cubic feet): 34000

On Road Truck Travel (VMT): 629.63

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day

4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 15

Maximum Daily Acreage Disturbed: 2

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 539.09

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/16/2009 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

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Phase: Paving 2/16/2012 - 3/30/2012 - Curb/gutter base paving

Acres to be Paved: 3.75

Off-Road Equipment:

3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

4 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 8 hours per day

Phase: Building Construction 9/17/2009 - 2/15/2012 - Pile Driving and Building Construction

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20

Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	20.82	**7.39**	28.22	4.36	**6.80**	11.16	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	20.82	7.39	28.22	4.36	6.80	11.16	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	20.72	0.00	20.72	4.33	0.00	4.33	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/16/2009 Active Days: 77	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/16/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/17/2009-12/31/2009 Active Days: 76	10.89	87.05	**108.36**	**0.12**	0.50	4.08	4.58	0.18	3.74	3.91	**18,314.95**
Building 09/17/2009-02/15/2012	10.89	87.05	108.36	0.12	0.50	4.08	4.58	0.18	3.74	3.91	18,314.95
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.58	19.49	14.42	0.03	0.12	0.80	0.92	0.04	0.73	0.77	3,378.24
Building Worker Trips	2.17	4.09	68.99	0.08	0.38	0.21	0.59	0.14	0.18	0.32	8,120.37
Time Slice 1/1/2010-12/31/2010 Active Days: 261	10.22	80.80	101.56	**0.12**	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
Building 09/17/2009-02/15/2012	10.22	80.80	101.56	0.12	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.47	17.73	13.47	0.03	0.12	0.72	0.84	0.04	0.66	0.70	3,378.15
Building Worker Trips	1.98	3.75	64.22	0.08	0.38	0.21	0.59	0.14	0.18	0.32	8,117.76
Time Slice 1/3/2011-12/30/2011 Active Days: 260	9.44	73.90	95.30	**0.12**	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
Building 09/17/2009-02/15/2012	9.44	73.90	95.30	0.12	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34

Building Vendor Trips	1.36	15.95	12.54	0.03	0.12	0.64	0.76	0.04	0.59	0.63	3,378.09
Building Worker Trips	1.81	3.43	59.87	0.08	0.38	0.22	0.60	0.14	0.19	0.32	8,115.79
Time Slice 1/2/2012-2/15/2012 Active Days: 33	8.84	67.49	89.43	**0.12**	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
Building 09/17/2009-02/15/2012	8.84	67.49	89.43	0.12	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
Building Off Road Diesel	5.94	50.16	22.09	0.00	0.00	2.32	2.32	0.00	2.13	2.13	6,816.34
Building Vendor Trips	1.25	14.20	11.62	0.03	0.12	0.57	0.68	0.04	0.52	0.56	3,378.15
Building Worker Trips	1.65	3.13	55.72	0.08	0.38	0.22	0.60	0.14	0.19	0.32	8,114.42
Time Slice 2/16/2012-3/30/2012 Active Days: 32	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Asphalt 02/16/2012-03/30/2012	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.06	34.99	19.74	0.00	0.00	2.57	2.57	0.00	2.36	2.36	3,685.57
Paving On Road Diesel	0.08	1.02	0.38	0.00	0.01	0.04	0.04	0.00	0.04	0.04	178.29
Paving Worker Trips	0.08	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.28
Time Slice 4/2/2012-4/27/2012 Active Days: 20	550.60	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67
Coating 04/02/2012-04/27/2012	550.60	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67
Architectural Coating	550.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.33	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.70	9.28	5.61	0.00	0.02	0.02	11,535.94
Hearth							
Landscape	0.26	0.04	3.21	0.00	0.01	0.01	5.50
Consumer Products	27.60						
Architectural Coatings	3.34						
TOTALS (lbs/day, unmitigated)	31.90	9.32	8.82	0.00	0.03	0.03	11,541.44

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	19.91	22.16	226.64	0.28	45.63	8.81	27,030.83
Regnl shop. center	98.72	134.13	1,305.74	1.65	274.85	53.00	161,422.65
TOTALS (lbs/day, unmitigated)	118.63	156.29	1,532.38	1.93	320.48	61.81	188,453.48

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	5.00	4.87	dwelling units	538.00	2,620.06	26,469.94
Regnl shop. center		42.94	1000 sq ft	414.00	17,777.16	159,514.45
					20,397.22	185,984.39

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			

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% of Trips - Commercial (by land use)

Regnl shop. center	2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra GPA-ZTA Option 2.urb924

Project Name: HB Bella Terra EIR - GPA - ZTA Option 2

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	17.89	164.42	108.36	0.12	40.10	7.39	47.49	8.39	6.80	15.19	18,314.95
2009 TOTALS (lbs/day mitigated)	17.89	164.42	108.36	0.12	20.82	7.39	28.22	4.36	6.80	11.16	18,314.95
2010 TOTALS (lbs/day unmitigated)	10.22	80.80	101.56	0.12	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
2010 TOTALS (lbs/day mitigated)	10.22	80.80	101.56	0.12	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
2011 TOTALS (lbs/day unmitigated)	9.44	73.90	95.30	0.12	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
2011 TOTALS (lbs/day mitigated)	9.44	73.90	95.30	0.12	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
2012 TOTALS (lbs/day unmitigated)	611.74	67.49	89.43	0.12	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
2012 TOTALS (lbs/day mitigated)	550.60	67.49	89.43	0.12	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	31.64	9.28	5.61	0.00	0.02	0.02	11,535.94

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2

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TOTALS (lbs/day, unmitigated)	132.18	189.50	1,465.57	1.59	320.48	61.81	170,112.62

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	163.82	198.78	1,471.18	1.59	320.50	61.83	181,648.56

