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HUNTINGTON BEACH WALMART
CLIMATE CHANGE ANALYSIS
CITY OF HUNTINGTON BEACH, CALIFORNIA

May 11, 2011

JN:07426-06
HQ:AE

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The purpose of this climate change analysis is to evaluate the potential climate change impacts associated with the development (i.e. construction and operations) of the proposed project.

1.2 Site Location

The project proposes to occupy an existing 100,865 square foot vacant retail building originally occupied by a Home Depot and later converted to an Expo Design Center[1]. No changes to the shopping center or the building footprint are proposed. The shopping center contains commercial and office buildings occupied by a variety of uses including restaurants, a Smart & Final, dental offices and small specialty retail shops. The project is located at the southwest corner of Goldenwest Street and Edinger Avenue in the City of Huntington Beach as shown on Exhibit1-1 and the project Site Plan is shown on Exhibit 1-2.

1.3 Specific Plan EIR Mitigation Measures

The project is required to comply with the following mitigation measures as outlined in the *Beach Boulevard and Edinger Avenue Corridor Specific Plan*, approved by the Huntington Beach City Council March 1, 2010.

MM4.15-1 *The City shall require by contract specifications that all diesel-powered equipment used would be retrofitted with after-treatment products (e.g., engine catalysts and other technologies available at the time construction commences) to the extent that they are readily available and cost effective when construction activities commence. Contract specifications shall be included in the proposed*

[1] For analysis purposes in this report, the 1990 Scenario is based on the use for the building at that time, which was a Home Depot Store as identified in CUP 90-59 and CUP 88-45.

EXHIBIT 1-1

REGIONAL LOCATION MAP

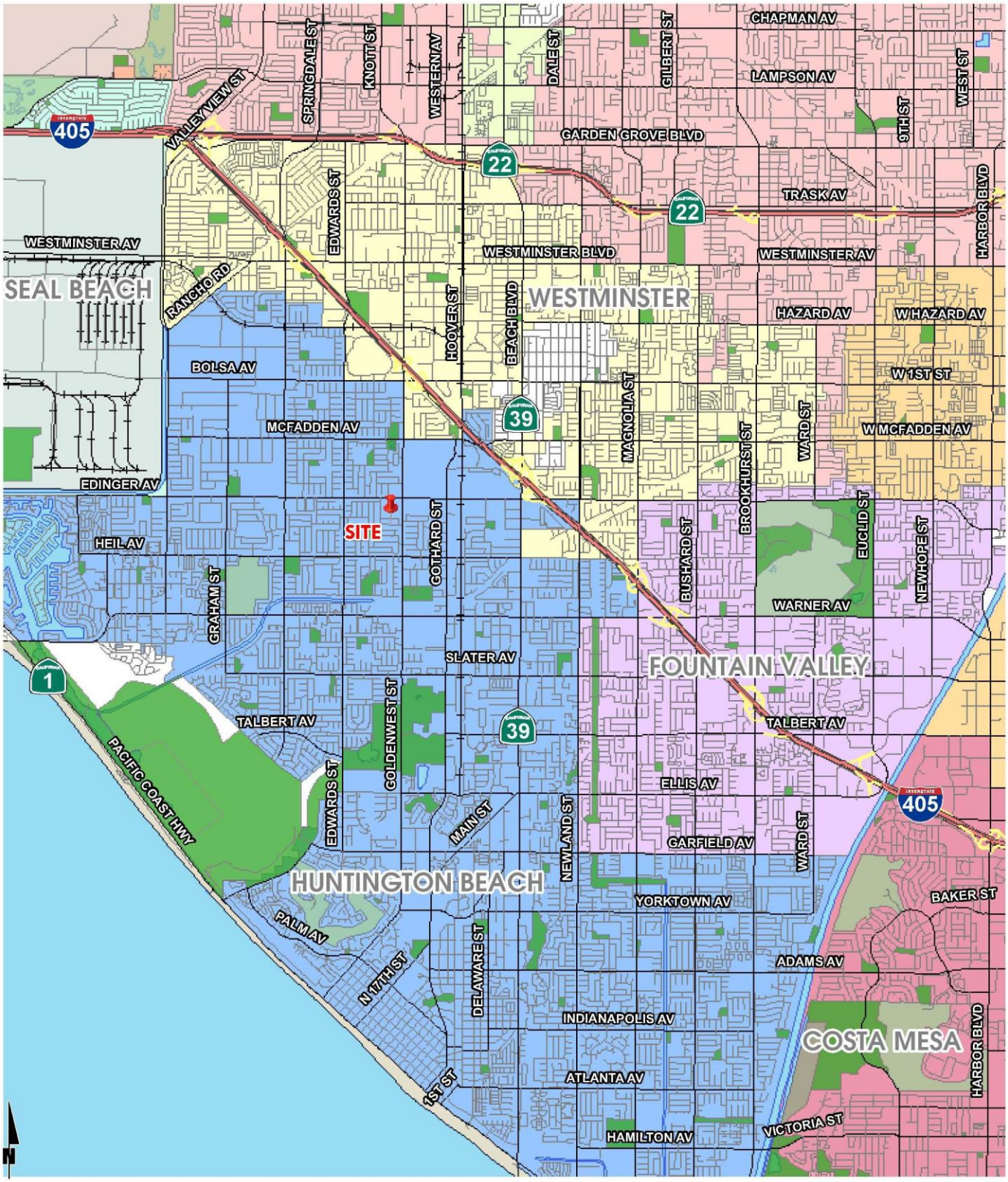
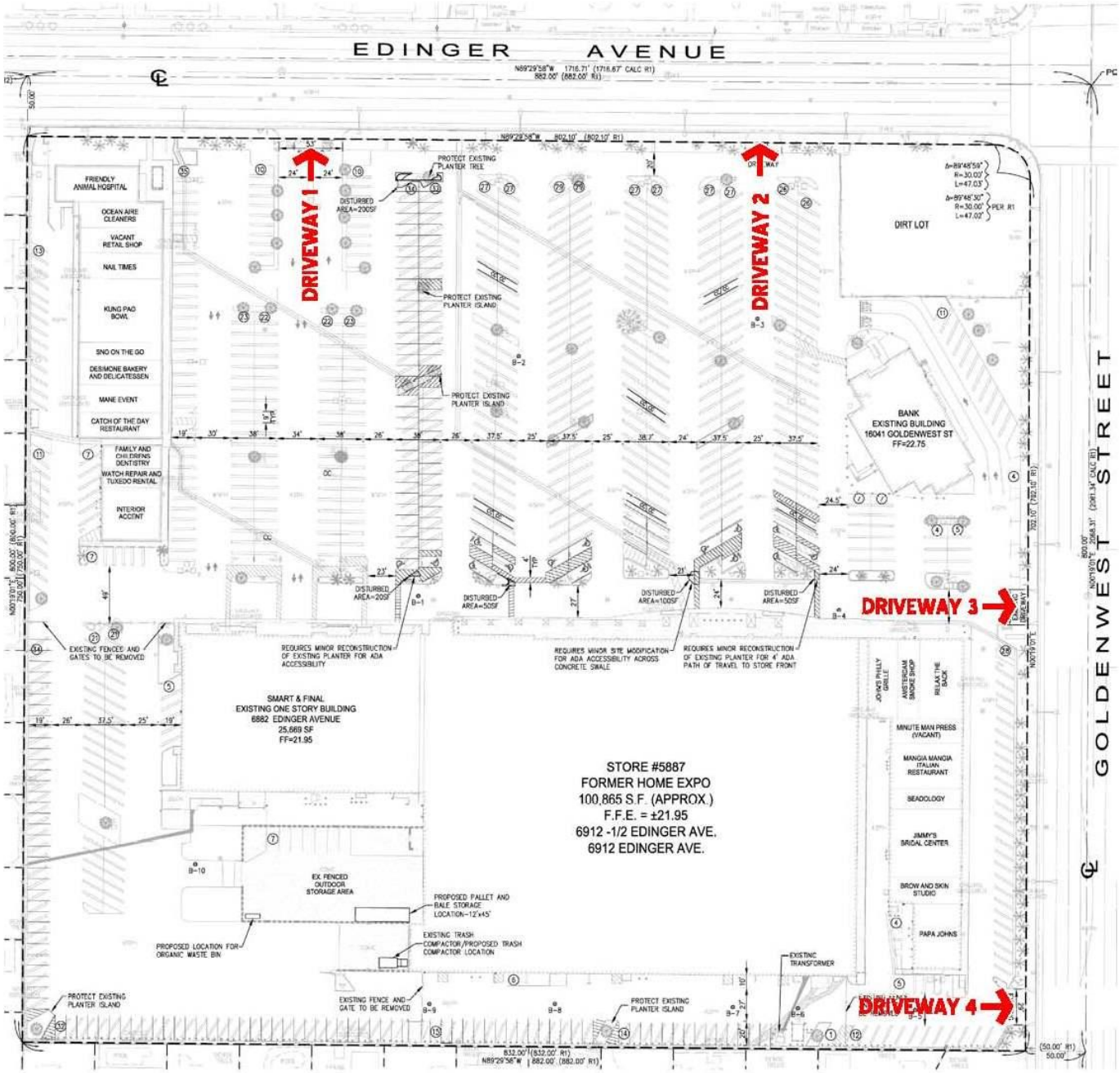


EXHIBIT 1-2

SITE PLAN



project construction documents, which shall be approved by the City of Huntington Beach.

MM4.15-2 *The City shall require by contract specifications that alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) would be utilized to the extent feasible at the time construction activities commence. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Huntington Beach.*

MM4.15-3 *The City shall require that developers within the project site use locally available building materials, such as concrete, stucco, and interior finishes, for construction of the project and associated infrastructure.*

MM4.15-4 *The City shall require developers within the project site to establish a construction management plan with Rainbow Disposal to divert a target of 50 percent of construction, demolition, and site clearing waste.*

MM4.15-5 *The City shall require by contract specifications that construction equipment engines will be maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Huntington Beach.*

MM4.15-6 *The City shall require by contract specifications that construction-related equipment, including heavyduty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than five minutes. Diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds shall be turned off when not in use for more than five minutes. Contract specifications shall be included in the proposed project construction documents, which shall be approved by the City of Huntington Beach.*

MM4.15-7 *The City shall require that any new development within the Specific Plan area provide signs within loading dock areas clearly visible to truck drivers. These signs shall state that trucks cannot idle in excess of five minutes per trip.*

MM4.15-8 *The City shall require by contract specifications that electrical outlets are included in the building design of future loading docks to allow use by refrigerated delivery trucks. Future project-specific Applicants 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.*

MM4.15-9 *The City shall require that any new development within the project site provide a bulletin board or kiosk in the lobby of each proposed structure that identifies the locations and schedules of nearby transit opportunities.*

1.4 Energy Efficiency/Sustainability

General

Energy-saving design features incorporated in the Project, are summarized below. The Project in total will meet or surpass all Title 24 energy code requirements.

Energy and Resource Conservation:

Lighting:

- The entire store will include occupancy sensors in most non-sales areas, including restrooms, break rooms, and offices. The sensors automatically turn the lights off when the space is unoccupied.

- All lighting in the store will consist of by T-8 fluorescent lamps and electronic ballasts, resulting in up to a 15-20 percent reduction in energy load.

- All exterior building signage and many refrigerated food cases will be illuminated with light emitting diodes (LEDs). In refrigerated food cases, LEDs perform well in the cold and produce less heat than fluorescent bulbs – heat which must be compensated for by the refrigeration equipment. LEDs also contain no mercury or lead.

- LED technology is up to 52 percent more energy efficient than fluorescent lights.

- Total estimated energy savings for LED lighting in the store's grocery section is approximately 59,000 kWh per year, enough energy to power five single family homes.

Central Energy Management System:

- Walmart employs a centralized energy management system (EMS) to monitor and control the heating, air conditioning, refrigeration and lighting systems for all stores from Walmart's corporate headquarters in Bentonville, Arkansas. The EMS enables Walmart to constantly monitor and control the expanded store's energy usage, analyze refrigeration temperatures, observe HVAC and lighting performance, and adjust system levels from a central location 24 hours per day, seven days per week. Energy usage for the entire store will be monitored and controlled in this manner.

HVAC:

- The store will employ one of the industry's most efficient heating, ventilating and air-conditioning (HVAC) units available.

