GLOBAL CLIMATE CHANGE ANALYSIS

HAWANO INDUSTRIAL BUSINESS PARK DEVELOPMENT

3100 5566 (TM)

ENVIRONMENTAL LOG NO. 93-19-006OO

Lead Agency:

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, CA 92123

Prepared by:

Haseeb Qureshi
Aric Evatt, PTP

URBAN CROSSROADS

41 Corporate Park, Suite 300
Irvine, CA 92606
949-660-1994

Project Proponent:

PARAGON MANAGEMENT COMPANY
4225 Executive Square, Suite 920
La Jolla, CA 92037

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AE:HQ

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EXECUTIVE SUMMARY

The proposed project consists of approximately 852,426 square feet of business park use in two phases. Phase 1 of the project comprises of approximately 432,682 square feet of business park use on 33.47 net acres and is proposed to be completed by 2013. Phase 2 of the project comprises of approximately 419,744 square feet of business park use on 32.15 net acres and is proposed to be completed by 2014.

The guideline that is being used to determine the significance of impacts is whether or not the project can demonstrate a reduction in the project's operational and construction greenhouse gas (GHG) emissions (total emissions) to 33% below business as usual (BAU)[1]. The purpose of this Guideline is to demonstrate that the proposed project will not conflict with implementation of the California Global Warming Solutions Act of 2006 (Assembly Bill 32, AB32).

DETERMINATION OF SIGNIFICANCE

Significant Cumulative Impact GCC-1: There are currently no thresholds in place for evaluating the significance of GHG emissions in terms of their contribution to global climate change (GCC). The San Diego County DPLU has issued interim guidance for addressing GHG impacts. More specifically, the guideline states that a project is less than significant if it can achieve the GHG reduction mandates of AB 32, compliance with AB 32 requires an overall reduction by 33% of the Project's aggregate GHG emissions (including emissions from construction sources, operational sources, and mobile sources). Mitigation Measure M-GCC-1 requires the Project Applicant or Master Developer to prepare a subsequent Title 24 Compliance Report to demonstrate that the proposed Project would achieve a minimum 33% reduction from 2005 Title 24 standards. Mitigation Measure M-GCC-2 would further assist in achieving the required GHG reductions by limiting the amount of truck idling that would occur on-site under long-term operating conditions. These requirements would be enforced pursuant to Section 3.3.1 which states that development within the East Otay Mesa Specific Plan

[1] San Diego County Industrial Use / East Otay Mesa Specific Plan DPLU Interim Guidance for Greenhouse Gas (GHG) Analysis – May 7, 2010

(EOMSP) area shall be subject to the approval of a Site Plan in conformance with Section 7150 of the County Zoning Ordinance. Implementation of Mitigation Measures M-GCC-1 and M-GCC-2, as well as mandatory compliance with AB 1493 and the LCFS, would reduce the Project's aggregate GHG emissions by 22.69%, as shown in Table 1, *Total Project Greenhouse Gas Emissions Per Year (2020) (Metric Tons)*. This level of reduction would notsatisfy the County's required reduction of 33% of aggregate GHG emissions. Since the majority (88.2%) of the Project's pre-mitigated emission levels would occur as a result of mobile source emissions, the only way to achieve the required reduction would be through mitigation addressing mobile source emissions. However, additional mitigation measures are not available to reduce the Project's mobile source-related GHG emissions, as the Proejct applicant cannot feasibly control the length of VMTs or require additional pollution reduction measures in vehicles that would serve the site under either near-term construction or long-term operating conditions. Accordingly, the proposed Project's aggregate GHG emission would not be reduced to less than significant levels, and would represent a significant and unavoidable cumulative impact of Project development.

Although implementation of the proposed Project would result in cumulative impacts due to greenhouse gas emissions that would remain significant and unavoidable following mitigation, the Project is still being proposed without an alternative design because it would not be possible to develop 79.6 acres of light industrial land uses without resulting in significant impacts due to GHG emissions. The proposed Proejct merely implements the County's General Plan and EOMSP, both of which designate the 79.6-acre site for development with light industrial uses.

TABLE 1

TOTAL PROJECT GREENHOUSE GAS EMISSIONS PER YEAR (2020)[a]

(METRIC TONS)

Project Buildout (Phase I & Phase II)					
Source	CO_2	N_2O		CH_4	
	mtpy[b]	mtpy	mtpy CO_2 EQ	mtpy	mtpy CO_2 EQ
Construction Emissions[a]	104.22	0.00267	0.83	0.00596	0.13
Mobile Source Emissions – Passenger Cars[c]	12,664.90	0.33	101.21	0.58	12.13
Mobile Source Emissions – Trucks[d]	21,171.95	0.11	33.06	0.11	2.38
Energy Use Emissions[e,f]	1,166.91	0.016	5.07	0.073	1.55
Water Use Related Emissions	51.91	--	--	--	--
Natural Gas Emissions[f]	1,081.82	0.02	6.23	0.02	0.42
Solid Waste Related Emissions[g]				59.62	1,252.02
Total (metric tons per year)	36,241.70	0.48	146.40	60.41	1,268.63
Total (metric tons per year) CO2 Equivalent	***37,656.73***				
% Reduction from BAU	***22.69***				

[a]Construction Emissions are amortized over a 30 year period

[b]mtpy = Metric Tons Per Year

[c]Includes 21% reduction from Pavley and 10% reduction for LCFS (applied to CO2 only)

[d]Includes 10% reduction for LCFS (applied to CO2 only)

[e]Includes 33% reduction from Renewable Portfolio Standards (RPS)

[f]Includes 18.15% reduction in electricity related emissions and a 33% reduction in natural gas related emissions for 33% efficiency beyond Title 24 Requirements. Percentages based on the CAPCOA document *Quantifying Greenhouse Gas Mitigation Measures* which states that for every 10% above Title 24, the GHG reduction effectiveness is 5.5% for electricity related emissions and 10% for natural gas related emissions.

[g]Includes a 50% reduction in solid-waste generation due to recycling requirements.