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	**40.10**	**7.39**	**47.49**	**8.39**	**6.80**	**15.19**	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	40.10	7.39	47.49	8.39	6.80	15.19	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/16/2009 Active Days: 77	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/16/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/17/2009-12/31/2009 Active Days: 76	10.89	87.05	**108.36**	**0.12**	0.50	4.08	4.58	0.18	3.74	3.91	**18,314.95**
Building 09/17/2009-02/15/2012	10.89	87.05	108.36	0.12	0.50	4.08	4.58	0.18	3.74	3.91	18,314.95
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34

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Building Vendor Trips	1.58	19.49	14.42	0.03	0.12	0.80	0.92	0.04	0.73	0.77	3,378.24
Building Worker Trips	2.17	4.09	68.99	0.08	0.38	0.21	0.59	0.14	0.18	0.32	8,120.37
Time Slice 1/1/2010-12/31/2010 Active Days: 261	10.22	80.80	101.56	**0.12**	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
Building 09/17/2009-02/15/2012	10.22	80.80	101.56	0.12	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.47	17.73	13.47	0.03	0.12	0.72	0.84	0.04	0.66	0.70	3,378.15
Building Worker Trips	1.98	3.75	64.22	0.08	0.38	0.21	0.59	0.14	0.18	0.32	8,117.76
Time Slice 1/3/2011-12/30/2011 Active Days: 260	9.44	73.90	95.30	**0.12**	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
Building 09/17/2009-02/15/2012	9.44	73.90	95.30	0.12	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.36	15.95	12.54	0.03	0.12	0.64	0.76	0.04	0.59	0.63	3,378.09
Building Worker Trips	1.81	3.43	59.87	0.08	0.38	0.22	0.60	0.14	0.19	0.32	8,115.79
Time Slice 1/2/2012-2/15/2012 Active Days: 33	8.84	67.49	89.43	**0.12**	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
Building 09/17/2009-02/15/2012	8.84	67.49	89.43	0.12	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
Building Off Road Diesel	5.94	50.16	22.09	0.00	0.00	2.32	2.32	0.00	2.13	2.13	6,816.34
Building Vendor Trips	1.25	14.20	11.62	0.03	0.12	0.57	0.68	0.04	0.52	0.56	3,378.15
Building Worker Trips	1.65	3.13	55.72	0.08	0.38	0.22	0.60	0.14	0.19	0.32	8,114.42
Time Slice 2/16/2012-3/30/2012 Active Days: 32	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Asphalt 02/16/2012-03/30/2012	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.06	34.99	19.74	0.00	0.00	2.57	2.57	0.00	2.36	2.36	3,685.57
Paving On Road Diesel	0.08	1.02	0.38	0.00	0.01	0.04	0.04	0.00	0.04	0.04	178.29
Paving Worker Trips	0.08	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.28
Time Slice 4/2/2012-4/27/2012 Active Days: 20	**611.74**	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67
Coating 04/02/2012-04/27/2012	611.74	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67
Architectural Coating	611.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.33	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67

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Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition
Building Volume Total (cubic feet): 3150000
Building Volume Daily (cubic feet): 34000
On Road Truck Travel (VMT): 629.63
Off-Road Equipment:
2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day
4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 15
Maximum Daily Acreage Disturbed: 2
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 539.09
Off-Road Equipment:
2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day
2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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
2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/16/2009 - Default Trenching Description
Off-Road Equipment:
2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 2/16/2012 - 3/30/2012 - Curb/gutter base paving

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Acres to be Paved: 3.75

Off-Road Equipment:

3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

4 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 8 hours per day

Phase: Building Construction 9/17/2009 - 2/15/2012 - Pile Driving and Building Construction

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00

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Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	20.82	**7.39**	28.22	4.36	**6.80**	11.16	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	20.82	7.39	28.22	4.36	6.80	11.16	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	20.72	0.00	20.72	4.33	0.00	4.33	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/16/2009 Active Days: 77	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/16/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/17/2009-12/31/2009 Active Days: 76	10.89	87.05	**108.36**	**0.12**	0.50	4.08	4.58	0.18	3.74	3.91	**18,314.95**
Building 09/17/2009-02/15/2012	10.89	87.05	108.36	0.12	0.50	4.08	4.58	0.18	3.74	3.91	18,314.95
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.58	19.49	14.42	0.03	0.12	0.80	0.92	0.04	0.73	0.77	3,378.24
Building Worker Trips	2.17	4.09	68.99	0.08	0.38	0.21	0.59	0.14	0.18	0.32	8,120.37
Time Slice 1/1/2010-12/31/2010 Active Days: 261	10.22	80.80	101.56	**0.12**	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
Building 09/17/2009-02/15/2012	10.22	80.80	101.56	0.12	0.50	3.71	4.22	0.18	3.40	3.58	18,312.24
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.47	17.73	13.47	0.03	0.12	0.72	0.84	0.04	0.66	0.70	3,378.15
Building Worker Trips	1.98	3.75	64.22	0.08	0.38	0.21	0.59	0.14	0.18	0.32	8,117.76
Time Slice 1/3/2011-12/30/2011 Active Days: 260	9.44	73.90	95.30	**0.12**	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
Building 09/17/2009-02/15/2012	9.44	73.90	95.30	0.12	0.50	3.39	3.90	0.18	3.10	3.28	18,310.22
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.36	15.95	12.54	0.03	0.12	0.64	0.76	0.04	0.59	0.63	3,378.09