Dehumidification:

- The building will include a dehumidifying system that allows Walmart to operate the store at a higher temperature, use less energy, and allow the refrigeration system to operate more efficiently.

White Roofs:

- The store will utilize a white membrane roof instead of the typical darker colored roof materials employed in commercial construction. The white membrane roof's higher reflectivity helps reduce building energy consumption and reduces the heat island effect, as compared to buildings utilizing darker roofing colors.

Refrigeration:

- Walmart uses non ozone-depleting refrigerants. It uses R407a for the refrigeration equipment. For air conditioning, Walmart has converted to R410a refrigerant.

- Refrigeration equipment is typically roof-mounted close to the refrigerated cases. This reduces the amount of copper refrigerant piping, insulation, potential for leaks and refrigerant charge needed.

Heat Reclamation:

- The Walmart store will reclaim waste heat from onsite refrigeration equipment to supply approximately 70% of the hot water needs for the store.

Water Conservation

Walmart will install high-efficiency urinals that use only 1/8 gallon (one pint) of water per flush.

- This fixture reduces water use by 87 percent compared to the conventional one gallon per flush urinal.

- The 1/8 gallon urinal also requires less maintenance than waterless urinals, making this the better option for Walmart.

- All restroom sinks will use sensor-activated 1/2 gallon per minute high-efficiency faucets.
    - These faucets reduce water usage by approximately 75 percent compared to mandated 1992 EPA Standards.
    - During use, water flows through turbines built into the faucets to generate the electricity needed to operate the motion sensors.

- All restroom toilets will be highly efficient and reduce water use.
    - The fixture uses 20 percent less water compared to mandated EPA Standards, of 1.6 gallon per flush fixtures.
    - The toilets utilize built-in water turbines to generate the power required to activate the flush mechanism.
        - These turbines save energy and material by eliminating electrical conduits required to power automatic flush valve sensors.

- It is estimated that Walmart's water conservation measures could save up to 530,000 gallons of water annually at this store.

Materials and Finishes

- Cement Mixes: The store will be built using cement mixes that include 15-20 percent fly ash, a waste product of coal-fired electrical generation, or 25-30 percent slag, a by-product of the steel manufacturing process. By incorporating these waste product materials into its cement mixes, Walmart offsets the greenhouse gases emitted in the cement manufacturing process.

- The store will use Non-Reinforced Thermoplastic Panel (NRP) in lieu of Fiber Reinforced Plastic (FRP) sheets on the walls in areas where plastic sheeting is appropriate, including food preparation areas, utility and janitorial areas, and associate break rooms. NRP can be recycled, has better impact resistance and, like FRP, is easy to keep clean.

- The store will use a plant based oil extracted from a renewable resource as a concrete form release agent (a product sprayed on concrete forms to allow ease of removal after the concrete has set). This release agent is non-petroleum based non-toxic and a biodegradable agent.

- For the store's exterior and interior field paint coatings, Walmart will use low volatile organic compound (VOC) paint.

- Paint products required for the Project will be primarily purchased in 55 gallon drums and 275 gallon totes, reducing the number of one gallon and five gallon buckets needed. These plastic buckets are filled from the drums and totes and then returned to the paint supplier for cleaning and reuse.

Recycled Building Materials:

- Construction of the store will use steel containing approximately 90-98 percent recycled structural steel, which utilizes less energy in the mining and manufacturing process than does new steel.

- All of the plastic baseboards and much of the plastic shelving included will be composed of recycled plastic.

Construction and Demolition (C&D) Recycling:

- Walmart will employ a Construction and Demolition (C&D) program at this location in order to capture and recycle as much of the metals, woods, floor and ceiling tiles, concretes, asphalts and other materials generated as part of Walmart's demolition and construction process as possible. Walmart will work with a waste management company to fully research all available C&D recycling facilities in the area, and its C&D program will seek to include the widest possible range of materials recovery options.

1.5 Summary of Findings

Results of the analysis indicate that the proposed Project will not interfere with the state's goals of reducing greenhouse gas emissions to 1990 levels by the year 2020 as stated in AB 32 and an 80-percent reduction in greenhouse gas emissions below 1990 levels by 2050 as stated in Executive Order S-3-05. Project sustainable design features significantly reduce GHG emissions and are consistent with mitigation strategies developed by groups and public agencies, such as CAT, CAPCOA and the California Attorney General. On this basis, the Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Nor will the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Therefore a less than significant impact is expected with respect to global climate change.

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2.0 GLOBAL CLIMATE CHANGE ANALYSIS

2.1 Introduction to Global Climate Change

Global Climate Change (GCC) is simply defined as the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms. GCC is currently one of the most controversial issues in the United States, and much debate exists within the scientific community whether or not global climate change is occurring naturally or as a result of human activity. Some data suggests that global climate change has occurred in the past over the course of thousands or millions of years. These climate changes occurred naturally without human influence, as in the case of an ice age. However, many scientists believe that the climate shift presently taking place is occurring at a quicker rate and magnitude. Scientific evidence suggests that GCC is the result of increased concentrations of greenhouse gases in the earth's atmosphere, including carbon dioxide, methane, nitrous oxide, and fluorinated gases. Many scientists believe that this increased rate of climate change is the result of greenhouse gases resulting from human activity and industrialization over the past 200 years.

An individual project cannot generate enough greenhouse gas emissions to effect a discernible change in global climate. However, the proposed project may participate in this potential impact by its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases, which when taken together constitute potential influences on GCC. Because these changes may have serious environmental consequences, this section will evaluate the potential for the proposed project to have a significant effect upon California's environment as a result of its potential contribution to the greenhouse effect.

2.2 Greenhouse Gas Emissions Inventories

Global

Worldwide anthropogenic (man-made) GHG emissions are tracked for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Man-made GHG emissions for Annex I nations are available through 2007. Man-made GHG emissions for Non-Annex I nations are available through 2005. The sum of these emissions totaled approximately

42,133 MMTCO2e.[2] It should be noted that global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data.[3] Emissions from the top five countries and the European Union accounted for approximately 55 percent of the total global GHG emissions, according to the most recently available data (see Table 2-1, Top GHG Producer Countries and the European Union). The GHG emissions in more recent years may differ from the inventories presented in Table 2-1; however, the data is representative of currently available inventory data.

United States

As noted in Table 2-1, the United States was the number two producer of GHG emissions. The primary greenhouse gas emitted by human activities in the United States was Carbon Dioxide (CO_2), representing approximately 84 percent of total greenhouse gas emissions. Carbon dioxide from fossil fuel combustion, the largest source of US greenhouse gas emissions, accounted for approximately 80 percent of the GHG emissions.[4]

TABLE 2-1

TOP GHG PRODUCER COUNTRIES AND THE EUROPEAN UNION

Emitting Countries	GHG Emissions ($MMTCO_2e$)
China	7,250
United States	7,217
European Union	5,402
Russian Federation	2,202
India	1,863
Japan	1,412
Total	**25,346**

Source: World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," http://cait.wri.org/. 2010. Excludes emissions and removals from land use, land-use change and forestry (LULUCF).
Note: Emissions for Annex I nations are based on 2007 data. Emissions for Non-Annex I nations (e.g., China, India) are based on 2005 data).

[2] The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2005 data, the UNFCCC data for the most recent year were used. United Nations Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i/items/3841.php and "Flexible GHG Data Queries" with selections for total GHG emissions excluding LULUCF/LUCF, all years, and non-Annex I countries, http://unfccc.int/di/FlexibleQueries/Event.do?event= showProjection. n.d.
[3] US Environmental Protection Agency, "Inventory of US Greenhouse Gas Emissions and Sinks 1990–2006," http://www.epa.gov/climatechange/emissions/usinventoryreport.html. 2008.
[4] US Environmental Protection Agency, "Inventory of US Greenhouse Gas Emissions and Sinks 1990–2006," http://www.epa.gov/climatechange/emissions/usinventoryreport.html. 2008.

State of California

CARB compiles GHG inventories for the State of California. Based upon the 2008 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2008 greenhouse gas emissions inventory, California emitted 474 MMTCO2e ***including*** emissions resulting from imported electrical power in 2008.[5] Based on the CARB inventory data and GHG inventories compiled by the World Resources Institute, California's total statewide GHG emissions rank second in the United States (Texas is number one) with emissions of 417 MMTCO2e ***excluding*** emissions related to imported power.

2.3 Global Climate Change

Global Climate Change (GCC) refers to the change in average meteorological conditions on the earth with respect to temperature, wind patterns, precipitation and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO_2 (Carbon Dioxide), N_2O (Nitrous Oxide), CH_4 (Methane), hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. These particular gases are important due to their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the Earth's atmosphere, but prevent radioactive heat from escaping, thus warming the Earth's atmosphere. GCC can occur naturally as it has in the past with the previous ice ages. According to the California Air Resources Board (CARB), the climate change that is currently in effect differs from previous climate changes in both rate and magnitude (CARB, 2004, Technical Support document for Staff Proposal Regarding Reduction of Greenhouse Gas Emissions from Motor Vehicles).

Gases that trap heat in the atmosphere are often referred to as greenhouse gases. Greenhouse gases are released into the atmosphere by both natural and anthropogenic (human) activity. Without the natural greenhouse gas effect, the Earth's average temperature would be approximately 61° Fahrenheit (F) cooler than it is currently. The cumulative accumulation of these gases in the earth's atmosphere is considered to be the cause for the observed increase in the earth's temperature.

[5] California Air Resources Board, "California Greenhouse Gas 2000-2008 Inventory by Scoping Plan Category - Summary," http://www.arb.ca.gov/cc/inventory/data/data.htm. 2010.

Although California's rate of growth of greenhouse gas emissions is slowing, the state is still a substantial contributor. In 2004, the state is estimated to have produced 492 million gross metric tons of carbon dioxide equivalent greenhouse gas emissions. Despite a population increase of 16 percent between 1990 and 2004, California has significantly slowed the rate of growth of greenhouse gas emissions due to the implementation of energy efficiency programs as well as adoption of strict emission controls.

2.4 Global Climate Change Gases

For the purposes of this analysis, emissions of carbon dioxide, methane, and nitrous oxide were evaluated. Although other substances such as fluorinated gases also contribute to global climate change, sources of fluorinated gases are not well defined and no accepted emissions factors or methodology exist to accurately calculate these gases. The potential for fluorinated gases to result from operation of the proposed project is primarily a concern for hydrochlorofluorocarbons (HCFC) emissions associated with project air conditioning leakage.

Greenhouse gases have varying global warming potential (GWP) values; GWP values represent the potential of a gas to trap heat in the atmosphere. Carbon dioxide is utilized as the reference gas for GWP, and thus has a GWP of 1.

The atmospheric lifetime and GWP of selected greenhouse gases are summarized in the following Table. As shown in the table below, GWP range from 1 for carbon dioxide to 23,900 for sulfur hexafluoride.

TABLE 2-2
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIME OF SELECT GHGS

Gas	Atmospheric Lifetime (years)	Global Warming Potential (100 year time horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140

PFC: Tetrafluoromethane (CH4)	50,000	6,500
PFC: Hexafluoroethane (C2F6)	10,000	9,200
Sulfur Hexafluoride (SF6)	3,200	23,900
Source: EPA 2006 (URL: http://www.epa.gov/nonco2/econ-inv/table.html)		

Water Vapor: Water vapor (H_20) is the most abundant, important, and variable greenhouse gas in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. A climate feedback is an indirect, or secondary, change, either positive or negative, that occurs within the climate system in response to a forcing mechanism. The feedback loop in which water is involved is critically important to projecting future climate change.

As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to 'hold' more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there are also dynamics that hold the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

There are no health effects from water vapor itself; however, when some pollutants come in contact with water vapor, they can dissolve and the water vapor can then act as a pollutant-carrying agent. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include: evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.

Carbon Dioxide: Carbon dioxide (CO_2) is an odorless and colorless GHG. Outdoor levels of carbon dioxide are not high enough to result in negative health effects. Carbon dioxide is emitted from natural and manmade sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include: the burning of coal, oil, natural gas, and wood. Carbon dioxide is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks. In this latter regard, carbonate rocks act as a substantive CO_2 atmospheric sink. For example, carbon dioxide is removed from the atmosphere by dissolving in water and forming carbonic acid; carbonic acid then reacts with carbonate rocks in the chemical weathering process. The products of weathering are predominantly clays (a group of silicate minerals) and soluble ions such as calcium, iron, sodium, and potassium, wherein the former atmospheric CO_2 has been stored.

Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO_2 concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm, an increase of more than 30 percent. Left unchecked, the concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources.

Methane: Methane (CH_4) is an extremely effective absorber of radiation, though its atmospheric concentration is less than carbon dioxide and its lifetime in the atmosphere is brief (10-12 years), compared to other GHGs. No health effects are known to occur from exposure to methane.

Methane has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide: Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause Olney's Lesions (brain damage).

Concentrations of nitrous oxide also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). Nitrous oxide is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant, i.e., in whipped cream bottles. It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. Nitrous oxide can be transported into the stratosphere, be deposited on the Earth's surface, and be converted to other compounds by chemical reaction

Chlorofluorocarbons: Chlorofluorocarbons (CFCs) are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs are no longer being used; therefore, it is not likely that health effects would be experienced. Nonetheless, in confined indoor locations, working with CFC-113 or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation.

CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons: Hydrofluorocarbons (HFCs) are synthetic, man-made chemicals that are used as a substitute for CFCs. Out of all the greenhouse gases, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric

abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were of HFC-23. HFC-134a emissions are increasing due to its use as a refrigerant. The U.S. EPA estimates that concentrations of HFC-23 and HFC-134a are now about 10 parts per trillion (ppt) each; and that concentrations of HFC-152a are about 1 ppt. No health effects are known to result from exposure to HFCs, which are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons: Perfluorocarbons (PFCs) have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur about 60 kilometers above Earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). The U.S. EPA estimates that concentrations of CF_4 in the atmosphere are over 70 ppt.

No health effects are known to result from exposure to PFCs. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur Hexafluoride: Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest GWP of any gas evaluated (23,900). The U.S. EPA indicates that concentrations in the 1990s were about 4 ppt. In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing.

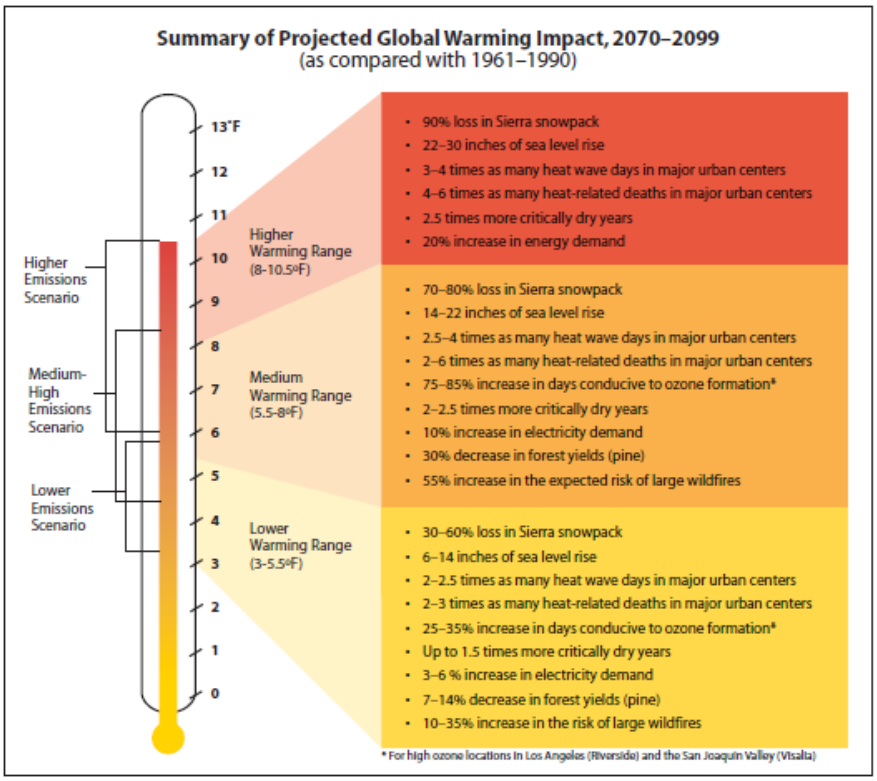
Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

2.5 Health Effects

The potential health effects related directly to the emissions of carbon dioxide, methane, and nitrous oxide as they relate to development projects such as the proposed project are still being debated. Their cumulative effects to global climate change have the potential to cause great harm to human health. Increases in Earth's ambient temperatures would result in more intense heat waves, causing more heat-related deaths. Scientists also fear that higher ambient

temperatures would increase disease survival rates and result in more widespread disease. Climate change will likely cause shifts in weather patterns, potentially resulting in devastating droughts and food shortages in some areas, and increase in sea level rise and/or reduction in water supply in other areas (American Lung Association, 2004). Figure 4 presents the potential impacts of global warming.

Figure 4[6]



The California Environmental Protection Agency (CalEPA) published a report titled "Scenarios of Climate Change in California: An Overview" (Climate Scenarios report) in February 2006 (California Climate Change Center 2006), that while not adequate for a CEQA project-specific or cumulative analysis, is generally instructive about the statewide impacts of global warming.

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

[6] California Energy Commission, 2006. Out Changing Climate, Assessing the Risks to California 2006 Biennial Report.

under each warming range, that while uncertain, present a picture of the impacts of global climate change trends in California.

In addition, most recently on August 5, 2009, the State's Natural Resources Agency released a public review draft of its "California Climate Adaptation Strategy" report that details many vulnerabilities arising from climate change with respect to matters such as temperature extremes, sea level rise, wildfires, floods and droughts and precipitation changes. This report responds to the Governor's Executive Order S-13-2008 that called on state agencies to develop California's strategy to identify and prepare for expected climate impacts. The report was released to the public in draft form for comment and has not yet been finalized.

According to the reports, substantial temperature increases arising from increased GHG emissions potentially could result in a variety of impacts to the people, economy, and environment of California associated with a projected increase in extreme conditions, with the severity of the impacts depending upon actual future emissions of GHGs and associated warming. Under the emissions scenarios of the Climate Scenarios report, the impacts of global warming in California have the potential to include, but are not limited to, the following areas.

Public Health

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

In addition, under the higher warming range scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a large increase over historical patterns and approximately twice the increase projected if

temperatures remain within or below the lower warming range. Rising temperatures could increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

Water Resources

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

If GHG emissions continue unabated, more precipitation could fall as rain instead of snow, and the snow that does fall could melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. Under the lower warming range scenario, snowpack losses could be only half as large as those possible if temperatures were to rise to the higher warming range. How much snowpack could be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snowpack could pose challenges to water managers and hamper hydropower generation. It could also adversely affect winter tourism. Under the lower warming range, the ski season at lower elevations could be reduced by as much as a month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing and snowboarding which can result in an adverse economic impact.

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

Agriculture

Increased GHG emissions could cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. First, California farmers could possibly lose as much as 25 percent of the water supply they need. Although higher CO_2 levels

can stimulate plant production and increase plant water-use efficiency, California's farmers could face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development could change, as could the intensity and frequency of pest and disease outbreaks. Rising temperatures could aggravate Ozone (O_3) pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

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

In addition, continued global climate change could shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion could occur in many species while range contractions may be less likely in rapidly evolving species with significant populations already established. Should range contractions occur, new or different weed species could fill the emerging gaps. Continued global climate change could alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

Forests and Landscapes

Global climate change has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the state. In contrast, wildfires in northern California could increase by up to 90 percent due to decreased precipitation. Evidence shows that Southern California also suffers a significant increase in severe wildfires such as the recent devastating Station Fire.

Moreover, continued global climate change has the potential to alter natural ecosystems and biological diversity within the state. For example, alpine and subalpine ecosystems could decline by as much as 60 to 80 percent by the end of the century as a result of increasing temperatures. The productivity of the state's forests has the potential to decrease as a result of global climate change.

Rising Sea Levels

Rising sea levels, more intense coastal storms, and warmer water temperatures could increasingly threaten the state's coastal regions. Under the higher warming range scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate low-lying coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. Under the lower warming range scenario, sea level could rise 12-14 inches.

2.6 GCC Regulatory Setting

International Regulation and the Kyoto Protocol:

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling greenhouse gas emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The Plan currently consists of more than 50 voluntary programs.

The Kyoto protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. Some have estimated that if the commitments outlined in the Kyoto protocol are met, global GHG emissions could be reduced an estimated five percent from 1990 levels during the first commitment period of 2008-2012. Notably, while the United States is a signatory to the Kyoto protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments. In December 2009, international leaders from 192 nations met in Copenhagen to address the future of international climate change commitments post-Kyoto.

Federal Regulation and the Clean Air Act:

Coinciding with the meeting in Copenhagen, on December 7, 2009, the U.S. Environmental Protection Agency (EPA) issued an Endangerment Finding under Section 202(a) of the Clean Air Act, opening the door to federal regulation of GHGs. The Endangerment Finding notes that GHGs threaten public health and welfare and are subject to regulation under the Clean Air Act. To date, the EPA has not promulgated regulations on GHG emissions, but it has already begun to develop them.

Previously the EPA had not regulated GHGs under the Clean Air Act because it asserted that the Act did not authorize it to issue mandatory regulations to address global climate change and that such regulation would be unwise without an unequivocally established causal link between GHGs and the increase in global surface air temperatures. In *Massachusetts v. Environmental Protection Agency et al.* (127 S. Ct. 1438 (2007), however, the U.S. Supreme Court held that GHGs are pollutants under the Clean Air Act and directed the EPA to decide whether the gases endangered public health or welfare. The EPA had also not moved aggressively to regulate GHGs because it expected Congress to make progress on GHG legislation, primarily from the standpoint of a cap-and-trade system. However, proposals circulated in both the House of Representative and Senate have been controversial and it may be some time before Congress adopts major climate change legislation. The EPA's Endangerment Finding paves the way for federal regulation of GHGs with or without Congress.

Although global climate change did not become an international concern until the 1980s, efforts to reduce energy consumption began in California in response to the oil crisis in the 1970s, resulting in the unintended reduction of greenhouse gas emissions. In order to manage the state's energy needs and promote energy efficiency, AB 1575 created the California Energy Commission (CEC) in 1975.

Title 24 Energy Standards:

The California Energy Commission (CEC) first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions

from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods. The latest revisions were adopted in 2008 and became effective on January 1, 2010.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."[7] The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC). The CBSC has released a *2010 Draft California Green Building Standards Code* on its Web site.[8] This update to Part 11 of the Title 24 Building Standards Code effective as of January 1, 2011. Unless otherwise noted in the regulation, all newly constructed buildings in California are subject of the requirements of the CALGreen Code.

California Assembly Bill No. 1493 (AB 1493):

AB 1493 requires CARB to develop and adopt the nation's first greenhouse gas emission standards for automobiles. The Legislature declared in AB 1493 that global warming was a matter of increasing concern for public health and environment in the state. It citied several risks that California faces from climate change, including reduction in the state's water supply, increased air pollution creation by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water energy, and insurance prices. Further, the legislature stated that technological solutions to reduce greenhouse gas emissions would stimulate the California economy and provide jobs.

To meet the requirements of AB 1493, ARB approved amendments to the California Code of Regulations (CCR) adding GHG emission standards to California's existing motor vehicle emission standards in 2004. Amendments to CCR Title 13 Sections 1900 (CCR 13 1900) and

[7] California Building Standards Commission, 2008 California Green Building Standards Code, (2009) 3.
[8] "CALGreen," http://www.bsc.ca.gov/CALGreen/default.htm. 2010

1961 (CCR 13 1961) and adoption of Section 1961.1 (CCR 13 1961.1) require automobile manufacturers to meet fleet average GHG emission limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes beginning with the 2009 model year. Emission limits are further reduced each model year through 2016.