A summary of the sustainable project design features, and recommended mitigation measures is as follows:

PROJECT-SPECIFIC MITIGATION

M-GCC-1 **Operational GHG Impacts**

Intent: In order to mitigate for impacts related to on-site long-term GHG emissions, design measures shall be incorporated into future site plans to achieve the objectives of AB 32. **Description of Requirement:** Implementing Site Plans shall include design measures to reduce on-site long-term energy consumption, operational GHG emissions by 33% below Title 24 requirements (for natural gas and electricity). The Site Plans shall incorporate the following:

Prior to the approval of future Site Plans for any lots within TM 5566, the Project applicant shall prepare a subsequent Title 24 Compliance report to identify measures incorporated into the Site Plan's design to reduce emissions of area-source energy consumption. The report shall identify measures that are physically and economically feasible to implement in the Site Plan design in order to achieve a performance standard of at least a 33% reduction in energy consumption as compared to the 2005 Title 24 requirements.

The Title 24 Compliance report shall cite references that estimate energy consumption reductions associated with Site Plan design features, and shall provide reduction credits for those design features that result in quantifiable reductions in energy consumption.

Examples of measures that would serve to assist in achieving the 33% energy consumption reduction target / performance standard may include, but shall not be limited to, the following (it being understood that certain of the measures described in the bullets below may be adopted by the Project applicant, to the extent such measures are found to be physically and economically feasible, in order to achieve the reductions specified above, and that not all or any such measures need to be adopted, and that other feasible measures not listed below may be adopted, as long as the above performance standard is met):

- Design buildings to use natural systems to reduce energy use. Locate and orient buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.
- Design buildings to maximize water efficiency and reduce water use (excluding irrigation) beyond the Energy Policy Act of 1992 guidelines for fixture performance. This measure is expected to reduce GHG emissions associated with water conveyance by approximately 28-30%[2].
- Provide interior and exterior collection and storage areas for recyclables and green waste, in locations that are easily accessible to employees and visitors. The location of such storage areas shall be clearly labeled on future Site Plans. This will

[2] The use of HET and EPA Certified WaterSense labeled faucets will result in a 30% reduction in water use from BAU conditions. Based on the LEED ® for New Construction Reference Guide, the typical flowrate for a water closet is 1.6 gallons per flush, for a low-flow water closet the flowrate is 1.1 gallons per flush which is an approximate 30% reduction in water usage. Additionally, a conventional kitchen sink has a flowrate of 2.5 gallons per minute and a conventional shower has a flowrate of 2.5 gallons per minute; the low-flow kitchen sink has a flowrate of 1.8 gallons per minute and the low-flow shower has a flowrate of 1.8 gallons per minute this is an approximate 28% reduction in water usage.

reduce the amount of waste generated by building occupants and hauled to and disposed of in landfills[3].

- For site lighting, the project's power density shall be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific site lighting elements proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.
- For warehouse lighting, use T5HO lighting fixtures providing that general lighting will be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific site lighting elements proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.
- Install motion sensors on office lighting so that efficiency will be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific site lighting elements proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.
- Install skylights and energy efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors for office lighting.
- Install exterior signage, traffic, and other outdoor lighting that utilizes light-emitting diode (LED) lighting that is approximately 70 percent more efficient than fluorescent signage.
- Use light colored "cool" roofs, cool pavements, and strategically placed shade trees.
- Require orientation of buildings to maximize passive solar heating during cool seasons, avoid solar heat gain during hot periods, enhance natural ventilation, and promote effective use of daylight. Building orientation, wiring, and plumbing should optimize and facilitate opportunities for on-site solar generation and heating.
- Limit the hours of operation of outdoor lighting as specified to meet LEED Energy & Atmosphere Credit 1.

[3] This measure is consistent with the County of San Diego's Recycling Ordinance (Section 68.501 et seq. of the San Diego County Code of Regulatory Ordinances). Since the County's Recycling Ordinance exceeds the requirements of Title 24, GHG emission reductions above and beyond Title 24 requirements may be credited towards the Project's requirement to achieve a 33% reduction in emissions.

- Install the photovoltaic cells (solar panels) or "thin film" on roofs and parking lots (which can provide added benefits of shading vehicles) as specified by LEED Energy & Atmosphere Credit 2 to off-set the Project's energy consumption. If the energy conservation measures implemented do not reduce GHG emissions by 33%, solar panels shall be installed to fulfill the remainder of the 33% requirement.

The Title 24 Compliance report shall only give emission reduction credits to those design features that are depicted on Site Plans or where evidence of compliance can otherwise be provided to the County DPLU. Approval of future Site Plans and/or construction permits shall not occur until it can be assured that the design features described in the Title 24 Compliance report (or other measures meeting the performance criteria specified above) have been depicted on the Site Plan or construction drawings, or if it can otherwise be demonstrated that the design features will be incorporated into the proposed development.

Documentation: The applicant shall prepare the Site Plans pursuant to this mitigation measure and in accordance with DPLU Form #506, *Applicant's Guide to Site Plan*. The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with all applicable review fees and deposits, along with evidence of compliance with as the requirements specified above. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur. **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure.

M-GCC-2 **Operational GHG Impacts**

Intent: In order to mitigate for impacts related to trucks idling on-site. **Description of Requirement:** Strategies shall be incorporated to reduce idling time of trucks through alternative technologies such as IdleAire, electrification of truck parking, and alternative energy sources to allow diesel engines to be completely turned off. These strategies shall be placed on future site plans (e.g., location of electric truck parking locations and alternative energy sources).

Documentation: The applicant shall prepare the Site Plans pursuant to this mitigation measure and in accordance with DPLU Form #506, *Applicant's Guide to Site Plan*. The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with

all applicable review fees and deposits, along with evidence of compliance. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur. **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure.

1.0 INTRODUCTION

1.1 Purpose of the Report and Regulatory Background

This document assesses the impact of the Hawano Industrial Business Park Development (project) on global climate change. In 2006, Governor Arnold Schwarzenegger signed Assembly Bill 32 (AB32), which charged the California Air Resources Board (CARB) with developing regulations on how the State should address climate change. The CARB, California Environmental Protection Agency (Cal EPA), the U.S. Environmental Protection Agency (EPA), the South Coast Air Quality Management District (SCAQMD) or other appropriate governmental organizations have not yet developed formal guidelines on how to prepare a California Environmental Quality Act (CEQA) assessment for climate change. 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. As directed by SB97, the Natural Resources Agency adopted Amendments to the CEQA Guidelines for greenhouse gas emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 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 numeric threshold of significance for GHG 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.