Building Worker Trips	1.81	3.43	59.87	0.08	0.38	0.22	0.60	0.14	0.19	0.32	8,115.79
Time Slice 1/2/2012-2/15/2012 Active Days: 33	8.84	67.49	89.43	**0.12**	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
Building 09/17/2009-02/15/2012	8.84	67.49	89.43	0.12	0.50	3.10	3.60	0.18	2.83	3.01	18,308.91
Building Off Road Diesel	5.94	50.16	22.09	0.00	0.00	2.32	2.32	0.00	2.13	2.13	6,816.34
Building Vendor Trips	1.25	14.20	11.62	0.03	0.12	0.57	0.68	0.04	0.52	0.56	3,378.15
Building Worker Trips	1.65	3.13	55.72	0.08	0.38	0.22	0.60	0.14	0.19	0.32	8,114.42
Time Slice 2/16/2012-3/30/2012 Active Days: 32	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Asphalt 02/16/2012-03/30/2012	5.53	36.16	22.90	0.01	0.03	2.62	2.64	0.01	2.41	2.42	4,268.14
Paving Off-Gas	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	5.06	34.99	19.74	0.00	0.00	2.57	2.57	0.00	2.36	2.36	3,685.57
Paving On Road Diesel	0.08	1.02	0.38	0.00	0.01	0.04	0.04	0.00	0.04	0.04	178.29
Paving Worker Trips	0.08	0.16	2.78	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.28
Time Slice 4/2/2012-4/27/2012 Active Days: 20	550.60	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67
Coating 04/02/2012-04/27/2012	550.60	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67
Architectural Coating	550.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.33	0.62	11.01	0.02	0.08	0.04	0.12	0.03	0.04	0.06	1,603.67

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 4/2/2012 - 4/27/2012 - Coating

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.70	9.28	5.61	0.00	0.02	0.02	11,535.94
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	27.60						
Architectural Coatings	3.34						
TOTALS (lbs/day, unmitigated)	31.64	9.28	5.61	0.00	0.02	0.02	11,535.94

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	20.40	26.90	215.29	0.23	45.63	8.81	24,420.49
Regnl shop. center	111.78	162.60	1,250.28	1.36	274.85	53.00	145,692.13
TOTALS (lbs/day, unmitigated)	132.18	189.50	1,465.57	1.59	320.48	61.81	170,112.62

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

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Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	5.00	4.87	dwelling units	538.00	2,620.06	26,469.94
Regnl shop. center		42.94	1000 sq ft	414.00	17,777.16	159,514.45
					20,397.22	185,984.39

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			

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% of Trips - Commercial (by land use)

Regnl shop. center	2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra Reduced Alternative.urb924

Project Name: HB Bella Terra EIR - Reduced Alternative

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	1.32	11.63	6.48	0.00	1.21	0.54	1.75	0.26	0.50	0.75	1,416.76
2009 TOTALS (tons/year mitigated)	1.32	11.63	6.48	0.00	0.89	0.54	1.44	0.19	0.50	0.69	1,416.76
Percent Reduction	0.00	0.00	0.00	0.00	26.24	0.00	18.13	26.04	0.00	8.82	0.00
2010 TOTALS (tons/year unmitigated)	4.39	10.04	10.78	0.01	0.05	0.46	0.51	0.02	0.42	0.44	2,040.94
2010 TOTALS (tons/year mitigated)	4.08	10.04	10.78	0.01	0.05	0.46	0.51	0.02	0.42	0.44	2,040.94
Percent Reduction	7.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011 TOTALS (tons/year unmitigated)	7.17	6.87	7.68	0.01	0.04	0.32	0.35	0.01	0.29	0.30	1,539.41
2011 TOTALS (tons/year mitigated)	7.17	6.87	7.68	0.01	0.04	0.32	0.35	0.01	0.29	0.30	1,539.41
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	5.50	1.22	1.20	0.00	0.00	0.00	1,522.19

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	10.12	13.33	121.44	0.14	25.55	4.93	14,565.04

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SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	15.62	14.55	122.64	0.14	25.55	4.93	16,087.23

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.32	11.63	6.48	0.00	1.21	0.54	1.75	0.26	0.50	0.75	1,416.76
Demolition 01/01/2009-04/15/2009	0.40	3.78	1.55	0.00	0.54	0.17	0.71	0.11	0.15	0.27	420.61
Fugitive Dust	0.00	0.00	0.00	0.00	1.54	0.00	1.54	0.32	0.00	0.32	0.00
Demo Off Road Diesel	0.34	2.98	1.16	0.00	0.00	0.14	0.14	0.00	0.12	0.12	308.86
Demo On Road Diesel	0.06	0.79	0.29	0.00	0.00	0.03	0.04	0.00	0.03	0.03	100.07
Demo Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.67
Mass Grading 04/16/2009-06/01/2009	0.30	2.71	1.25	0.00	0.66	0.12	0.78	0.14	0.11	0.25	264.47
Mass Grading Dust	0.00	0.00	0.00	0.00	0.66	0.00	0.66	0.14	0.00	0.14	0.00
Mass Grading Off Road Diesel	0.27	2.41	1.08	0.00	0.00	0.11	0.11	0.00	0.10	0.10	219.58
Mass Grading On Road Diesel	0.02	0.30	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.70
Mass Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.19
Trenching 06/02/2009-09/01/2009	0.30	2.55	1.09	0.00	0.00	0.12	0.12	0.00	0.11	0.11	268.85
Trenching Off Road Diesel	0.30	2.54	1.00	0.00	0.00	0.12	0.12	0.00	0.11	0.11	258.58
Trenching Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.27
Asphalt 09/16/2009-10/01/2009	0.04	0.28	0.15	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.39
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.04	0.26	0.12	0.00	0.00	0.02	0.02	0.00	0.02	0.02	22.11
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.43
Building 10/15/2009-09/30/2011	0.28	2.32	2.44	0.00	0.01	0.11	0.12	0.00	0.10	0.10	435.44
Building Off Road Diesel	0.20	1.78	0.70	0.00	0.00	0.09	0.09	0.00	0.08	0.08	190.86
Building Vendor Trips	0.04	0.46	0.33	0.00	0.00	0.02	0.02	0.00	0.02	0.02	78.76