In December 2004 a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against ARB to prevent enforcement of CCR 13 1900 and CCR 13 1961 as amended by AB 1493 and CCR 13 1961.1 (*Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon*, in her official capacity as Executive Director of the California Air Resources Board, et al.). The suit, heard in the U.S. District Court for the Eastern District of California, contended that California's implementation of regulations that in effect regulate vehicle fuel economy violates various federal laws, regulations, and policies. In January 2007, the judge hearing the case accepted a request from the State Attorney General's office that the trial be postponed until a decision is reached by the U.S. Supreme Court on a separate case addressing GHGs. In the Supreme Court Case, *Massachusetts vs. EPA*, the primary issue in question is whether the federal CAA provides authority for USEPA to regulate CO2 emissions. In April 2007, the U.S. Supreme Court ruled in Massachusetts' favor, holding that GHGs are air pollutants under the CAA. On December 11, 2007, the judge in the *Central Valley Chrysler-Jeep* case rejected each plaintiff's arguments and ruled in California's favor. On December 19, 2007, the USEPA denied California's waiver request. California filed a petition with the Ninth Circuit Court of Appeals challenging USEPA's denial on January 2, 2008.

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

(2) revise its standards for 2012–2016 model year vehicles so that compliance with USEPA-adopted GHG standards would also comply with California's standards; and (3) revise its standards, as necessary, to allow manufacturers to use emissions data from the federal CAFE program to demonstrate compliance with the AB 1493 regulations (CARB 2009, http://www.arb.ca.gov/regact/2009/ghgpv09/ghgpvisor.pdf).

Executive Order S-3-05:

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050. The Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The Secretary will also submit biannual reports to the Governor and state Legislature describing: (1) progress made toward reaching the emission targets; (2) impacts of global warming on California's resources; and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of the CalEPA created a Climate Action Team (CAT) made up of members from various state agencies and commission. CAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

California Assembly Bill 32 (AB 32):

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

In November 2007, CARB completed its estimates of 1990 GHG levels. Net emission 1990 levels were estimated at 427 MMTs (emission sources by sector were: transportation – 35 percent; electricity generation – 26 percent; industrial – 24 percent; residential – 7 percent; agriculture – 5 percent; and commercial – 3 percent)[9]. Accordingly, 427 MMTs of CO2 equivalent was established as the emissions limit for 2020. For comparison, CARB's estimate for baseline GHG emissions was 473 MMT for 2000 and 532 MMT for 2010. "Business as usual" conditions (without the 30 percent reduction to be implemented by CARB regulations) for 2020 were projected to be 596 MMTs.

In December 2007, CARB approved a regulation for mandatory reporting and verification of GHG emissions for major sources. This regulation covered major stationary sources such as cement plans, oil refineries, electric generating facilities/providers, and co-generation facilities, which comprise 94 percent of the point source CO2 emissions in the State.

On December 11, 2008, CARB adopted a scoping plan to reduce GHG emissions to 1990 levels. The Scoping Plan's recommendations for reducing GHG emissions to 1990 levels by 2020 include emission reduction measures, including a cap-and-trade program linked to Western Climate Initiative partner jurisdictions, green building strategies, recycling and waste-related measures, as well as Voluntary Early Actions and Reductions. CARB had until January 1, 2011, to adopt the necessary regulations to implement that plan. Implementation of individual measures must begin no later than January 1, 2012, so that the emissions reduction target can be fully achieved by 2020. CARB is currently drafting regulations to implement the plan.

Table 2-3 shows the proposed reductions from regulations and programs outlined in the Scoping Plan. While local government operations were not accounted for in achieving the 2020

[9] On a national level, the EPA's Endangerment Finding stated that electricity generation is the largest emitting sector (34%), followed by transportation (28%), and industry (19%).

emissions reduction, local land use changes are estimated to result in a reduction of 5 MMTons of CO2e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments will play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer vehicle miles traveled. According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 MMTons tons of CO2e (or approximately 1.2 percent of the GHG reduction target).

California Senate Bill No. 1368 (SB 1368):

In 2006, the State Legislature adopted Senate Bill 1368 ("SB 1368"), which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission ("CPUC") to adopt a greenhouse gas emission performance standard ("EPS") for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Due to the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law will effectively prevent California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. Thus, SB 1368 will lead to dramatically lower greenhouse gas emissions associated with California energy demand, as SB 1368 will effectively prohibit California utilities from purchasing power from out of state producers that cannot satisfy the EPS standard required by SB 1368.

TABLE 2-3

SCOPING PLAN GHG REDUCTION MEASURES TOWARD 2020 TARGET

Recommended Reduction Measures	*Reductions Counted toward 2020 Target of 169 MMT CO2e*	*Percentage of Statewide 2020 Target*
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets1	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	**146.7**	**87%**
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	**27.3**	**16%**
Total Reductions Counted toward 2020 Target	**174**	**100%**
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations	To Be Determined2	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	**42.8**	**NA**

Source: CARB. 2008, MMTons CO2e: million metric tons of CO2e 1 Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target. 2 According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of CO2e (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 Target

Senate Bill 97 (SB 97):

Pursuant to the direction of SB 97, OPR released preliminary draft CEQA Guideline amendments for greenhouse gas emissions on January 8, 2009, and submitted its final proposed guidelines to the Secretary for Natural Resources on April 13, 2009. The Natural Resources Agency adopted the Guideline amendments and they became operative on January 1, 2010. Of note, the new guidelines state that a lead agency shall have discretion to determine whether to use a quantitative model or methodology, or in the alternative, rely on a qualitative analysis or performance based standards. New CEQA Guideline § 15064.4(a)"A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use . . .; or (2) Rely on a qualitative analysis or performance based standards."

The CEQA Guideline amendments, do not identify a threshold of significance for greenhouse gas emissions, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, they call for a "good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." The amendments encourage lead agencies to consider many factors in performing a CEQA analysis and preserve lead agencies' discretion to make their own determinations based upon substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. Specific GHG language incorporated in the Guidelines' suggested Environmental Checklist (Guidelines Appendix G) is as follows:

> VII. GREENHOUSE GAS EMISSIONS
>
> Would the project:
>
> a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
>
> b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As demonstrated herein, the proposed Project would not generate GHGs that would have a significant impact on the environment. Nor would the Project conflict with an applicable GHG emissions reduction plan, policy, or regulation.

Executive Order S-01-07:

On January 18, 2007 California Governor Arnold Schwarzenegger, through Executive Order S-01-07, mandated a statewide goal to reduce the carbon intensity of California's transportation fuel by at least ten percent by 2020. The order also requires that a California specific Low Carbon Fuel Standard be established for transportation fuels.

Senate Bills 1078 and 107 and Executive Order S-14-08:

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008 Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33% renewable power by 2020.

Senate Bill 375:

In September of 2008, the California legislature adopted Senate Bill 375 (SB 375), legislation which: (1) relaxes CEQA requirements for some housing projects that meet goals for reducing greenhouse-gas emissions and (2) requires the regional governing bodies in each of the state's major metropolitan areas to adopt, as part of their regional transportation plan, "sustainable community strategies" that will meet the region's target for reducing GHG emissions. SB 375 creates incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions.

SB 375 also directs CARB to develop regional greenhouse gas emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. CARB will determine the level of emissions produced by cars and light trucks, including SUVs, in each of California's 17 metropolitan planning areas. Emissions-reduction goals for 2020 and 2035 would be assigned to each area. CARB appointed a Regional Targets Advisory Committee (RTAC) on January 23, 2009 to provide recommendations on factors to consider and methodologies to use in this target setting process. RTAC provided recommendations to CARB by September 30, 2009, whereupon CARB proposed draft targets on June 10, 2010 and adopted final targets on September 30, 2010.

Local governments will now devise strategies for housing development, road-building and other land uses to shorten travel distances, reduce driving and meet the new targets. If regions develop these integrated land use, housing, and transportation plans, residential projects that conform to the sustainable community strategy (and therefore contribute to GHG reduction) can have a more streamlined environmental review process.

CARB's Preliminary Draft Staff Proposal for Interim Significance Thresholds:

Although OPR was tasked with updating the CEQA guidelines for GHGs, OPR asked CARB in its Technical Advisory to recommend GHG-related significance thresholds to assist lead agencies in their significance determination. CARB Staff released a draft proposal on October 24th, 2008 with interim guidance on significance thresholds. In its proposal, Staff noted that non-zero thresholds can be supported by substantial evidence, but thresholds should nonetheless be sufficiently stringent to meet the State's interim (2020) and long-term (2050) emissions reduction targets. The proposal takes different approaches for different sectors – (1) industrial projects and (2) residential and commercial projects. Although CARB Staff proposed a numerical threshold for the GHG emissions of industrial projects, none were proposed for commercial (and residential) projects.

For residential and commercial projects, CARB Staff recommends that if a project complies with a previously approved plan that addresses GHG emissions, it will not result in a cumulatively considerable incremental contribution to impacts identified in the previously approved plan, and has a number of specific attributes related to meeting and monitoring GHG targets, then it will not be considered to have significant GHG emissions. Alternatively, if those standards cannot be met, Staff recommends a threshold based on implementation of performance standards, or equivalent mitigation measures, addressing energy use, transportation, water use, waste and construction. Specific performance standards are not presented for water, waste, construction, or transportation; however, CARB Staff recommends the California Energy Commission's Tier II Energy Efficiency standards (specified as 35% above Title 24 requirements) for the energy performance standard, and references existing GHG-reducing programs, such as LEED, GreenPoint Rated and the California Green Building Code, as possible reference sources for the other performance standards.

The draft proposal has been very controversial and Staff may consider bringing a revised draft to the Board in the future, however no plans are confirmed at this time. A key preliminary

conclusion from the draft thresholds, however, is that CARB Staff, in setting a numerical threshold for industrial projects and suggesting performance standards, does not believe a "zero threshold" is mandated by CEQA. Similarly, South Coast Air Quality Management District Staff, in proposing interim industrial thresholds, explicitly stated in a December 5, 2008 report that a zero threshold would not be feasible to implement.

South Coast Air Quality Management District Recommendations for Significance Thresholds:

In April 2008, the South Coast Air Quality Management District (SCAQMD), in order to provide guidance to local lead agencies on determining the significance of GHG emissions identified in CEQA documents, convened a "GHG CEQA Significance Threshold Working Group."[10] The goal of the working group is to develop and reach consensus on an acceptable CEQA significance threshold for GHG emissions that would be utilized on an interim basis until CARB (or some other state agency) develops statewide guidance on assessing the significance of GHG emissions under CEQA.

Initially, SCAQMD staff presented the working group with a significance threshold that could be applied to various types of projects—residential; non-residential; industrial; etc. However, the threshold is still under development. In December 2008, staff presented the SCAQMD Governing Board with a significance threshold for use with stationary source projects where it is the lead agency. This threshold uses a tiered approach to determine a project's significance, with 10,000 metric tons of carbon dioxide equivalent (MTCO2e) as a screening numerical threshold.

At present time, the SCAQMD has not adopted thresholds for projects such as the one analyzed in this technical report. The SCAQMD is considering a tiered approach to determine the significance of residential and commercial projects. The draft approach that was published in October 2008 is as follows:[11]

- Tier 1: Is the project exempt from further analysis under existing statutory or categorical exemptions? If yes, there is a presumption of less than significant impacts with respect to climate change.

[10] For more information visit: http://www.aqmd.gov/ceqa/handbook/GHG/GHG.html.
[11] South Coast Air Quality Management District, "Greenhouse Gases (GHG) Significance Thresholds Working Group Meeting #6, "http://www.aqmd.gov/CEQA/handbook/GHG/2008/oct22mtg/oct22.html. 2008.

- Tier 2: Is the project's GHG emissions within the GHG budgets in an approved regional plan? (The plan must be consistent with *State CEQA Guidelines* Sections 15064(h)(3), 15125(d), or 15152(s).) If yes, there is a presumption of less than significant impacts with respect to climate change.

- Tier 3: Is the project's incremental increase in GHG emissions below or mitigated to less than the significance screening level (10,000 MTCO2e per year for industrial projects and 3,000 MTCO2e for commercial/residential projects) and is the project X percent beyond the Title 24 standard and achieve Y percent reduction in water use (the X and Y values were not determined at the time the draft approach was published)? If yes, there is a presumption of less than significant impacts with respect to climate change.

- Tier 4: Does the project meet one of the following performance standards (the performance standards were not well-defined at the time the draft approach was published)? If yes, there is a presumption of less than significant impacts with respect to climate change.

  Option 1: Uniform Percent Emission Reduction Target Objective (e.g., 30 percent) from Business As Usual (BAU)[12] by incorporating project design features and/or implementing emission reduction measures.

  Option 2: Early Implementation of Applicable AB 32 Scoping Plan Measures.

  Option 3: Achieve sector-based standard (e.g., pounds per person, pounds per square foot, etc.).