Based on the memorandum *Industrial Use / East Otay Mesa Specific Plan DPLU Interim Guidance for Greenhouse Gas (GHG) Analysis, Dated May 7, 2010:* Until further direction is provided by the State, the County's interim guideline for determining significance is whether the project would conflict with implementation of AB32, the Global Warming Solutions Act of 2006. To demonstrate the project will not conflict with implementation of AB32, the project needs to demonstrate the following:

- Light Industrial / Non-Stationary Source Uses: The project would reduce overall carbon emissions to 33% below business as usual. The 33% reduction should be an overall reduction for operational emissions, construction-related emissions and vehicular-related emissions.

- Heavy Industrial / Stationary Uses: Until the County of San Diego establishes its own significance threshold for Heavy Industrial / Stationary Source Uses, applicants should rely on the 10,000 metric tons of CO2 (or equivalent) per year threshold, identified by the South Coast Air Quality Management District (SCAQMD).The 10,000 metric ton threshold was found to capture more than 90% of emissions from stationary source projects in the South Coast air basin. The County is working towards establishing a threshold that is specifically suited to conditions in the San Diego region.

- All uses: Since construction-related GHG emissions are for a limited period of time, construction-related GHG emissions should be amortized over a 30-year period and added to the operational emissions.

Business as usual is defined as emissions that would be generated prior to AB32 related emission restrictions beginning in 2006 (e.g., 2005 Title 24 building standards).

For purposes of this analysis, the project is classified as a Light Industrial / Non-Stationary Source Use and therefore the applicable threshold identified for Light Industrial / Non-Stationary Source Uses applies.

1.2 Project Location and Description

The applicant proposes to develop the Hawano Industrial Business Park Development on a 79.6 gross acre site (64.01 net acres) located in the East Otay Mesa Area of San Diego County. The proposed project is bounded by Airway Road on the north, Via De La Amistad on the south, Airway Place on the west, and Alta Road on the east, as shown in Exhibit A.

The proposed project consists of approximately 852,426 square feet of business park use. It is anticipated that the project will be developed in two phases. Phase 1 of the project comprises of approximately 432,682 square feet of business park use on 33.47 net acres and is proposed to be completed in the year 2013. Phase 2 of the project comprises of approximately 419,744 square feet of business park use on 32.15 net acres and is proposed to be completed in the year 2014.The site plan is provided as Exhibit B.

1.3 Introduction to Climate Change

Global Climate Change (GCC) is defined as the change in average meteorological conditions on the Earth with respect to temperature, precipitation, and storms. Some data suggests that GCC 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 (GHG) 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 GHG resulting from human activity and industrialization over the past 200 years.

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 radiative 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 GHG. GHG are released into the atmosphere by both natural and anthropogenic (human) activity. Without the natural GHG 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 of the observed increase in the earth's temperature.

The purpose of this evaluation is to determine the GHG emissions associated with the development and operation of the proposed Hawano Industrial Business Park Development (project), and provide mitigation and/or project design measures to reduce emissions to the extent feasible. Due to the global nature of climate change, it is unlikely that GHG emissions resulting from any single project are likely to have a significant impact on overall climate change. Instead, GHG emissions from the proposed project would combine with GHG emissions emitted across California, the United States, and the world to cumulatively contribute to GCC.

1.4 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.