Building Worker Trips	0.04	0.08	1.41	0.00	0.01	0.00	0.01	0.00	0.00	0.01	165.82
2010	4.39	10.04	10.78	0.01	0.05	0.46	0.51	0.02	0.42	0.44	2,040.94
Building 10/15/2009-09/30/2011	1.23	10.03	10.68	0.01	0.05	0.46	0.51	0.02	0.42	0.44	2,029.19
Building Off Road Diesel	0.88	7.74	3.11	0.00	0.00	0.36	0.36	0.00	0.33	0.33	889.53
Building Vendor Trips	0.16	1.94	1.46	0.00	0.01	0.08	0.09	0.00	0.07	0.08	367.07
Building Worker Trips	0.19	0.36	6.11	0.01	0.04	0.02	0.06	0.01	0.02	0.03	772.59
Coating 07/01/2010-09/01/2010	3.16	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
Architectural Coating	3.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
2011	7.17	6.87	7.68	0.01	0.04	0.32	0.35	0.01	0.29	0.30	1,539.41
Building 10/15/2009-09/30/2011	0.85	6.86	7.50	0.01	0.04	0.31	0.35	0.01	0.29	0.30	1,515.91
Building Off Road Diesel	0.61	5.32	2.23	0.00	0.00	0.25	0.25	0.00	0.23	0.23	664.59
Building Vendor Trips	0.11	1.30	1.01	0.00	0.01	0.05	0.06	0.00	0.05	0.05	274.24
Building Worker Trips	0.13	0.24	4.26	0.01	0.03	0.02	0.04	0.01	0.01	0.02	577.08
Coating 01/03/2011-06/01/2011	3.16	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
Architectural Coating	3.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
Coating 09/12/2011-12/30/2011	3.16	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
Architectural Coating	3.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75

Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition

Building Volume Total (cubic feet): 3150000

Building Volume Daily (cubic feet): 34000

On Road Truck Travel (VMT): 629.63

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day

4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

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Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description
Total Acres Disturbed: 15
Maximum Daily Acreage Disturbed: 2
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 539.09
Off-Road Equipment:
2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day
2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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
2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/1/2009 - Default Trenching Description
Off-Road Equipment:
2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day
3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 9/16/2009 - 10/1/2009 - Curb/gutter base paving
Acres to be Paved: 3.75
Off-Road Equipment:
3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
4 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 8 hours per day

Phase: Building Construction 10/15/2009 - 9/30/2011 - Pile Driving and Building Construction
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

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4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 7/1/2010 - 9/1/2010 - Coating Block 4

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Phase: Architectural Coating 1/3/2011 - 6/1/2011 - Coating Block 2, 3 and 4R

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Phase: Architectural Coating 9/12/2011 - 12/30/2011 - Coating Block 5

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009	1.32	11.63	6.48	0.00	0.89	0.54	1.44	0.19	0.50	0.69	1,416.76

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Demolition 01/01/2009-04/15/2009	0.40	3.78	1.55	0.00	0.54	0.17	0.71	0.11	0.15	0.27	420.61
Fugitive Dust	0.00	0.00	0.00	0.00	1.54	0.00	1.54	0.32	0.00	0.32	0.00
Demo Off Road Diesel	0.34	2.98	1.16	0.00	0.00	0.14	0.14	0.00	0.12	0.12	308.86
Demo On Road Diesel	0.06	0.79	0.29	0.00	0.00	0.03	0.04	0.00	0.03	0.03	100.07
Demo Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.67
Mass Grading 04/16/2009-06/01/2009	0.30	2.71	1.25	0.00	0.34	0.12	0.47	0.07	0.11	0.18	264.47
Mass Grading Dust	0.00	0.00	0.00	0.00	0.34	0.00	0.34	0.07	0.00	0.07	0.00
Mass Grading Off Road Diesel	0.27	2.41	1.08	0.00	0.00	0.11	0.11	0.00	0.10	0.10	219.58
Mass Grading On Road Diesel	0.02	0.30	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	37.70
Mass Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.19
Trenching 06/02/2009-09/01/2009	0.30	2.55	1.09	0.00	0.00	0.12	0.12	0.00	0.11	0.11	268.85
Trenching Off Road Diesel	0.30	2.54	1.00	0.00	0.00	0.12	0.12	0.00	0.11	0.11	258.58
Trenching Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.27
Asphalt 09/16/2009-10/01/2009	0.04	0.28	0.15	0.00	0.00	0.02	0.02	0.00	0.02	0.02	27.39
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.04	0.26	0.12	0.00	0.00	0.02	0.02	0.00	0.02	0.02	22.11
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.85
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.43
Building 10/15/2009-09/30/2011	0.28	2.32	2.44	0.00	0.01	0.11	0.12	0.00	0.10	0.10	435.44
Building Off Road Diesel	0.20	1.78	0.70	0.00	0.00	0.09	0.09	0.00	0.08	0.08	190.86
Building Vendor Trips	0.04	0.46	0.33	0.00	0.00	0.02	0.02	0.00	0.02	0.02	78.76
Building Worker Trips	0.04	0.08	1.41	0.00	0.01	0.00	0.01	0.00	0.00	0.01	165.82
2010	4.08	10.04	10.78	0.01	0.05	0.46	0.51	0.02	0.42	0.44	2,040.94
Building 10/15/2009-09/30/2011	1.23	10.03	10.68	0.01	0.05	0.46	0.51	0.02	0.42	0.44	2,029.19
Building Off Road Diesel	0.88	7.74	3.11	0.00	0.00	0.36	0.36	0.00	0.33	0.33	889.53
Building Vendor Trips	0.16	1.94	1.46	0.00	0.01	0.08	0.09	0.00	0.07	0.08	367.07
Building Worker Trips	0.19	0.36	6.11	0.01	0.04	0.02	0.06	0.01	0.02	0.03	772.59
Coating 07/01/2010-09/01/2010	2.85	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
Architectural Coating	2.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Coating Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
2011	7.17	6.87	7.68	0.01	0.04	0.32	0.35	0.01	0.29	0.30	1,539.41
Building 10/15/2009-09/30/2011	0.85	6.86	7.50	0.01	0.04	0.31	0.35	0.01	0.29	0.30	1,515.91
Building Off Road Diesel	0.61	5.32	2.23	0.00	0.00	0.25	0.25	0.00	0.23	0.23	664.59
Building Vendor Trips	0.11	1.30	1.01	0.00	0.01	0.05	0.06	0.00	0.05	0.05	274.24
Building Worker Trips	0.13	0.24	4.26	0.01	0.03	0.02	0.04	0.01	0.01	0.02	577.08
Coating 01/03/2011-06/01/2011	3.16	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
Architectural Coating	3.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
Coating 09/12/2011-12/30/2011	3.16	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75
Architectural Coating	3.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.75