- Tier 5: Does the project obtain offsets alone or in combination with the above to achieve the target significance screening level (offsets provided for 30-year project life, unless project life limited by permit, lease, or other legally binding conditions)? If yes, there is a presumption of less than significant impacts with respect to climate change. Otherwise, the project is significant.

In November 2009, the following revisions were proposed for Tiers 3 and 4:[13]

[12] CARB defines business-as-usual to mean, "the normal course of business or activities for an entity or a project before the imposition of greenhouse gas emission reduction requirements or incentives (ARB: "Preliminary Draft Regulation for a California Cap-and-Trade Program," Section 95802 (a)(18), Dec., 2009; page 7).

[13] South Coast Air Quality Management District, "Greenhouse Gases (GHG) CEQA Significance Thresholds Working Group Meeting #14," http://www.aqmd.gov/ceqa/handbook/GHG/2009/nov19mtg/nov19.html. 2009.

- Tier 3: Is the project's incremental increase in GHG emissions below or mitigated to less than the significance screening level (10,000 MTCO2e per year for industrial projects; 3,500 MTCO2e for residential projects; 1,400 MTCO2e for commercial projects; 3,000 MTCO2e for mixed-use or all land use projects)? If yes, there is a presumption of less than significant impacts with respect to climate change.

- Tier 4: Does the project meet one of the following performance standards? If yes, there is a presumption of less than significant impacts with respect to climate change.

  Option #1: Achieve a 28 percent reduction from a base case scenario, including land use sector reductions from AB 32 (total emissions not to exceed 25,000 MTCO2e).

  Option #2: Achieve a project-level efficiency target of 4.6 MTCO2e per service population (total emissions not to exceed 25,000 MTCO2e) or plan-level efficiency target of 6.6 MTCO2e.

In September 2010, the Working Group released additional revisions which recommended a project-level efficiency target of 4.8 MTCO2e per service population as a 2020 target and 3.0 MTCO2e per service population as a 2035 target. The recommended plan-level target for 2020 was 6.6 MTCO2e and the plan level target for 2035 was 4.1 MTCO2e. The SCAQMD has not announced when staff is expecting to present a finalized version of these thresholds to the Governing Board. The SCAQMD has also adopted Rules 2700, 2701, and 2702 that address GHG reductions; however, these rules are currently applicable to boilers and process heaters, forestry, and manure management projects.

2.7 CEQA Evaluation of Global Climate Change

There are several unique challenges to analyzing global warming under CEQA, largely because of its "global" nature. Typical CEQA analyses address local actions that have local – or, at most, regional – impacts, whereas global warming presents the considerable challenge of analyzing the relationship between local and global activities and the resulting potential, if any, for local and/or global environmental impacts. Most environmental analyses examine the "project-specific" impacts that a particular project is likely to generate. With regard to global warming, however, it is generally accepted that the magnitude of global warming effects is so

substantial and the contribution of an individual project to global warming is so small that direct significant adverse impacts (albeit not necessarily cumulative significant adverse impacts) would be highly unlikely.

The issue of global climate change is also fundamentally different from any other areas of air quality impact analysis, which are all linked to some region or area in which the impact is significant. Instead, a global climate change analysis must be conducted on a global level, rather than the typical local or regional setting, and requires consideration of not only emissions from the project under consideration, but also the extent of the displacement, translocation, and redistribution of emissions. In the usual context, where air quality is linked to a particular location or area, it is appropriate to consider the creation of new emissions in that specific area to be an environmental impact whether or not the emissions are truly "new" emissions to the overall globe. In fact, the approval of a new developmental plan or project does not necessarily create new automobile drivers - the primary source of a land use project's emissions. Rather, new land use projects merely redistribute existing mobile emissions[14]; accordingly, the use of models that measure overall emissions increases without accounting for existing emissions will substantially overstate the impact of the development project on global warming. This makes an accurate analysis of GHG emissions substantially different from other air quality impacts, where the "addition" of redistributed emissions to a new locale can make a substantial difference to overall air quality.

2.8 Discussion on Establishment of Significance Thresholds

Generally, the evaluation of an impact under CEQA requires measuring data from a project against a "threshold of significance" (see CEQA Guidelines § 15064.7). The amendments to the CEQA Guidelines state that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." (see CEQA Guidelines Amendment

[14] For example, a subdivision of 500 homes generates 3,000 new trips per day; those trips would be added to the local streets and intersections. In the case of global warming, the trips that are associated with those same 500 homes presumably emit roughly the same volume of GHGs in Glendora, California as they would if they were traveling the same miles in Bakersfield or Des Moines, Iowa. As a result, a methodology which assumes that raw vehicle trip counts occurring within a project area will accurately predict change in global climate conditions as reliably as they will predict congestion at intersections is seriously flawed. While those trips certainly could increase the number of vehicles which will pass through local intersections, they will not increase the amount of GHG emissions into the world's atmosphere if those trips simply have been relocated from another location on the planet.

§ 15064.7(c)). For global warming, there is not, at this time, an established "threshold of significance" by which to measure an impact.

CEQA also requires projects to be evaluated for consistency with "applicable general plans and regional plans" (see CEQA Guidelines § 15125(e)). Such plans would include, for example, the applicable air quality attainment or maintenance plan, regional blueprint plans, sustainable community strategies, and climate action plans. These plans involve legislative or regulatory programs applicable to all projects within the region and establish standards that are independent of the impact analysis described in the CEQA Guidelines (see provisions beginning with Section 15126). The program for GHG emission reductions and maintenance, which ultimately is intended to result from AB 32, may constitute such a regional plan when adopted. However, that program does not yet exist. Similarly, the South Coast Air Quality Management District, City of Huntington Beach and the County of Orange have yet to adopt any plans.

Therefore, there is no local, regional or statewide plan regulating global warming by which the proposed project can be measured. As stated above, OPR asked CARB to recommend a method for setting thresholds of significance. CARB is in the process of establishing GHG thresholds of significance, but they have not yet been adopted at this time.

Notwithstanding these analytical challenges, CEQA Guidelines § 15002(a)(1) states that one of the basic purposes of CEQA is to "[i]nform governmental decision makers and the public about the potential, significant environmental effects of proposed activities." Therefore, this evaluation of the proposed project's potential for contribution to global climate change will analyze that potential in a manner and to an extent reasonably consistent with the policy underpinnings of CEQA.

This analysis is the result of the City's thorough investigation of the proposed project's impact on global climate change, including a review of Executive Order S-3-05, AB 32 and the legislative intent behind AB 32, as well as extensive review of scientific literature regarding global climate change. Every effort will be made to maximize the disclosure of information to the public, fairly present the project's potential for significant adverse effects on global climate change, and identify techniques to minimize any such effects.

It must be noted that there is no consensus within the scientific community on any given approach. As the California Air Pollution Control Officer's Association (CAPCOA) observes, "[m]any legal and policy questions remain unsettled, including the requirements of CEQA in the context of greenhouse gas emissions." Many organizations, both public, private and civic, have released advisories or guidelines with recommendations to assist decision makers on how to best evaluate GHG emissions given this uncertainty. The City cannot, and need not, under CEQA, review every report from an expert or agency, as new reports are released on an almost daily basis.

The City has, however, reviewed multiple key advisories, comment letters, and white papers from experts, agencies, and groups such as the Climate Action Team, the California Attorney General, CAPCOA, CARB, the Center for Biological Diversity, the League of California Cities, the Sierra Club, the California State Association of Counties, the Association of Environmental Professionals, and the California Chapter of the American Planning Association. Some of these reports urge "zero emission" thresholds, while others advocate against them. Others evaluate multiple thresholds, such as CAPCOA's January, 2008 white paper, which analyzes: (1) CEQA with no GHG thresholds; (2) CEQA with a GHG threshold of zero; and (3) CEQA with non-zero thresholds. In short, there is no consensus on how to analyze climate change in CEQA documents, and no specific methodology that is universally accepted.

2.9 Methodology and Assumptions

As stated above, the proposed project does not have the potential to significantly impact climate change at the project-specific level. However, the proposed project may have a potentially significant ***cumulative*** impact. Therefore, an extensive analysis of climate change impacts is provided below.

After reviewing much of the relevant literature, the City has instructed our office that OPR, as the agency charged with drafting CEQA guidelines, provides the best available direction. OPR's CEQA Guideline amendments for Greenhouse Gas Emissions state that a lead agency may take into account the following three considerations in assessing the significance of impacts from greenhouse gas emissions. Consideration 1 permits the lead agency to discuss the extent to which the project may increase or reduce greenhouse gas emissions. This discussion could involve a quantification of GHG emissions to the extent feasible. Consideration 2 permits the

lead agency to adopt a threshold of significance that it determines applies to the project. Consideration 3 applies only when an agency has adopted regulations addressing GHG emissions through a public review process. (CEQA Guidelines § 15064.4(b)(1)-(3)) The City will discuss each of these considerations, which are more particularly set forth below.

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

- Consideration 2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

- Consideration 3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The CEQA Guidelines amendments also state that a lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions associated with a project, including emissions associated with energy consumption and vehicular traffic. Because the methodologies for performing this assessment are anticipated to evolve over time, a lead agency shall have discretion to determine, in the context of a particular project, whether to use a model or methodology to quantify greenhouse gas emissions or to rely on qualitative or other performance based standards for estimating the significance of greenhouse gas emissions. (See CEQA Guidelines § 15064.4(b)).

CEQA defines a "significant effect on the environment" as a substantial, or potentially substantial, adverse change in the environment (Public Resources Code § 21068). With respect to global climate change, no one project can individually create a direct impact on what is a global problem (i.e., no project will, by itself, raise the temperature of the planet).

However, a project may be "cumulatively considerable," meaning "that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of current projects, and the effects of probable future projects." (CEQA Guidelines §15065(a)(3)). CEQA Guideline add that a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, such as a climate action plan, sustainable community strategy, or statewide plan of mitigation for greenhouse gas emissions. (See CEQA Guidelines § 15064(h)(3)).

2.10 Analysis of Global Warming Impact

This section presents an assessment of potential GHG impacts associated with the proposed project. The evaluation addresses the difference in potential for GHG emissions during 1990 scenario of the property and the new use proposed for the Project. For analysis purposes, the GHG emissions under the 1990[15] scenario centers on the approximate 100,865 square foot Home Depot Store that was operational at the time.

On February 3, 2011, the SCAQMD released the California Emissions Estimator Model™ (CalEEMod™). The purpose of this new model is to more accurately calculate air quality and greenhouse gas (GHG) emissions from direct and indirect sources and quantify applicable air quality and GHG reductions achieved from mitigation measures. As such, the latest version of CalEEMod™ has been used for this project to determine construction and operational greenhouse gas emissions. Output from the model runs are provided in Appendix "A". The GHG emissions for this scenario were calculated using CalEEMod defaults.

Mobile Source Greenhouse Gas Emissions

Since specific trip generation characteristics are not available for the 1990 scenario which represents the Home Depot that was operational at that time, the CalEEMod model defaults were selected based on the density and acreage of the site.

[15] The site was originally a Home Depot Store (in 1990) and was later converted to an Expo Design Center.

Area Source Greenhouse Gas Emissions

The area source GHG emissions included in this analysis result from landscaping fuel combustion sources such as lawn mowers and from natural gas hearths (for a project such as commercial/retail uses, no natural gas hearths are assumed in the model). There are no substantial direct GHG emissions associated with consumer products and architectural coating. GHG emissions due to natural gas combustion in buildings are excluded from this section since they are included in the emissions associated with energy use.

Building Energy Use Emissions

GHGs are emitted from buildings as a result of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. Unless otherwise noted, CalEEMod default parameters were used.

Water Supply, Treatment, and Distribution

Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water involved as well as the sources of the water.

The analysis utilized the default values in CalEEMod to estimate the indoor and outdoor water useage. In addition, the analysis assumed average embodied energy for Southern California based on analyses by the California Energy Commission, which serve as the defaults in CalEEMod.

Solid Waste

The non-residential land use will generate solid waste. A large percentage of this waste will be diverted from landfills by various waste diversions such as reducing the amount of waste

generated, recycling, and/or composting. The remainder of the waste not diverted will be disposed of at a landfill. GHG emissions from landfills are associated with the anaerobic breakdown of material. CalEEMod's solid waste module determines the GHG emissions associated with the disposal of solid waste into landfills, and the quantities of solid waste are based upon the land use types at the development. For this module, CalEEMod defaults for these were used. GHG emissions associated with other waste diversion are not considered.