EXHIBIT A

LOCATION MAP

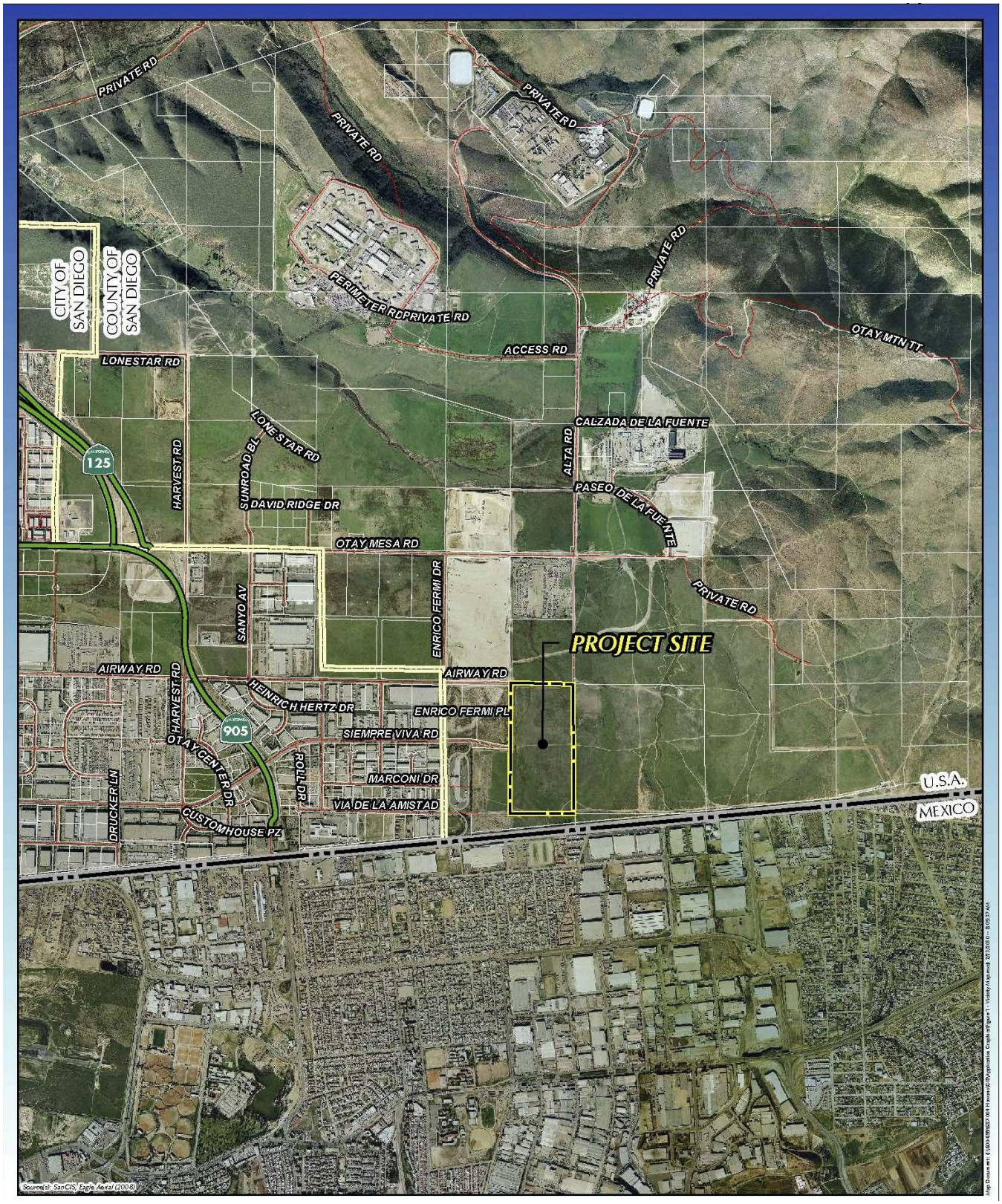
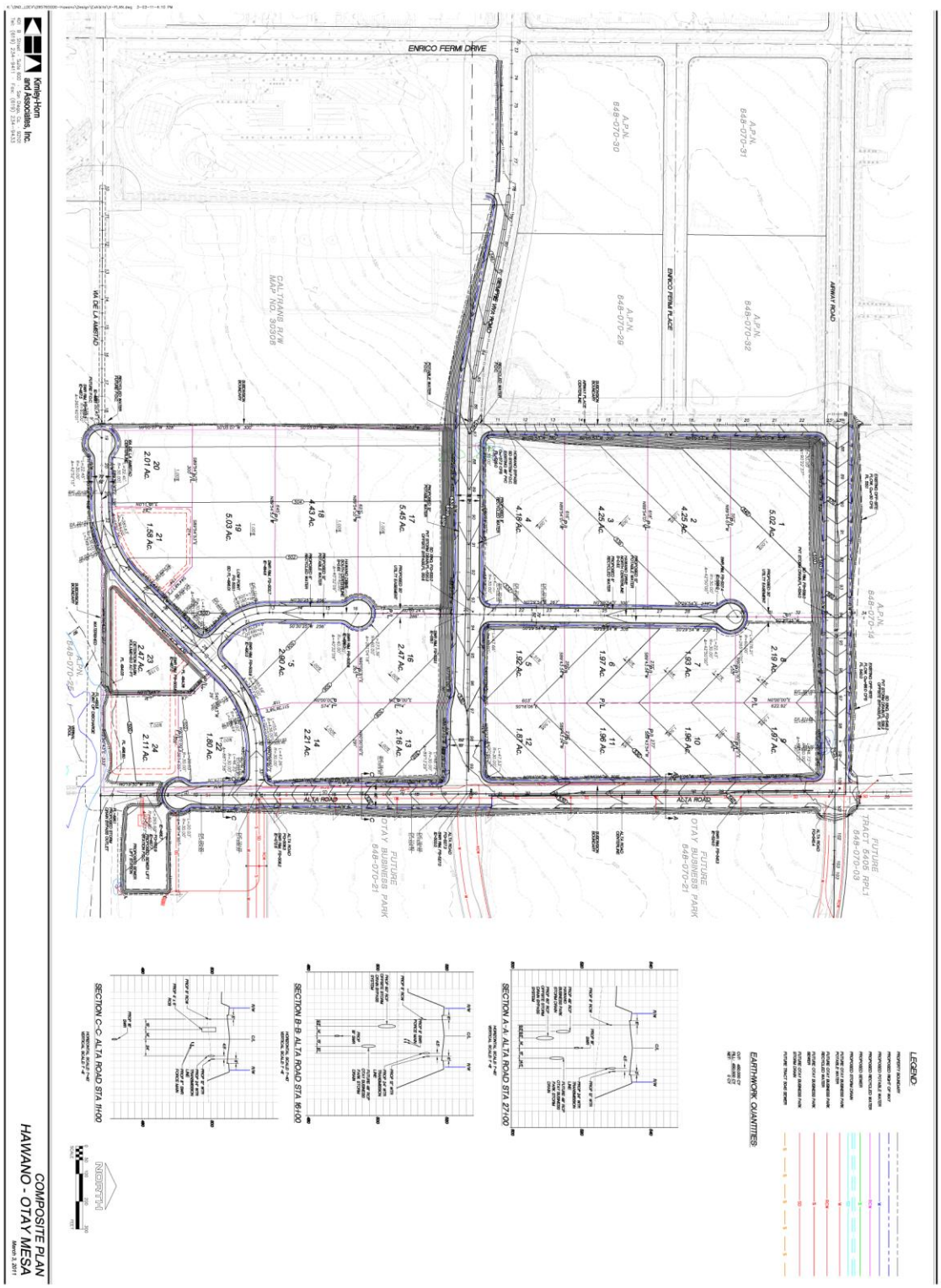


EXHIBIT B

SITE PLAN



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 opening of 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:

Additionally, Title 24 Part 6, enacted in 1978, required buildings to meet energy efficiency standards. It is estimated by the CEC that consumers have saved $15.8 billion on utility bills since 1978 as a result of Title 24, indirectly resulting in a reduction in greenhouse gas emissions that would otherwise result from increased energy use. Title 24 standards are updated periodically to allow for the consideration and implementation of new energy efficient technologies.

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 California. 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 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) both of these programs are aimed at light-duty auto and light-duty trucks.

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 million metric tons (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)[4]. Accordingly, 427 MMTs of CO_2 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 has 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.