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 7/1/2010 - 9/1/2010 - Coating Block 4

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.09	1.21	0.61	0.00	0.00	0.00	1,521.19
Hearth							

Landscape	0.05	0.01	0.59	0.00	0.00	0.00	1.00
Consumer Products	5.04						
Architectural Coatings	0.32						
TOTALS (tons/year, unmitigated)	5.50	1.22	1.20	0.00	0.00	0.00	1,522.19

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	3.85	4.59	43.09	0.05	8.82	1.70	5,058.63
Regnl shop. center	6.27	8.74	78.35	0.09	16.73	3.23	9,506.41
TOTALS (tons/year, unmitigated)	10.12	13.33	121.44	0.14	25.55	4.93	14,565.04

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	7.50	5.16	dwelling units	538.00	2,776.08	28,046.18
Regnl shop. center		42.94	1000 sq ft	138.08	5,929.16	53,202.31
					8,705.24	81,248.49

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2

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Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra Reduced Alternative.urb924

Project Name: HB Bella Terra EIR - Reduced Alternative

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	17.89	164.42	87.21	0.09	40.10	7.39	47.49	8.39	6.80	15.19	16,028.64
2009 TOTALS (lbs/day mitigated)	17.89	164.42	87.21	0.09	20.82	7.39	28.22	4.36	6.80	11.16	16,028.64
2010 TOTALS (lbs/day unmitigated)	149.96	77.13	86.00	0.09	0.40	3.55	3.96	0.14	3.25	3.40	16,071.59
2010 TOTALS (lbs/day mitigated)	135.93	77.13	86.00	0.09	0.40	3.55	3.96	0.14	3.25	3.40	16,071.59
2011 TOTALS (lbs/day unmitigated)	87.76	70.49	79.11	0.09	0.39	3.24	3.63	0.14	2.96	3.10	15,841.54
2011 TOTALS (lbs/day mitigated)	87.76	70.49	79.11	0.09	0.39	3.24	3.63	0.14	2.96	3.10	15,841.54

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	30.09	6.65	6.58	0.00	0.02	0.02	8,340.77

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	53.82	68.22	675.64	0.84	140.02	27.02	82,479.21

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

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	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	83.91	74.87	682.22	0.84	140.04	27.04	90,819.98

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	**40.10**	**7.39**	**47.49**	**8.39**	**6.80**	**15.19**	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	40.10	7.39	47.49	8.39	6.80	15.19	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/1/2009 Active Days: 66	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/01/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/16/2009-10/1/2009 Active Days: 12	7.39	46.51	25.58	0.01	0.03	3.30	3.34	0.01	3.04	3.05	4,565.59
Asphalt 09/16/2009-10/01/2009	7.39	46.51	25.58	0.01	0.03	3.30	3.34	0.01	3.04	3.05	4,565.59
Paving Off-Gas	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	6.19	42.55	20.77	0.00	0.00	3.14	3.14	0.00	2.89	2.89	3,685.57
Paving On Road Diesel	0.27	3.76	1.37	0.00	0.02	0.15	0.17	0.01	0.14	0.14	475.45

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Paving Worker Trips	0.11	0.20	3.44	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.57
Time Slice 10/15/2009-12/31/2009 Active Days: 56	10.04	82.75	**87.21**	0.09	0.38	3.89	4.27	0.13	3.57	3.70	15,551.30
Building 10/15/2009-09/30/2011	10.04	82.75	87.21	0.09	0.38	3.89	4.27	0.13	3.57	3.70	15,551.30
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.32	16.30	11.95	0.03	0.10	0.67	0.77	0.03	0.61	0.65	2,812.85
Building Worker Trips	1.58	2.98	50.32	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,922.12
Time Slice 1/1/2010-6/30/2010 Active Days: 129	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Time Slice 7/1/2010-9/1/2010 Active Days: 45	**149.96**	77.13	86.00	**0.09**	0.40	3.55	3.96	0.14	3.25	3.40	**16,071.59**
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Coating 07/01/2010-09/01/2010	140.52	0.24	4.13	0.01	0.02	0.01	0.04	0.01	0.01	0.02	522.28
Architectural Coating	140.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.13	0.24	4.13	0.01	0.02	0.01	0.04	0.01	0.01	0.02	522.28
Time Slice 9/2/2010-12/31/2010 Active Days: 87	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Time Slice 1/3/2011-6/1/2011 Active Days: 108	67.27	70.46	78.55	0.09	0.39	3.24	3.62	0.14	2.96	3.10	15,765.39
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34

Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Coating 01/03/2011-06/01/2011	58.55	0.09	1.61	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.56
Architectural Coating	58.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.61	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.56
Time Slice 6/2/2011-9/9/2011 Active Days: 72	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Time Slice 9/12/2011-9/30/2011 Active Days: 15	87.76	70.49	79.11	0.09	0.39	3.24	3.63	0.14	2.96	3.10	15,841.54
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Coating 09/12/2011-12/30/2011	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Architectural Coating	78.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Time Slice 10/3/2011-12/30/2011 Active Days: 65	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Coating 09/12/2011-12/30/2011	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Architectural Coating	78.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71

Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition

Building Volume Total (cubic feet): 3150000

Building Volume Daily (cubic feet): 34000

On Road Truck Travel (VMT): 629.63

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Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day

4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 15

Maximum Daily Acreage Disturbed: 2

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 539.09

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/1/2009 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 9/16/2009 - 10/1/2009 - Curb/gutter base paving

Acres to be Paved: 3.75

Off-Road Equipment:

3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

4 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 8 hours per day

Phase: Building Construction 10/15/2009 - 9/30/2011 - Pile Driving and Building Construction

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 7/1/2010 - 9/1/2010 - Coating Block 4

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Phase: Architectural Coating 1/3/2011 - 6/1/2011 - Coating Block 2, 3 and 4R

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Phase: Architectural Coating 9/12/2011 - 12/30/2011 - Coating Block 5

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	20.82	**7.39**	28.22	4.36	**6.80**	11.16	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	20.82	7.39	28.22	4.36	6.80	11.16	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	20.72	0.00	20.72	4.33	0.00	4.33	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/1/2009 Active Days: 66	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/01/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/16/2009-10/1/2009 Active Days: 12	7.39	46.51	25.58	0.01	0.03	3.30	3.34	0.01	3.04	3.05	4,565.59
Asphalt 09/16/2009-10/01/2009	7.39	46.51	25.58	0.01	0.03	3.30	3.34	0.01	3.04	3.05	4,565.59
Paving Off-Gas	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	6.19	42.55	20.77	0.00	0.00	3.14	3.14	0.00	2.89	2.89	3,685.57
Paving On Road Diesel	0.27	3.76	1.37	0.00	0.02	0.15	0.17	0.01	0.14	0.14	475.45

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Paving Worker Trips	0.11	0.20	3.44	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.57
Time Slice 10/15/2009-12/31/2009 Active Days: 56	10.04	82.75	**87.21**	0.09	0.38	3.89	4.27	0.13	3.57	3.70	15,551.30
Building 10/15/2009-09/30/2011	10.04	82.75	87.21	0.09	0.38	3.89	4.27	0.13	3.57	3.70	15,551.30
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.32	16.30	11.95	0.03	0.10	0.67	0.77	0.03	0.61	0.65	2,812.85
Building Worker Trips	1.58	2.98	50.32	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,922.12
Time Slice 1/1/2010-6/30/2010 Active Days: 129	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Time Slice 7/1/2010-9/1/2010 Active Days: 45	135.93	77.13	86.00	**0.09**	0.40	3.55	3.96	0.14	3.25	3.40	**16,071.59**
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Coating 07/01/2010-09/01/2010	126.48	0.24	4.13	0.01	0.02	0.01	0.04	0.01	0.01	0.02	522.28
Architectural Coating	126.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.13	0.24	4.13	0.01	0.02	0.01	0.04	0.01	0.01	0.02	522.28
Time Slice 9/2/2010-12/31/2010 Active Days: 87	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Time Slice 1/3/2011-6/1/2011 Active Days: 108	67.27	70.46	78.55	0.09	0.39	3.24	3.62	0.14	2.96	3.10	15,765.39
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34

Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Coating 01/03/2011-06/01/2011	58.55	0.09	1.61	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.56
Architectural Coating	58.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.61	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.56
Time Slice 6/2/2011-9/9/2011 Active Days: 72	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Time Slice 9/12/2011-9/30/2011 Active Days: 15	87.76	70.49	79.11	0.09	0.39	3.24	3.63	0.14	2.96	3.10	15,841.54
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Coating 09/12/2011-12/30/2011	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Architectural Coating	78.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Time Slice 10/3/2011-12/30/2011 Active Days: 65	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Coating 09/12/2011-12/30/2011	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Architectural Coating	78.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 7/1/2010 - 9/1/2010 - Coating Block 4

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For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%
For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%
For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%
For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.50	6.61	3.37	0.00	0.01	0.01	8,335.27
Hearth							
Landscape	0.26	0.04	3.21	0.00	0.01	0.01	5.50
Consumer Products	27.60						
Architectural Coatings	1.73						
TOTALS (lbs/day, unmitigated)	30.09	6.65	6.58	0.00	0.02	0.02	8,340.77

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	20.89	23.48	240.14	0.29	48.35	9.34	28,640.47
Regnl shop. center	32.93	44.74	435.50	0.55	91.67	17.68	53,838.74
TOTALS (lbs/day, unmitigated)	53.82	68.22	675.64	0.84	140.02	27.02	82,479.21

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Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	7.50	5.16	dwelling units	538.00	2,776.08	28,046.18
Regnl shop. center		42.94	1000 sq ft	138.08	5,929.16	53,202.31
					8,705.24	81,248.49

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

Residential	Commercial

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	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Users\0D2120000+\0D2138300 HB Bella Terra EIR\AQ Data\Bella Terra Reduced Alternative.urb924

Project Name: HB Bella Terra EIR - Reduced Alternative

Project Location: Orange County

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	17.89	164.42	87.21	0.09	40.10	7.39	47.49	8.39	6.80	15.19	16,028.64
2009 TOTALS (lbs/day mitigated)	17.89	164.42	87.21	0.09	20.82	7.39	28.22	4.36	6.80	11.16	16,028.64
2010 TOTALS (lbs/day unmitigated)	149.96	77.13	86.00	0.09	0.40	3.55	3.96	0.14	3.25	3.40	16,071.59
2010 TOTALS (lbs/day mitigated)	135.93	77.13	86.00	0.09	0.40	3.55	3.96	0.14	3.25	3.40	16,071.59
2011 TOTALS (lbs/day unmitigated)	87.76	70.49	79.11	0.09	0.39	3.24	3.63	0.14	2.96	3.10	15,841.54
2011 TOTALS (lbs/day mitigated)	87.76	70.49	79.11	0.09	0.39	3.24	3.63	0.14	2.96	3.10	15,841.54