A summary of the 1990 scenario's GHG emissions that would occur are presented on Table 2-4.

TABLE 2-4

TOTAL GREENHOUSE GAS EMISSIONS (METRIC TONS PER YEAR) 1990 SCENARIO

	Emissions Type			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total CO_2E**
Area	--	--	--	--
Energy	458.47	0.02	0.01	461.34
Mobile	2,864.15	0.16	0	2,867.58
Waste	227.04	13.42	--	508.80
Water	43.18	0.23	0.01	49.99
			Total CO_2E	**3,887.71**

NOTES: See Appendix "A" for detailed calculation summaries

2.10 Analysis of Global Warming Impact

Set forth below is the analysis for each of the three factors delineated in the CEQA Guidelines amendments. In addition, the City is establishing its own threshold of significance in connection with Factor No. 2.

FACTOR NO. 1: The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.

The City determines compliance with this measure based on the extent to which a project may result in increased energy efficiency. The existing setting would be reuse of the building as it was constructed consistent with the 1992 Title 24 standards that existed at that time. Future

development projects are expected to result in increased GHG emissions if they substantially increase electricity and natural gas consumption, vehicle miles traveled (VMT), and solid waste generation and subsequent disposal into landfills. By incorporating the following design features, the proposed project will not significantly increase the consumption of energy resources that contribute to greenhouse gas emissions and will not create any significant cumulative impacts to global climate change:

General

Energy-saving design features incorporated in the Project, are summarized below. The Project in total will meet or surpass all Title 24 energy code requirements.

Energy and Resource Conservation:

Lighting:

- The entire store will include occupancy sensors in most non-sales areas, including restrooms, break rooms, and offices. The sensors automatically turn the lights off when the space is unoccupied.

- All lighting in the store will consist of by T-8 fluorescent lamps and electronic ballasts, resulting in up to a 15-20 percent reduction in energy load.

- All exterior building signage and many refrigerated food cases will be illuminated with light emitting diodes (LEDs). In refrigerated food cases, LEDs perform well in the cold and produce less heat than fluorescent bulbs – heat which must be compensated for by the refrigeration equipment. LEDs also contain no mercury or lead.

- LED technology is up to 52 percent more energy efficient than fluorescent lights.

- Total estimated energy savings for LED lighting in the store's grocery section is approximately 59,000 kWh per year, enough energy to power five single family homes.

Central Energy Management System:

- Walmart employs a centralized energy management system (EMS) to monitor and control the heating, air conditioning, refrigeration and lighting systems for all stores from Walmart's corporate headquarters in Bentonville, Arkansas. The EMS enables Walmart

to constantly monitor and control the expanded store's energy usage, analyze refrigeration temperatures, observe HVAC and lighting performance, and adjust system levels from a central location 24 hours per day, seven days per week. Energy usage for the entire store will be monitored and controlled in this manner.

HVAC:

- The store will employ one of the industry's most efficient heating, ventilating and air-conditioning (HVAC) units available.

Dehumidification:

- The building will include a dehumidifying system that allows Walmart to operate the store at a higher temperature, use less energy, and allow the refrigeration system to operate more efficiently.

White Roofs:

- The store will utilize a white membrane roof instead of the typical darker colored roof materials employed in commercial construction. The white membrane roof's higher reflectivity helps reduce building energy consumption and reduces the heat island effect, as compared to buildings utilizing darker roofing colors.

Refrigeration:

- Walmart uses non ozone-depleting refrigerants. It uses R407a for the refrigeration equipment. For air conditioning, Walmart has converted to R410a refrigerant.

- Refrigeration equipment is typically roof-mounted close to the refrigerated cases. This reduces the amount of copper refrigerant piping, insulation, potential for leaks and refrigerant charge needed.

Heat Reclamation:

- The Walmart store will reclaim waste heat from onsite refrigeration equipment to supply approximately 70% of the hot water needs for the store.

Water Conservation

Walmart will install high-efficiency urinals that use only 1/8 gallon (one pint) of water per flush.

- This fixture reduces water use by 87 percent compared to the conventional one gallon per flush urinal.

- The 1/8 gallon urinal also requires less maintenance than waterless urinals, making this the better option for Walmart.

- All restroom sinks will use sensor-activated 1/2 gallon per minute high-efficiency faucets.
    - These faucets reduce water usage by approximately 75 percent compared to mandated 1992 EPA Standards.
    - During use, water flows through turbines built into the faucets to generate the electricity needed to operate the motion sensors.

- All restroom toilets will be highly efficient and reduce water use.
    - The fixture uses 20 percent less water compared to mandated EPA Standards, of 1.6 gallon per flush fixtures.
    - The toilets utilize built-in water turbines to generate the power required to activate the flush mechanism.
        - These turbines save energy and material by eliminating electrical conduits required to power automatic flush valve sensors.

- It is estimated that Walmart's water conservation measures could save up to 530,000 gallons of water annually at this store.

Materials and Finishes

- Cement Mixes: The store will be built using cement mixes that include 15-20 percent fly ash, a waste product of coal-fired electrical generation, or 25-30 percent slag, a by-product of the steel manufacturing process. By incorporating these waste product materials into its cement mixes, Walmart offsets the greenhouse gases emitted in the cement manufacturing process.

- The store will use Non-Reinforced Thermoplastic Panel (NRP) in lieu of Fiber Reinforced Plastic (FRP) sheets on the walls in areas where plastic sheeting is appropriate,

including food preparation areas, utility and janitorial areas, and associate break rooms. NRP can be recycled, has better impact resistance and, like FRP, is easy to keep clean.

- The store will use a plant based oil extracted from a renewable resource as a concrete form release agent (a product sprayed on concrete forms to allow ease of removal after the concrete has set). This release agent is non-petroleum based non-toxic and a biodegradable agent.

- For the store's exterior and interior field paint coatings, Walmart will use low volatile organic compound (VOC) paint.

- Paint products required for the Project will be primarily purchased in 55 gallon drums and 275 gallon totes, reducing the number of one gallon and five gallon buckets needed. These plastic buckets are filled from the drums and totes and then returned to the paint supplier for cleaning and reuse.

Recycled Building Materials:

- Construction of the store will use steel containing approximately 90-98 percent recycled structural steel, which utilizes less energy in the mining and manufacturing process than does new steel.

- All of the plastic baseboards and much of the plastic shelving included will be composed of recycled plastic.

Construction and Demolition (C&D) Recycling:

Walmart will employ a Construction and Demolition (C&D) program at this location in order to capture and recycle as much of the metals, woods, floor and ceiling tiles, concretes, asphalts and other materials generated as part of Walmart's demolition and construction process as possible. Walmart will work with a waste management company to fully research all available C&D recycling facilities in the area, and its C&D program will seek to include the widest possible range of materials recovery options.

While net GHG emissions cannot be accurately quantified because of several completely unpredictable variables, methodologies for calculating gross GHG emissions do exist and are

set forth below for informational purposes only to provide a rough calculation of GHG emissions associated with projected future vehicle travel and electricity and natural gas consumption associated with the proposed project. The above sustainable project design features significantly reduce GHG emissions and are consistent with mitigation strategies developed by groups and public agencies, such as CAT, CAPCOA and the California Attorney General.

Greenhouse gas emissions associated with the development and operation of the proposed project were estimated utilizing the CalEEMod emissions inventory model. Emissions sources and categories discussed in the report *Huntington Beach Walmart Air Quality Impact Analysis* have the potential to generate emissions of GHGs; as such the CalEEMod emissions inventory model was utilized to calculate GHG emissions resulting from the construction and operational phases of the project.

Although every attempt has been made to accurately and comprehensively quantify the greenhouse gas emissions associated with the project, a number of inherent limitations are unavoidable in an emissions inventory of this scope.

Construction and Mobile Source Emissions Calculations Limitations

In order to calculate the emissions that will occur as a result of vehicular activity, a number of assumptions must be made regarding the number of vehicle trips generated by the expansion area, as well as the distance traveled over the course of each trip. Although the best information available for the number of trips as well as trip lengths was obtained for the project, a number of assumptions must still be made. Trip generation rates and characteristics were available from report *Huntington Beach Walmart Traffic Impact Analysis, Urban Crossroads Inc., 2011* it should be noted however that the Traffic Study identifies trip generation rates for Weekday and Saturday traffic only, since the Institute of Transportation Engineers (ITE) identifies rates for Weekday, Saturday, and Sunday periods, a composite trip generation rate has been utilized in the CalEEMod model (see Appendix “A” for more details). The project trip lengths available as model defaults in the CalEEMod model have been utilized as a conservative measure. First, it is likely that not all the vehicular trips that result from the proposed project will be “new” vehicle trips, but that a majority of these trips were already occurring elsewhere. Notwithstanding, the analysis estimates emissions from “new” vehicle trips and therefore is conservative in nature.

Construction GHG Emissions

Emissions associated with one-time construction GHG have been evaluated utilizing the CalEEMod emissions inventory model. Construction emissions are amortized over a 30 year period consistent with recommended SCAQMD guidance.

Mobile Source GHG Emissions

Trip generation rates and characteristics were available from report *Huntington Beach Walmart Traffic Impact Analysis, Urban Crossroads Inc., 2011* it should be noted however that the Traffic Study identifies trip generation rates for Weekday and Saturday traffic only, since the Institute of Transportation Engineers (ITE) identifies rates for Weekday, Saturday, and Sunday periods, a composite trip generation rate has been utilized in the CalEEMod model (see Appendix "A" for more details). The project trip lengths available as model defaults in the CalEEMod model have been utilized as a conservative measure.

Area Source Greenhouse Gas Emissions

The area source GHG emissions included in this analysis result from landscaping fuel combustion sources such as lawn mowers and from natural gas hearths (for a project such as commercial/retail uses, no natural gas hearths are assumed in the model). There are no substantial direct GHG emissions associated with consumer products and architectural coating. GHG emissions due to natural gas combustion in buildings are excluded from this section since they are included in the emissions associated with energy use.

Building Energy Use Emissions

GHGs are emitted from buildings as a result of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. Unless otherwise noted, CalEEMod default parameters were used.

Water Supply, Treatment, and Distribution

Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water involved as well as the sources of the water.

The analysis utilized the default values in CalEEMod to estimate the indoor and outdoor water useage. In addition, the analysis assumed average embodied energy for Southern California based on analyses by the California Energy Commission, which serve as the defaults in CalEEMod.

Solid Waste

The non-residential land use will generate solid waste. A large percentage of this waste will be diverted from landfills by various waste diversions such as reducing the amount of waste generated, recycling, and/or composting. The remainder of the waste not diverted will be disposed of at a landfill. GHG emissions from landfills are associated with the anaerobic breakdown of material. CalEEMod's solid waste module determines the GHG emissions associated with the disposal of solid waste into landfills, and the quantities of solid waste are based upon the land use types at the development. For this module, CalEEMod defaults for these were used. GHG emissions associated with other waste diversion are not considered.

A summary of the project's GHG emissions are presented on Table 2-5 as follows.

TABLE 2-5

TOTAL GREENHOUSE GAS EMISSIONS (METRIC TONS PER YEAR) PROPOSED PROJECT

	Emissions Type			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total CO_2E**
Annual construction-related emissions amortized over 30 years	12.16	0.001	--	12.18
Area	--	--	--	--
Energy	386.57	0.02	0.01	388.99
Mobile	6,532.75	0.35	--	6,540.10
Waste	88.05	5.20	--	197.33
Water	43.18	0.23	0.01	49.99
			Proposed Project Total CO_2E	**7,188.59**
			1990 Building Total CO_2E	***-3,887.71***
			Total CO_2E Proposed Project Net Increase	**3,300.88**

NOTES: See Appendix "A" for detailed calculation summaries

Water Vapor

The project does not contribute to this greenhouse gas, because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks and not emissions from industrial and commercial activities.

Ozone

Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NOx and VOCs) to global warning (CARB 2004b). Therefore, project emissions of ozone precursors would not significantly contribute to global climate change.

Chlorofluorocarbons

As mentioned previously, there is a ban for chlorofluorocarbons; therefore, the project will not generate emissions of these greenhouse gases and is not considered any further in this analysis.