California Climate Action Team (CAT):

In response to Executive Order S-3-05, the Secretary of the California Environmental Protection Agency (Cal EPA) created the CAT, which consists of 14 agencies and is divided into 11 subgroups, nine of which address specific economic sectors, and two that address implementing a multi-sector approach to addressing climate change. The subgroups consist of representatives from appropriate state agencies and departments.

[4] 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%).

In March 2006, the CAT published the Climate Action Team Report to Governor Schwarzenegger and the Legislature (the "2006 CAT Report").[5] The 2006 CAT Report identifies strategies that the state could pursue to reduce the potential for climate change from GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the Governor's targets are met and can be met with existing authority of state agencies. The CAT Report provides GHG emission reduction strategies, which include the following:

Climate Change Standards. AB 1493 (Pavley) requires the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in September 2004.

Green Buildings Initiative. Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by 2015, as compared with 2003 levels. The Executive Order and related action plan spell out specific actions state agencies are to take with state-owned and state-leased buildings. The order and plan also provide various strategies and incentives to encourage private building owners and operators to achieve the 20 percent target.

Diesel Anti-Idling. In July 2004, CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.

Building Energy Efficiency Standards in Place and in Progress. Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (applicable to newly constructed buildings, and additions to and alterations to existing buildings).

Appliance Energy Efficiency Standards in Place and in Progress. Public Resources Code 25402 authorizes the CEC to adopt and periodically update its appliance energy efficiency standards (applicable to devices and equipment using energy that are sold or offered for sale in California).

[5] California Climate Action Team, *Report to Governor Schwarzenegger and the California Legislature*, retrieved from http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF, 2006.

Fuel-Efficient Replacement Tires & Inflation Programs. State legislation established a statewide program to encourage the production and use of more efficient tires.

Measures to Improve Transportation Energy Efficiency. Builds on current efforts to provide a framework for expanded and new initiatives including incentives, tools, and information that advance cleaner transportation and reduce climate change emissions.

In March 2008, CAT subgroups submitted more than 100 GHG reduction measures to the CARB Office of Climate Change to be considered for inclusion in CARB's Scoping Plan. Cal EPA also submitted a Report Card collected from CAT agencies on proposed GHG reduction measures, including an estimate of the actual emissions reductions anticipated from those measures. This report will be updated annually, with the most recent update included in Scoping Plan adopted in December 2008

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 (RPS). On May 5, 2011, the California Public Utilities Commission adopted the Order Instituting the implementation and administration of the 33% RPS Program.

Electricity and natural gas services are provided to the proposed Project site by San Diego Gas and Electric (SDG&E). SDG&E's renewable portfolio included 11.9% percent renewable sources in 2010, primarily from wind, geothermal, and biomass. SDG&E currently estimates that it is on track to average 20% renewable energy by 2013, by

which time the majority of renewable sources will comprise wind and solar. (San Diego Union Tribune, 2011)

New CEQA Guidelines for Mitigation of Greenhouse Gas Emissions:

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 As directed by SB97, the Natural Resources Agency adopted Amendments to the CEQA Guidelines for greenhouse gas emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 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 numeric 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.

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, would not have 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.

Air District Recommendations for Significance Thresholds:

The several air districts in California are currently addressing climate change issues by developing significance thresholds, performance standards, and mitigation measures.

To date, no air district (other than the Bay Area Air Quality Management District), however, has adopted a threshold of significance under CEQA for GHG emissions for non-industrial projects. The South Coast Air Quality Management District ("SCAQMD") adopted a screening significance threshold for industrial projects of 10,000 MT CO_2 equivalent that incorporates a tiered decision tree approach to apply performance standards. SCAQMD also is in the preliminary stages of identifying screening significance thresholds for commercial and residential projects (3,000 MT CO_2 equivalent). (SCAQMD Working Group Meeting #14, November 19, 2009). Like CARB, SCAQMD Staff, in proposing interim industrial thresholds, explicitly stated in a December 5, 2008 report that a zero threshold would not be feasible to implement.

2.0 POTENTIAL CLIMATE CHANGE IMPACTS ON PROJECT SITE

2.1 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 GCC, 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 hydrochlorofluorocarbon (HCFC) emissions associated with project air conditioning leakage.

GHG 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 GHG are summarized in Table 2. As shown, GWP range from 1 for carbon dioxide to 23,900 for sulfur hexafluoride.

TABLE 2

ATMOSPHERIC LIFETIMES AND GLOBAL WARMING POTENTIALS OF SELECT GREENHOUSE GASES

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 is the most abundant, important, and variable of the GHG in the atmosphere. Without water vapor in the atmosphere, the climate would be too unstable to support life. Evaporation from the ocean is the main source of water vapor, accounting for nearly 85% of water vapor in the atmosphere. Other sources of water vapor include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves.

Carbon Dioxide: Carbon dioxide is created in the combustion of fossil fuels, forest clearing, and biomass burning. Human activity is more closely tied to carbon dioxide concentrations in the atmosphere than other GHG, and carbon dioxide is used as a reference to compare the impacts of other GHG. Concentrations of carbon dioxide in the atmosphere have typically increased at a rate of 0.5% per year and levels today are 30% higher than those prior to industrialization in the late 18^{th} and early 19^{th} Centuries.

Methane: Methane is a hydrocarbon produced through production and distribution of natural gas and oil, coal production, incomplete fuel combustion, waste decomposition, and animal digestion. Methane concentrations in the atmosphere are over twice their pre-industrial levels, and increasing at a rate of 0.6% each year, although this rate is thought to be slowing. The global warming potential of methane is 21.

Nitrous Oxide: Nitrous Oxide is emitted during fossil fuel combustion, biomass burning, and certain agricultural and industrial activities. Compared to carbon dioxide, nitrous oxide is an especially harmful GHG, with a global warming potential of 310.

Fluorinated Gases: Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful GHG that are emitted from a variety of industrial processes. Fluorinated gases are often used as substantiates for ozone-depleting substances (i.e., chlorofluorocarbons (CFCs), HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are some of the most potent GHG, they have high global warming potential, ranging from 140 to 23,900.

Aerosols: Aerosols are suspensions of particulate matter (PM) in a gaseous state emitted into the atmosphere through burning biomass (plant material) and fossil fuels.

Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon, also known as soot, is emitted during biomass burning and incomplete combustion with fossil fuels. Regulations for PM have been reducing aerosol concentrations in the United States; however it is expected that global concentrations are likely increasing as a function of other growing nations.

2.2 Health Effects

The potential health effects associated directly with 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 GCC 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 (American Lung Association, 2004). Exhibit C presents the potential impacts of global warming.

Specific health effects associated with directly emitted GHG emissions are as follows:

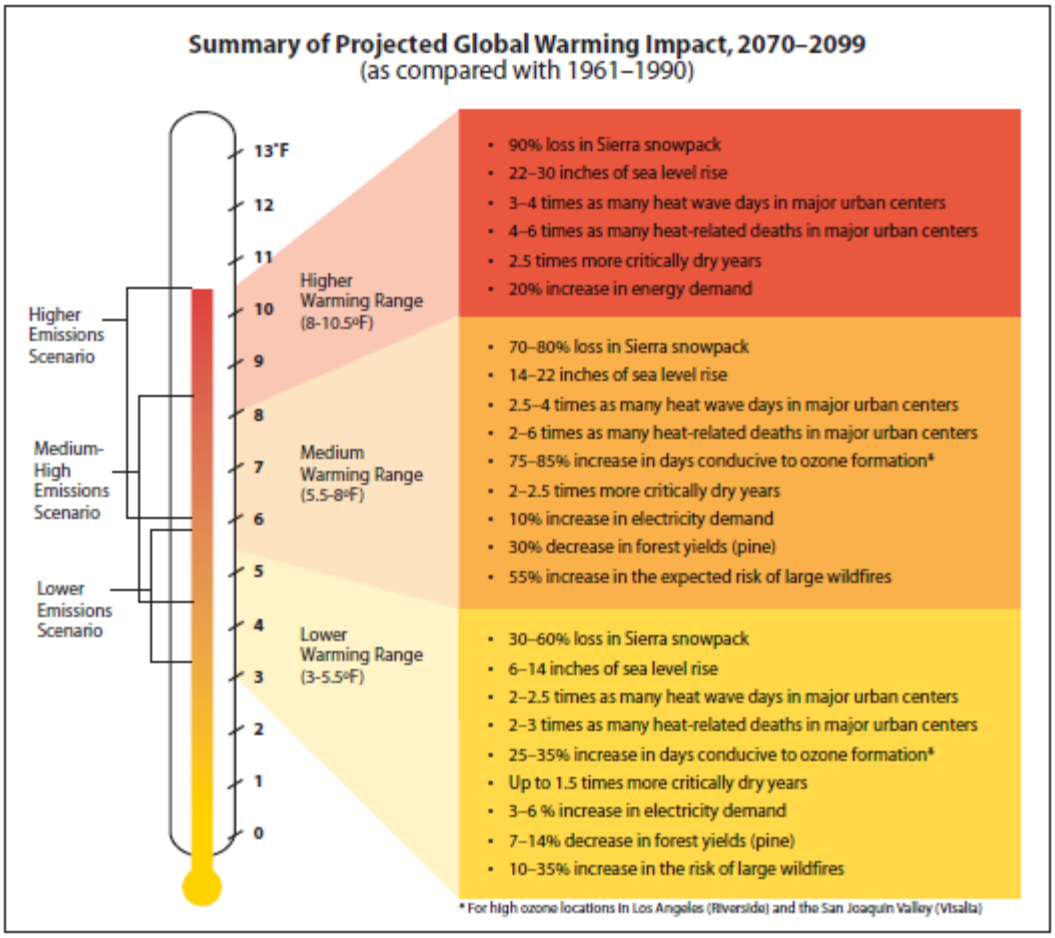
Water Vapor: There are no known direct health effects related to water vapor at this time. It should be noted however that when some pollutants react with water vapor, the reaction forms a transport mechanism for some of these pollutants to enter the human body through water vapor.

Carbon Dioxide: According to the National Institute for Occupational Safety and Health (NIOSH), high concentrations of carbon dioxide can result in health effects such as: headaches, dizziness, restlessness, difficulty breathing, sweating, increased heart rate, increased cardiac output, increased blood pressure, coma, asphyxia, and/or convulsions. It should be noted that current concentrations of carbon dioxide are estimated to be approximately 370 parts per million (ppm). The reference exposure level (level at which adverse health effects typically occur) is at exposure levels of 5,000 ppm averaged over 10 hours in a 40-hour workweek and short-term reference exposure

levels of 30,000 ppm averaged over a 15 minute period (NIOSH 2005). Therefore, current concentrations of carbon dioxide are well below hazardous levels.

EXHIBIT C

Summary of Projected Global Warming Impact, 2070-2099



Source: California Energy Commission, 2006. Our Changing Climate, Assessing the Risks to California, 2006 Biennial Report.

Methane: Methane is extremely reactive with oxidizers, halogens, and other halogen-containing compounds. Methane is also an asphyxiant, meaning it dilutes or displaces oxygen containing atmosphere, and may lead to death by asphyxiation (OSHA 2003).

Nitrous Oxide: Nitrous Oxide is often referred to as laughing gas; it is a colorless GHG. The health effects associated with exposure to elevated concentrations of nitrous oxide include dizziness, euphoria, slight hallucinations, and in extreme cases of elevated concentrations, nitrous oxide can also cause brain damage (OSHA 1999).

Fluorinated Gases: High concentrations of fluorinated gases can result in adverse health effects such as asphyxiation, dizziness, headache, cardiovascular disease, cardiac disorders, and in extreme cases, increased mortality (NIOSH 1989, 1997).

Aerosols: The health effects of aerosols are similar to that of other fine particulate matter. Thus, aerosols can cause elevated respiratory and cardiovascular diseases as well as increased mortality (NASA 2002).

2.3 Climate Change Impacts on the Project

AB 32 indicates that "the potential effects of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snow pack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidence of infections, disease, asthma, and other health-related problems" (AB 32, section 38501[a]).

Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation; this may include the use of increased electricity to cool buildings that would result in an increase of indirect air emissions. The impact of increased air pollution on persons working and patronizing the proposed industrial use would not be any greater than these people would experience without the proposed project. Rising temperatures also would affect water supply. The impact of reduced water supply on an industrial use would primarily affect landscape irrigation and restaurant operations. As both of these aspects are not essential uses of water, the impact of reduction in water supply on the proposed project would not be significant. Increasing global temperatures would be expected to increase the frequency of wildfires; however, the project site is located in an area that would not be conducive to widespread fires. It is unlikely that the project would be threatened from rising sea levels, as the project site is approximately 500-600 feet above mean sea level (amsl). Lastly, health-related problems associated with climate change discussed in the Existing Setting section above would be widespread and not directly associated with project development or directly affect project users.

In summary, climate change impacts on the proposed project and its users are considered not significant.

3.0 SIGNIFICANCE CRITERIA & ANALYSIS METHODOLOGIES

3.1 Guidelines for Determining Significance

On March 18, 2010, a number of amendments to the State CEQA Guidelines took effect. These amendments were in direct response to Senate Bill 97 of 2008 requiring the California Natural Resources Agency to provide instructions regarding greenhouse gas (GHG) emissions to lead agencies through amendments to the CEQA Guidelines by January 1, 2010. The amendments were adopted by the Natural Resources Agency December 30, 2009 and submitted to the Office of Administrative Law which certified the amendments. 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) provides that, "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 numeric 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.

The CEQA Initial Study Checklist was also amended to include the following questions with respect to 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?

Based on the memorandum Industrial Use / East Otay Mesa Specific Plan DPLU Interim Guidance for Greenhouse Gas (GHG) Analysis, Dated May 7, 2010: Until further direction is provided by the State, the County's interim guideline for determining significance is whether the project would conflict with implementation of AB32, the Global Warming Solutions Act of 2006. To demonstrate the project will not conflict with implementation of AB32, the project needs to demonstrate the following:

- Light Industrial / Non-Stationary Source Uses: The project would reduce overall carbon emissions to 33% below business as usual. The 33% reduction should be an overall reduction for operational emissions, construction-related emissions and vehicular-related emissions.

- Heavy Industrial / Stationary Uses: Until the County of San Diego establishes its own significance threshold for Heavy Industrial / Stationary Source Uses, applicants should rely on the 10,000 metric tons of CO2 (or equivalent) per year threshold, identified by the South Coast Air Quality Management District (SCAQMD).The 10,000 metric ton threshold was found to capture more than 90% of emissions from stationary source projects in the South Coast air basin. The County is working towards establishing a threshold that is specifically suited to conditions in the San Diego region.

- All uses: Since construction-related GHG emissions are for a limited period of time, construction-related GHG emissions should be amortized over a 30-year period and added to the operational emissions.

Business as usual is defined as emissions that would be generated prior to AB 32-related emission restrictions beginning in 2006 (e.g., 2005 Title 24 building standards). For purposes of this analysis, the project is classified as a Light Industrial / Non-Stationary Source Use and therefore the applicable threshold identified for Light Industrial / Non-Stationary Source Uses applies as follows:

- *The project would reduce overall carbon emissions to 33% below business as usual. The 33% reduction should be an overall reduction for operational emissions, construction-related emissions and vehicular-related emissions.*

3.2 Methodology & Assumptions

GHG emissions associated with the development and operation of the proposed project were estimated for the following five categories: (1) increases in emissions from short-term construction activity (fossil-fuel consumption); (2) increase in emissions from

electricity generation to provide power to project uses; (3) increase in emissions from natural gas use for project uses; (4) increase in emissions from water consumption for project uses; (5) increase in emissions from vehicular-exhaust emissions from daily vehicular activity as a result of the project; and (6) increase in emissions as a result of increased municipal solid waste generated by the proposed project.

CONSTRUCTION EMISSIONS

During the construction phase of the project, GHG emissions will be released through the burning of fossil-fuel in construction equipment. Emission forecasts for carbon dioxide were calculated based on the URBEMIS 2007 emissions inventory model. Since emissions of methane and nitrous oxide are not output by the URBEMIS model, these emissions were estimated based on emission factors provided in the document General Reporting Protocol for the Voluntary Reporting Program (The Climate Registry, January, 2009). Construction equipment and phasing estimates are based on discussions with the project team and are included in the report Hawano Industrial Business Park Development Air Quality Study (Urban Crossroads, Inc., November 2011). Additional details regarding construction emissions are presented in Section 4.0 of this report. See Appendix A for a summary of detailed calculations.

AREA SOURCE EMISSIONS

Another substantial source of GHG emissions is the combustion of fossil fuels for electricity production, cooking, and heating. While not released on-site, increased GHG emissions resulting from the added electrical demands of the project will be created, since electricity is often generated through the burning of coal, oil, or natural gas. Also, GHG will be released through project natural gas use.

GHG emissions resulting from project energy use were calculated based on average annual energy usage rates published by the California Climate Action Registry General Reporting Protocol, Version 3.1, January 2009 – Table III.6.1 (Warehouse and Storage). Power generation emission factors were obtained from the California Climate Action Registry General Reporting Protocol, Version 3.1, January 2009 – Table C.2 (CAMX - eGRID)

In order to forecast the GHG emissions resulting from natural gas combustion, usage estimates consistent with the South Coast Air Quality Management District's CEQA Handbook (1993). GHG emissions from natural gas usage were calculated based on U.S. EPA emission factors (Compilation of Air Pollutant Emission Factors, Volume 1, Chapter 1, External Combustion Sources—Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion, Table 1.4-2).

Emissions of GHG will also occur as a result of project water consumption. Water use and energy consumption are closely linked, especially in Southern California, where water supplies are limited and a significant portion of the water supply must be imported. Large amounts of energy are required for the conveyance, treatment, distribution, and end use of water, as well as wastewater treatment. Water consumption estimates are based on water usage estimates from the American Water Works Association – Estimating commercial, industrial and institutional water use on the basis of heated building area (June 2011)[6].