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	29.83	6.61	3.37	0.00	0.01	0.01	8,335.27

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	58.80	82.73	645.11	0.70	140.02	27.02	74,466.89

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

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	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	88.63	89.34	648.48	0.70	140.03	27.03	82,802.16

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	**40.10**	**7.39**	**47.49**	**8.39**	**6.80**	**15.19**	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	40.10	7.39	47.49	8.39	6.80	15.19	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/1/2009 Active Days: 66	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/01/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/16/2009-10/1/2009 Active Days: 12	7.39	46.51	25.58	0.01	0.03	3.30	3.34	0.01	3.04	3.05	4,565.59
Asphalt 09/16/2009-10/01/2009	7.39	46.51	25.58	0.01	0.03	3.30	3.34	0.01	3.04	3.05	4,565.59
Paving Off-Gas	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	6.19	42.55	20.77	0.00	0.00	3.14	3.14	0.00	2.89	2.89	3,685.57
Paving On Road Diesel	0.27	3.76	1.37	0.00	0.02	0.15	0.17	0.01	0.14	0.14	475.45

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Paving Worker Trips	0.11	0.20	3.44	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.57
Time Slice 10/15/2009-12/31/2009 Active Days: 56	10.04	82.75	**87.21**	0.09	0.38	3.89	4.27	0.13	3.57	3.70	15,551.30
Building 10/15/2009-09/30/2011	10.04	82.75	87.21	0.09	0.38	3.89	4.27	0.13	3.57	3.70	15,551.30
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.32	16.30	11.95	0.03	0.10	0.67	0.77	0.03	0.61	0.65	2,812.85
Building Worker Trips	1.58	2.98	50.32	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,922.12
Time Slice 1/1/2010-6/30/2010 Active Days: 129	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Time Slice 7/1/2010-9/1/2010 Active Days: 45	**149.96**	77.13	86.00	**0.09**	0.40	3.55	3.96	0.14	3.25	3.40	**16,071.59**
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Coating 07/01/2010-09/01/2010	140.52	0.24	4.13	0.01	0.02	0.01	0.04	0.01	0.01	0.02	522.28
Architectural Coating	140.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.13	0.24	4.13	0.01	0.02	0.01	0.04	0.01	0.01	0.02	522.28
Time Slice 9/2/2010-12/31/2010 Active Days: 87	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Time Slice 1/3/2011-6/1/2011 Active Days: 108	67.27	70.46	78.55	0.09	0.39	3.24	3.62	0.14	2.96	3.10	15,765.39
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34

Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Coating 01/03/2011-06/01/2011	58.55	0.09	1.61	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.56
Architectural Coating	58.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.61	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.56
Time Slice 6/2/2011-9/9/2011 Active Days: 72	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Time Slice 9/12/2011-9/30/2011 Active Days: 15	87.76	70.49	79.11	0.09	0.39	3.24	3.63	0.14	2.96	3.10	15,841.54
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Coating 09/12/2011-12/30/2011	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Architectural Coating	78.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Time Slice 10/3/2011-12/30/2011 Active Days: 65	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Coating 09/12/2011-12/30/2011	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Architectural Coating	78.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71

Phase Assumptions

Phase: Demolition 1/1/2009 - 4/15/2009 - Abatement and Demolition

Building Volume Total (cubic feet): 3150000

Building Volume Daily (cubic feet): 34000

On Road Truck Travel (VMT): 629.63

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Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 4 hours per day

4 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 15

Maximum Daily Acreage Disturbed: 2

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 539.09

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 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

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/2/2009 - 9/1/2009 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

3 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 9/16/2009 - 10/1/2009 - Curb/gutter base paving

Acres to be Paved: 3.75

Off-Road Equipment:

3 Cement and Mortar Mixers (10 hp) operating at a 0.56 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 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

4 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 8 hours per day

Phase: Building Construction 10/15/2009 - 9/30/2011 - Pile Driving and Building Construction

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

2 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

3 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 7/1/2010 - 9/1/2010 - Coating Block 4

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Phase: Architectural Coating 1/3/2011 - 6/1/2011 - Coating Block 2, 3 and 4R

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Phase: Architectural Coating 9/12/2011 - 12/30/2011 - Coating Block 5

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2009-4/15/2009 Active Days: 75	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Demolition 01/01/2009-04/15/2009	10.67	100.68	41.29	0.03	14.38	4.47	18.86	3.00	4.11	7.12	11,216.20
Fugitive Dust	0.00	0.00	0.00	0.00	14.28	0.00	14.28	2.97	0.00	2.97	0.00
Demo Off Road Diesel	9.07	79.44	30.93	0.00	0.00	3.61	3.61	0.00	3.32	3.32	8,236.36
Demo On Road Diesel	1.51	21.09	7.71	0.02	0.09	0.85	0.94	0.03	0.78	0.81	2,668.62
Demo Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 4/16/2009-6/1/2009 Active Days: 33	17.89	**164.42**	75.57	0.03	20.82	**7.39**	28.22	4.36	**6.80**	11.16	16,028.64
Mass Grading 04/16/2009-06/01/2009	17.89	164.42	75.57	0.03	20.82	7.39	28.22	4.36	6.80	11.16	16,028.64
Mass Grading Dust	0.00	0.00	0.00	0.00	20.72	0.00	20.72	4.33	0.00	4.33	0.00
Mass Grading Off Road Diesel	16.47	146.14	65.27	0.00	0.00	6.65	6.65	0.00	6.12	6.12	13,308.06
Mass Grading On Road Diesel	1.30	18.06	6.60	0.02	0.08	0.73	0.81	0.02	0.67	0.70	2,284.88
Mass Grading Worker Trips	0.12	0.22	3.70	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.70
Time Slice 6/2/2009-9/1/2009 Active Days: 66	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching 06/02/2009-09/01/2009	9.09	77.19	32.92	0.00	0.01	3.74	3.75	0.01	3.44	3.44	8,147.11
Trenching Off Road Diesel	9.01	77.04	30.27	0.00	0.00	3.73	3.73	0.00	3.43	3.43	7,835.90
Trenching Worker Trips	0.08	0.16	2.64	0.00	0.01	0.01	0.02	0.01	0.01	0.01	311.21
Time Slice 9/16/2009-10/1/2009 Active Days: 12	7.39	46.51	25.58	0.01	0.03	3.30	3.34	0.01	3.04	3.05	4,565.59
Asphalt 09/16/2009-10/01/2009	7.39	46.51	25.58	0.01	0.03	3.30	3.34	0.01	3.04	3.05	4,565.59
Paving Off-Gas	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	6.19	42.55	20.77	0.00	0.00	3.14	3.14	0.00	2.89	2.89	3,685.57
Paving On Road Diesel	0.27	3.76	1.37	0.00	0.02	0.15	0.17	0.01	0.14	0.14	475.45