Hydrofluorocarbons

The project may emit a small amount of HFC emissions from leakage and service of refrigeration and air conditioning equipment and from disposal at the end of the life of the

equipment (EPA 2004c). The building uses R404a refrigerant for all refrigeration equipment and R410a refrigerant for all air conditioning units. R410a refrigerant results in lower emissions of HFCs compared to the R-22 refrigerant still used by many companies in their air conditioning units.

Perfluorocarbons, Sulfur Hexafluoride, and Nitrogen Triflouride

Perfluorocarbons, sulfur hexafluoride, and nitrogen triflouride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit any of these greenhouse gases.

Summary and Conclusion:

GHG emissions generated by the project (incremental increase over 1990 levels) are estimated at 3,300.88 metric tons per year. These emissions are not however, entirely "new" within the region, and are assigned to the project based primarily on project trip generation and associated mobile source emissions characteristics. As noted previously, the project trip generation reflects a redistribution of trips locally, so that while these trips may be "new" to the local street network, the emissions sources in a global climate change context are not new. Moreover, the project will implement contemporary, energy efficient designs, technologies, and operational programs, acting to reduce area source GHG emissions on a pro rata basis when considering the project in total (upgrades/improvements to existing building facilities). Lastly, it is important to note that the project proposes to reuse an existing building that was in operation and generating GHG emissions in 1990.

Reductions Achieved for Implementation of 2008 Title 24 Energy Efficiency Standards

The existing project encompasses approximately 100,865 square feet and the proposed Project area encompasses the same approximately 100,865 square feet. It should be noted that the existing building was operational in 1990, at the time 1992 Title 24 Standards were applicable and construction of the existing site was completed to comply with the 1992 Title 24 Standards. As part of the project description, the building would be retrofitted to comply with the currently adopted 2008 Title 24 Standards.

For commercial buildings, the 2008 Title 24 Standards are approximately 4.9% more restrictive than the 2005 Title 24 Standards they supercede. The 2005 Title 24 Standards are approximately 7.7% more restrictive than the 2001 Standards. Information for the 2001 Title 24 Standards in comparison to the 1998 Title 24 Standards, 1998 Title 24 Standards to the 1995 Title 24 Standards, and 1995 Title 24

Standards to the 1992 Title 24 Standards is not available. Therefore, as a conservative measure it is assumed that the 2001, 1998, and 1995 Title 24 Standards Updates would yield a nominal 2% reduction when comparing them to the previously adopted Title 24 Standards. Therefore the proposed project would yield an approximate 18.6% reduction or be 18.6% more energy efficient than the existing building. Table 2-4 illustrates a comparison of GHG emissions associated with existing energy demands and Project energy demands. The results indicate that the savings realized through compliance with the 2008 Title 24 Standards for the entire site yield an approximate 15.68% reduction in GHG emissions related to Energy Demand.

TABLE 2-6

COMPARISON OF EXISTING AND PROPOSED AREA SOURCE GREENHOUSE GAS EMISSIONS (METRIC TONS PER YEAR)

	Emissions Type			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total CO_2E**
Energy Demand – 1990 Building	458.47	0.02	0.01	461.34
Energy Demand – Proposed Project	386.57	0.02	0.01	388.99
			Reduction in CO_2E	***72.35***
			Percent Reduction in CO_2E	**15.68%**

FACTOR NO. 2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

Given that neither OPR, nor CARB, nor the SCAQMD has established a numerical threshold, the City will also not adopt a numerical threshold. Instead, the City has determined to apply the following threshold to the project:

> ***The extent to which the project could help or hinder attainment of the state's goals of reducing greenhouse gas emissions to 1990 levels by the year 2020 as stated in AB 32 and an 80-percent reduction in GHG emissions below 1990 levels by 2050 as stated in Executive Order S-3-05.***

The proposed project would not hinder attainment of the state's goals of reducing greenhouse gas emissions to 1990 levels by 2020 and an 80-percent reduction below 1990 levels by 2050. The proposed project would constitute development within an established community that would

be updating the region's building stock through its adoption of several GHG emissions reduction measures as set forth above in connection with Factor No. 1.

From a qualitative standpoint, the proposed project is not opening up a new territory for development, resulting in mostly new vehicular trips, or substantially lengthening existing vehicular trips. Rather, development of the store is occupying an existing commercial building encouraging customers to substitute one stop at the Walmart for what would otherwise require multiple shopping trips by each customer, thereby reducing vehicle miles traveled. Moreover, the project incorporates design measures and operational programs that meet or exceed regulatory requirements, and in so doing will reduce project energy consumption, waste generation, water consumption and other enumerated factors which contribute GHGs. Further, the project is located proximate to alternative transportation facilities served by Orange County Transportation Authority (OCTA). The project area is currently served by the OCTA with bus service along Edwards Street, Goldenwest Street, Beach Boulevard, Bolsa Avenue, McFadden Avenue, Edinger Avenue, Warner Avenue and Slater Avenue through various routes (Routes 25, 29, 64, 66, 70, 72 and 76). Route 25 stops at Goldenwest Street and Edinger Avenue, and provides the most direct bus service to the proposed project. Development of this project will continue to provide an opportunity for nearby residents to shop closer to home, thereby limiting vehicular trips and vehicular emissions of greenhouse gases. In addition, the proposed project will improve the region's commercial building stock by incorporating GHG-emissions reduction measures that would substantially improve the existing building.

Summary and Conclusion:

In combination, the project location, design features, and operational programs support attainment of the state's goals of reducing greenhouse gas emissions to 1990 levels by the year 2020 as stated in AB 32, and an 80-percent reduction in GHG emissions below 1990 levels by 2050 as stated in Executive Order S-3-05.

FACTOR NO. 3

The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. No air district or other regulatory agency in California, including the SCAQMD, has formally adopted a significance threshold for GHG emissions generated by a proposed project (for which SCAQMD is not the lead agency), or a uniform methodology for analyzing impacts related to GHG emissions or global climate change. SCAQMD has adopted Significance Screening Levels for industrial projects (10,000 metric tons per year of carbon dioxide equivalent) for which it is the lead agency, and is only in the preliminary stages of identifying screening significance thresholds for commercial and residential projects. (SCAQMD Working Group Meeting #14, November 19, 2009). Therefore, no applicable regulations or requirements have been adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions with which to compare the project.

Summary and Conclusion:

As noted, no air district or other regulatory agency in California, including the SCAQMD, has formally adopted a significance threshold for GHG emissions generated by a proposed project (for which SCAQMD is not the lead agency), or a uniform methodology for analyzing impacts related to GHG emissions or global climate change. Notwithstanding, as discussed herein, the project incorporates and reflects physical attributes and operational programs that act to reduce GHG emissions, otherwise generated if such attributes and programs were not implemented. In so doing, the project supports the state's goals of reducing greenhouse gas emissions. The project would therefore also likely comply with future contemplated regulations or plans adopted in support of the state's GHG emissions reductions goals.

2.11 GHG Emissions Findings and Recommendations

As discussed previously, the methodology used in this report to analyze the project's potential effect on global climate change includes a calculation of GHG emissions for informational purposes, as there is no quantifiable emissions threshold currently defined. Although AB 32 requires GHG emissions to be reduced to 1990 levels by 2020, it does not require the CARB to develop a plan to accomplish this reduction until 2011. Though CARB is diligently moving

forward to develop this plan, until it has published and adopted its 1990 emissions inventory, there is no “air quality standard” by which to judge a project’s contribution to global climate change under the *CEQA Guidelines*, Appendix G.

Accordingly, the project’s potential for creating an impact on global climate change is based on whether the project would conflict with the attainment of the state’s goals of reducing greenhouse gas emissions as dictated by AB 32. As discussed herein, the project is consistent with and supports state goals of reducing greenhouse gas emissions.

In support of and related to reduction of potential GHG emissions, the project will comply with air pollutant emissions regulations. Further, the project design attributes and elements discussed in this Section and summarized in Section 1.3, “Energy Efficiency / Sustainability,” will also act to reduce operational emissions and in so doing, reduce GHG emissions. These attributes and elements include enhanced energy conservation, that will meet or exceed the Title 24 Energy Efficiency Standards; and compliance with state and federal regulatory programs promoting the efficient use of energy.

As supported by the preceding discussion, the potential for the project to contribute to a significant global impact by conflicting with or obstructing state goals of reducing greenhouse gas emissions as dictated by AB 32 is less-than-significant.

APPENDIX A

Greenhouse Gas Calculations

HB Home Depot

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Home Improvement Superstore	100.86	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	30		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - No construction

Off-road Equipment - Project engineer.

Off-road Equipment - Project engineer

Architectural Coating - Low-VOC Coatings

Energy Use - 1992 Title 24 Standards

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	458.47	458.47	0.02	0.01	461.34
Mobile	2.64	4.54	25.46	0.03	3.12	0.16	3.27	0.12	0.16	0.27	0.00	2,864.15	2,864.15	0.16	0.00	2,867.58
Waste						0.00	0.00		0.00	0.00	227.04	0.00	227.04	13.42	0.00	508.80
Water						0.00	0.00		0.00	0.00	0.00	43.18	43.18	0.23	0.01	49.99
Total	**3.12**	**4.55**	**25.47**	**0.03**	**3.12**	**0.16**	**3.27**	**0.12**	**0.16**	**0.27**	**227.04**	**3,365.80**	**3,592.84**	**13.83**	**0.02**	**3,887.71**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	458.47	458.47	0.02	0.01	461.34
Mobile	2.64	4.54	25.46	0.03	3.12	0.16	3.27	0.12	0.16	0.27	0.00	2,864.15	2,864.15	0.16	0.00	2,867.58
Waste						0.00	0.00		0.00	0.00	227.04	0.00	227.04	13.42	0.00	508.80
Water						0.00	0.00		0.00	0.00	0.00	43.18	43.18	0.23	0.01	49.99
Total	**3.12**	**4.55**	**25.47**	**0.03**	**3.12**	**0.16**	**3.27**	**0.12**	**0.16**	**0.27**	**227.04**	**3,365.80**	**3,592.84**	**13.83**	**0.02**	**3,887.71**

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.64	4.54	25.46	0.03	3.12	0.16	3.27	0.12	0.16	0.27	0.00	2,864.15	2,864.15	0.16	0.00	2,867.58
Unmitigated	2.64	4.54	25.46	0.03	3.12	0.16	3.27	0.12	0.16	0.27	0.00	2,864.15	2,864.15	0.16	0.00	2,867.58
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Home Improvement Superstore	3,005.63	5,720.78	5627.99	5,724,065	5,724,065
Total	3,005.63	5,720.78	5,627.99	5,724,065	5,724,065

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Home Improvement Superstore	8.90	13.30	7.40	23.40	57.60	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	445.38	445.38	0.02	0.01	448.18
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	445.38	445.38	0.02	0.01	448.18
NaturalGas Mitigated	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	13.09	13.09	0.00	0.00	13.17
NaturalGas Unmitigated	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	13.09	13.09	0.00	0.00	13.17
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Home Improvement Superstore	245233	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	13.09	13.09	0.00	0.00	13.17
Total		**0.00**	**0.01**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**13.09**	**13.09**	**0.00**	**0.00**	**13.17**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Home Improvement Superstore	245233	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	13.09	13.09	0.00	0.00	13.17
Total		**0.00**	**0.01**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**13.09**	**13.09**	**0.00**	**0.00**	**13.17**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Home Improvement Superstore	1.53121e+006					445.38	0.02	0.01	448.18
Total						**445.38**	**0.02**	**0.01**	**448.18**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Home Improvement Superstore	1.53121e+006					445.38	0.02	0.01	448.18
Total						**445.38**	**0.02**	**0.01**	**448.18**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.12					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.36					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.12					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.36					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					43.18	0.23	0.01	49.99
Unmitigated					43.18	0.23	0.01	49.99
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Home Improvement Superstore	7.47095 / 4.57897					43.18	0.23	0.01	49.99
Total						**43.18**	**0.23**	**0.01**	**49.99**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Home Improvement Superstore	7.47095 / 4.57897					43.18	0.23	0.01	49.99
Total						**43.18**	**0.23**	**0.01**	**49.99**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					227.04	13.42	0.00	508.80
Unmitigated					227.04	13.42	0.00	508.80
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Home Improvement Superstore	1118.45					227.04	13.42	0.00	508.80
Total						**227.04**	**13.42**	**0.00**	**508.80**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Home Improvement Superstore	1118.45					227.04	13.42	0.00	508.80
Total						**227.04**	**13.42**	**0.00**	**508.80**

9.0 Vegetation

HB Walmart

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	765	Space
Free-Standing Discount Superstore	100.86	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	30		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase - Scedhule obtained from project engineer

Off-road Equipment - Project engineer.