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Paving Worker Trips	0.11	0.20	3.44	0.00	0.02	0.01	0.03	0.01	0.01	0.02	404.57
Time Slice 10/15/2009-12/31/2009 Active Days: 56	10.04	82.75	**87.21**	0.09	0.38	3.89	4.27	0.13	3.57	3.70	15,551.30
Building 10/15/2009-09/30/2011	10.04	82.75	87.21	0.09	0.38	3.89	4.27	0.13	3.57	3.70	15,551.30
Building Off Road Diesel	7.14	63.46	24.94	0.00	0.00	3.07	3.07	0.00	2.82	2.82	6,816.34
Building Vendor Trips	1.32	16.30	11.95	0.03	0.10	0.67	0.77	0.03	0.61	0.65	2,812.85
Building Worker Trips	1.58	2.98	50.32	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,922.12
Time Slice 1/1/2010-6/30/2010 Active Days: 129	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Time Slice 7/1/2010-9/1/2010 Active Days: 45	135.93	77.13	86.00	**0.09**	0.40	3.55	3.96	0.14	3.25	3.40	**16,071.59**
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Coating 07/01/2010-09/01/2010	126.48	0.24	4.13	0.01	0.02	0.01	0.04	0.01	0.01	0.02	522.28
Architectural Coating	126.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.13	0.24	4.13	0.01	0.02	0.01	0.04	0.01	0.01	0.02	522.28
Time Slice 9/2/2010-12/31/2010 Active Days: 87	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building 10/15/2009-09/30/2011	9.44	76.89	81.86	0.09	0.38	3.54	3.92	0.13	3.24	3.38	15,549.31
Building Off Road Diesel	6.77	59.32	23.86	0.00	0.00	2.79	2.79	0.00	2.56	2.56	6,816.34
Building Vendor Trips	1.23	14.83	11.16	0.03	0.10	0.60	0.70	0.03	0.55	0.58	2,812.77
Building Worker Trips	1.44	2.73	46.84	0.06	0.28	0.15	0.43	0.10	0.13	0.23	5,920.21
Time Slice 1/3/2011-6/1/2011 Active Days: 108	67.27	70.46	78.55	0.09	0.39	3.24	3.62	0.14	2.96	3.10	15,765.39
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34

Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Coating 01/03/2011-06/01/2011	58.55	0.09	1.61	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.56
Architectural Coating	58.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.61	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.56
Time Slice 6/2/2011-9/9/2011 Active Days: 72	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Time Slice 9/12/2011-9/30/2011 Active Days: 15	87.76	70.49	79.11	0.09	0.39	3.24	3.63	0.14	2.96	3.10	15,841.54
Building 10/15/2009-09/30/2011	8.72	70.37	76.94	0.09	0.38	3.23	3.61	0.13	2.96	3.09	15,547.83
Building Off Road Diesel	6.27	54.53	22.89	0.00	0.00	2.53	2.53	0.00	2.33	2.33	6,816.34
Building Vendor Trips	1.13	13.34	10.39	0.03	0.10	0.54	0.63	0.03	0.49	0.52	2,812.72
Building Worker Trips	1.32	2.50	43.67	0.06	0.28	0.16	0.44	0.10	0.14	0.24	5,918.78
Coating 09/12/2011-12/30/2011	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Architectural Coating	78.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Time Slice 10/3/2011-12/30/2011 Active Days: 65	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Coating 09/12/2011-12/30/2011	79.04	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71
Architectural Coating	78.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.07	0.12	2.17	0.00	0.01	0.01	0.02	0.01	0.01	0.01	293.71

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 4/16/2009 - 6/1/2009 - Default Mass Site Grading/Excavation Description

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

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Architectural Coating 7/1/2010 - 9/1/2010 - Coating Block 4

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For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%
For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%
For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%
For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:
ROG: 10%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.50	6.61	3.37	0.00	0.01	0.01	8,335.27
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	27.60						
Architectural Coatings	1.73						
TOTALS (lbs/day, unmitigated)	29.83	6.61	3.37	0.00	0.01	0.01	8,335.27

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Apartments high rise	21.52	28.50	228.11	0.24	48.35	9.34	25,874.69
Regnl shop. center	37.28	54.23	417.00	0.46	91.67	17.68	48,592.20
TOTALS (lbs/day, unmitigated)	58.80	82.73	645.11	0.70	140.02	27.02	74,466.89

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Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Temperature (F): 60 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments high rise	7.50	5.16	dwelling units	538.00	2,776.08	28,046.18
Regnl shop. center		42.94	1000 sq ft	138.08	5,929.16	53,202.31
					8,705.24	81,248.49

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.2	0.6	99.2	0.2
Light Truck < 3750 lbs	7.0	1.4	95.7	2.9
Light Truck 3751-5750 lbs	24.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	2.9	58.6	41.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

Residential	Commercial

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	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

Operational Changes to Defaults