Off-road Equipment - Project engineer.

Off-road Equipment - Project engineer.

Off-road Equipment - Project engineer.

Off-road Equipment - Project Engineer

Off-road Equipment - Project engineer

Off-road Equipment - Project engineer.

Architectural Coating - Low-VOC Coatings

Off-road Equipment - Project engineer.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	3.19	2.44	2.14	0.00	0.19	0.13	0.32	0.01	0.13	0.14	0.00	364.82	364.82	0.03	0.00	365.42
Total	**3.19**	**2.44**	**2.14**	**0.00**	**0.19**	**0.13**	**0.32**	**0.01**	**0.13**	**0.14**	**0.00**	**364.82**	**364.82**	**0.03**	**0.00**	**365.42**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2011	3.19	2.44	2.14	0.00	0.01	0.13	0.14	0.01	0.13	0.14	0.00	364.82	364.82	0.03	0.00	365.42
Total	**3.19**	**2.44**	**2.14**	**0.00**	**0.01**	**0.13**	**0.14**	**0.01**	**0.13**	**0.14**	**0.00**	**364.82**	**364.82**	**0.03**	**0.00**	**365.42**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.94	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	386.57	386.57	0.02	0.01	388.99
Mobile	5.06	9.66	51.76	0.07	7.22	0.35	7.58	0.27	0.35	0.62	0.00	6,532.75	6,532.75	0.35	0.00	6,540.10
Waste						0.00	0.00		0.00	0.00	88.05	0.00	88.05	5.20	0.00	197.33
Water						0.00	0.00		0.00	0.00	0.00	43.18	43.18	0.23	0.01	49.99
Total	**7.00**	**9.67**	**51.77**	**0.07**	**7.22**	**0.35**	**7.58**	**0.27**	**0.35**	**0.62**	**88.05**	**6,962.50**	**7,050.55**	**5.80**	**0.02**	**7,176.41**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.94	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	386.57	386.57	0.02	0.01	388.99
Mobile	5.06	9.66	51.76	0.07	7.22	0.35	7.58	0.27	0.35	0.62	0.00	6,532.75	6,532.75	0.35	0.00	6,540.10
Waste						0.00	0.00		0.00	0.00	88.05	0.00	88.05	5.20	0.00	197.33
Water						0.00	0.00		0.00	0.00	0.00	43.18	43.18	0.23	0.01	49.99
Total	**7.00**	**9.67**	**51.77**	**0.07**	**7.22**	**0.35**	**7.58**	**0.27**	**0.35**	**0.62**	**88.05**	**6,962.50**	**7,050.55**	**5.80**	**0.02**	**7,176.41**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Wing Wall Demolition - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.63	1.63	0.00	0.00	1.64
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.63**	**1.63**	**0.00**	**0.00**	**1.64**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.07
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**	**0.07**	**0.00**	**0.00**	**0.07**

3.2 Wing Wall Demolition - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.63	1.63	0.00	0.00	1.64
Total	**0.00**	**0.02**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.63**	**1.63**	**0.00**	**0.00**	**1.64**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.07
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**	**0.07**	**0.00**	**0.00**	**0.07**

3.3 Wing Wall Foundation - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.38	1.38	0.00	0.00	1.39
Total	**0.00**	**0.01**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.38**	**1.38**	**0.00**	**0.00**	**1.39**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.81	0.00	0.00	0.81
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.00	0.00	0.89
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.70**	**1.70**	**0.00**	**0.00**	**1.70**

3.3 Wing Wall Foundation - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.38	1.38	0.00	0.00	1.39
Total	**0.00**	**0.01**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**1.38**	**1.38**	**0.00**	**0.00**	**1.39**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.81	0.00	0.00	0.81
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.00	0.00	0.89
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.70**	**1.70**	**0.00**	**0.00**	**1.70**

3.4 Wing Wall Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.04	0.02	0.00		0.00	0.00		0.00	0.00	0.00	4.75	4.75	0.00	0.00	4.75
Total	**0.01**	**0.04**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**4.75**	**4.75**	**0.00**	**0.00**	**4.75**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62	1.62	0.00	0.00	1.62
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77	1.77	0.00	0.00	1.78
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.39**	**3.39**	**0.00**	**0.00**	**3.40**

3.4 Wing Wall Construction - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.04	0.02	0.00		0.00	0.00		0.00	0.00	0.00	4.75	4.75	0.00	0.00	4.75
Total	**0.01**	**0.04**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**4.75**	**4.75**	**0.00**	**0.00**	**4.75**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62	1.62	0.00	0.00	1.62
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77	1.77	0.00	0.00	1.78
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.39**	**3.39**	**0.00**	**0.00**	**3.40**

3.5 Trenching Utility Lines - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.07	0.04	0.00		0.00	0.00		0.00	0.00	0.00	6.98	6.98	0.00	0.00	7.00
Total	**0.01**	**0.07**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**6.98**	**6.98**	**0.00**	**0.00**	**7.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30	0.00	0.00	0.30
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.30**	**0.30**	**0.00**	**0.00**	**0.30**

3.5 Trenching Utility Lines - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.01	0.07	0.04	0.00		0.00	0.00		0.00	0.00	0.00	6.98	6.98	0.00	0.00	7.00
Total	**0.01**	**0.07**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**6.98**	**6.98**	**0.00**	**0.00**	**7.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30	0.00	0.00	0.30
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.30**	**0.30**	**0.00**	**0.00**	**0.30**

3.6 Transformer Replacement - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.59	0.59	0.00	0.00	0.59
Total	**0.00**	**0.01**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.59**	**0.59**	**0.00**	**0.00**	**0.59**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.81	0.00	0.00	0.81
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.00	0.00	0.89
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.70**	**1.70**	**0.00**	**0.00**	**1.70**

3.6 Transformer Replacement - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.00	0.01	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.59	0.59	0.00	0.00	0.59
Total	**0.00**	**0.01**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.59**	**0.59**	**0.00**	**0.00**	**0.59**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.81	0.00	0.00	0.81
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.89	0.00	0.00	0.89
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.70**	**1.70**	**0.00**	**0.00**	**1.70**

3.7 Grind/Overlay - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.29	0.13	0.00		0.02	0.02		0.02	0.02	0.00	28.98	28.98	0.00	0.00	29.05
Paving	0.01					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.29**	**0.13**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**28.98**	**28.98**	**0.00**	**0.00**	**29.05**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.00	0.00	0.83
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.83**	**0.83**	**0.00**	**0.00**	**0.83**

3.7 Grind/Overlay - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.29	0.13	0.00		0.02	0.02		0.02	0.02	0.00	28.98	28.98	0.00	0.00	29.05
Paving	0.01					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.05**	**0.29**	**0.13**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**28.98**	**28.98**	**0.00**	**0.00**	**29.05**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.00	0.00	0.83
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.83**	**0.83**	**0.00**	**0.00**	**0.83**

3.8 Building Construction - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.12	0.96	0.45	0.00		0.05	0.05		0.05	0.05	0.00	87.61	87.61	0.01	0.00	87.81
Total	**0.12**	**0.96**	**0.45**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**87.61**	**87.61**	**0.01**	**0.00**	**87.81**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.68	0.48	0.00	0.03	0.02	0.05	0.00	0.02	0.03	0.00	89.19	89.19	0.00	0.00	89.25
Worker	0.06	0.06	0.68	0.00	0.12	0.00	0.13	0.01	0.00	0.01	0.00	97.61	97.61	0.01	0.00	97.74
Total	**0.12**	**0.74**	**1.16**	**0.00**	**0.15**	**0.02**	**0.18**	**0.01**	**0.02**	**0.04**	**0.00**	**186.80**	**186.80**	**0.01**	**0.00**	**186.99**

3.8 Building Construction - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.12	0.96	0.45	0.00		0.05	0.05		0.05	0.05	0.00	87.61	87.61	0.01	0.00	87.81
Total	**0.12**	**0.96**	**0.45**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**87.61**	**87.61**	**0.01**	**0.00**	**87.81**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.68	0.48	0.00	0.00	0.02	0.03	0.00	0.02	0.03	0.00	89.19	89.19	0.00	0.00	89.25
Worker	0.06	0.06	0.68	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.00	97.61	97.61	0.01	0.00	97.74
Total	**0.12**	**0.74**	**1.16**	**0.00**	**0.01**	**0.02**	**0.04**	**0.01**	**0.02**	**0.04**	**0.00**	**186.80**	**186.80**	**0.01**	**0.00**	**186.99**

3.9 Architectural Coating - 2011

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.83					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.25	0.15	0.00		0.02	0.02		0.02	0.02	0.00	18.70	18.70	0.00	0.00	18.77
Total	**2.87**	**0.25**	**0.15**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**18.70**	**18.70**	**0.00**	**0.00**	**18.77**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.13	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	19.40	19.40	0.00	0.00	19.43
Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**19.40**	**19.40**	**0.00**	**0.00**	**19.43**

3.9 Architectural Coating - 2011

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.83					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.25	0.15	0.00		0.02	0.02		0.02	0.02	0.00	18.70	18.70	0.00	0.00	18.77
Total	**2.87**	**0.25**	**0.15**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**18.70**	**18.70**	**0.00**	**0.00**	**18.77**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.40	19.40	0.00	0.00	19.43
Total	**0.01**	**0.01**	**0.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**19.40**	**19.40**	**0.00**	**0.00**	**19.43**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.06	9.66	51.76	0.07	7.22	0.35	7.58	0.27	0.35	0.62	0.00	6,532.75	6,532.75	0.35	0.00	6,540.10
Unmitigated	5.06	9.66	51.76	0.07	7.22	0.35	7.58	0.27	0.35	0.62	0.00	6,532.75	6,532.75	0.35	0.00	6,540.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Free-Standing Discount Superstore	5,358.69	6,462.10	5660.26	13,265,829	13,265,829
Parking Lot	0.00	0.00	0.00		
Total	5,358.69	6,462.10	5,660.26	13,265,829	13,265,829

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Free-Standing Discount Superstore	8.90	13.30	7.40	13.20	67.80	19.00
Parking Lot	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	375.53	375.53	0.02	0.01	377.89
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	375.53	375.53	0.02	0.01	377.89
NaturalGas Mitigated	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	11.03	11.03	0.00	0.00	11.10
NaturalGas Unmitigated	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	11.03	11.03	0.00	0.00	11.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Free-Standing Discount Superstore	206773	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	11.03	11.03	0.00	0.00	11.10
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.01**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**11.03**	**11.03**	**0.00**	**0.00**	**11.10**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Free-Standing Discount Superstore	206773	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	11.03	11.03	0.00	0.00	11.10
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**0.00**	**0.01**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**11.03**	**11.03**	**0.00**	**0.00**	**11.10**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Free-Standing Discount Superstore	1.29107e+006					375.53	0.02	0.01	377.89
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**375.53**	**0.02**	**0.01**	**377.89**

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Free-Standing Discount Superstore	1.29107e+006					375.53	0.02	0.01	377.89
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**375.53**	**0.02**	**0.01**	**377.89**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.94	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	1.94	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.47					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.47					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.94**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.47					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.47					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.94**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					43.18	0.23	0.01	49.99
Unmitigated					43.18	0.23	0.01	49.99
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Free-Standing Discount Superstore	7.47095 / 4.57897					43.18	0.23	0.01	49.99
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Total						**43.18**	**0.23**	**0.01**	**49.99**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Free-Standing Discount Superstore	7.47095 / 4.57897					43.18	0.23	0.01	49.99
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Total						**43.18**	**0.23**	**0.01**	**49.99**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					88.05	5.20	0.00	197.33
Unmitigated					88.05	5.20	0.00	197.33
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Free-Standing Discount Superstore	433.77					88.05	5.20	0.00	197.33
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**88.05**	**5.20**	**0.00**	**197.33**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Free-Standing Discount Superstore	433.77					88.05	5.20	0.00	197.33
Parking Lot	0					0.00	0.00	0.00	0.00
Total						**88.05**	**5.20**	**0.00**	**197.33**

9.0 Vegetation