GHG emissions will also occur as a result of municipal solid waste generated by the proposed project. Solid waste generated by the proposed project has the potential to be disposed of in a landfill, where it will emit methane gas as it decomposes. Solid waste generation rates were estimated utilizing data provided by the California Integrated Waste Management Board, and emissions of methane gas resulting from project generated solid waste were estimated utilizing data provided in the document Solid Waste Management and Greenhouse Gases (United States Environmental Protection Agency, September 2006). See Appendix A for a summary of detailed calculations.

MOBILE SOURCE EMISSIONS

Project operational (vehicular) impacts are dependent on both overall daily vehicle trip generation and the effect of the project on peak hour traffic volumes and traffic operations in the vicinity of the project. The project related operational GHG impact centers on a worst-case 6,923 net Passenger Car Equivalent (PCE) vehicle trips generated by the project for Phase I (2013) and 13,639 net Passenger Car Equivalent (PCE) vehicle trips generated by the project for Phase I & II (2014). Trip characteristics

[6] http://library.conservefloridawater.org/publications/JAWWA2011_Estimating%20CII_M%20Morales.pdf

were available from the report, Traffic Impact Study for Hawano (Darnell & Associates, Inc., October, 2011).

From an GHG standpoint it is important to look at traffic generation in terms of actual vehicles rather than passenger car equivalents. The trip generation rate, as discussed in the traffic impact analysis, is reflective of a Passenger Car Equivalent (PCE) factor, thus the resulting number of "trips" is not necessarily the number of truck trips that will be generated by the project site. In order to derive the number of daily passenger car and truck trips from the PCE rates presented in the traffic study, fleet mix percentages were obtained from the study City of Fontana Truck Trip Generation Study (August 2003) for the light industrial land use category. Based on these fleet mix percentages, it is estimated that passenger vehicles would comprise approximately 78.6% of the vehicles visiting the site, and trucks would comprise approximately 21.4%. Of the number of trucks, 8% are assumed to be large two axle trucks, 3.9% are assumed to be three axle trucks, and 9.5% are assumed to have four or more axles. Thus it is estimated the project would result in 5,441 (Phase I) and 10,720 (Phase I & II) passenger vehicle trips and 1,482 (Phase I) 2,919 (Phase I & II) daily PCE truck trips. In order to adjust for actual trucks, this number is divided by the applicable PCE factor of 1.5 for two axle trucks, 2.0 for three axle trucks, and 3.0 for four or more axle trucks resulting in 724 (Phase I) and 1,425 (Phase I & II) daily truck trips. Thus the total number of trips in terms of actual vehicles by passenger cars and trucks is 6,165 (Phase I) and 12,145 (Phase I & II) daily vehicle trips. Applicable vehicle fleet characteristics are reflected in the URBEMIS 2007 model run.

Additionally, given the type and location of the project, the URBEMIS 2007 model default trip lengths have been adjusted to reflect a longer (more conservative) trip length. For passenger cars and trucks, the default URBEMIS 2007 model trip length is 14.7 one-way miles, for heavy trucks a more appropriate trip length distance is approximately 50 one-way miles. Therefore a separate emissions model runs for passenger cars and trucks and heavy trucks was utilized. Additionally, since emissions of methane and nitrous oxide are not output from the URBEMIS model, the California Climate Action Registry General Reporting Protocol, Version 3.1, January 2009 emission rates in grams per mile for methane and nitrous oxide are utilized. Detailed emissions calculations are provided in Appendix "A". .

4.0 GREENHOUSE GAS INVENTORY

4.1 Construction GHG Emissions

4.1.1 Heavy Construction Equipment

Construction activities associated with the proposed project will result in GHG emissions. Construction related GHG emissions are expected from the following construction equipment and construction activities:

- Mass Grading Mass Grading Exhaust Emissions

Phase I Construction (432,682 square feet)

- Underground Utility Construction Exhaust Emissions
- Off-Site Construction Exhaust Emissions
- Building Construction
- Paving Exhaust Emissions
- Architectural Coatings
- Construction Workers Commuting

Phase II Construction (419,744 square feet)

- Underground Utility Construction Exhaust Emissions
- Off-Site Construction Exhaust Emissions
- Building Construction
- Paving Exhaust Emissions
- Architectural Coatings
- Construction Workers Commuting

Based on latest discussions with the project team, it is assumed for purposes of this analysis that construction activity will be phased over the duration of approximately 12 months for each construction phase and mass grading activity will not overlap with any other phases of construction activity and the site would be mass graded prior to any additional construction for either phase of development. A separate emissions model run

was conducted for: (1) Mass Grading, (2) Phase I Construction, and (3) Phase II Construction

A more detailed discussion of each construction phase for the project is as provided in the following sections.

Mass Grading Exhaust Emissions

Exhaust emissions from grading activity result from both on-road and off-road heavy equipment operating during this activity. This activity is expected to last the duration of approximately six months. Based on discussions with the project team, it is assumed that the following pieces of equipment will be used during the grading phase of construction:

Mass Grading Equipment		
Description	**Qty**	**Hours/day**
Scrapers	3	8
Plate Compactors	2	8
Water Trucks	2	8
Graders	2	8
Rubber Tired Loaders	2	8
Rubber Tired Dozers	2	8

Underground Utility Construction Exhaust Emissions

Exhaust emissions will result from heavy equipment that will be operational during underground utility construction. The types of activities that generally take place may include general trench-work, pipe laying with associated base material and cover, ancillary earthwork, manholes, etc. This activity is assumed to take place following grading activity and concurrent with off-site construction activity, paving, building construction, and architectural coating for a duration of approximately six months. Based on discussions with the project team, it is assumed that the following pieces of equipment will be used during this phase of construction:

Underground Utility Equipment		
Description	**Qty**	**Hours/day**
Excavators	2	8
Other General Equipment	1	8
Tractors/Loaders/Backhoes	1	8

Off-Site Construction Exhaust Emissions

Off-site construction is expected to take place following grading activity concurrent with underground utility construction, paving, building construction, and architectural coatings, and consists of various off-site roadway improvements, the specifics of off-site roadway improvements are not known with a great deal of certainty at this time, as such the following construction equipment is assumed as a conservative measure in order to overstate rather than understate off-site construction impacts. Off-site construction activity is expected to take place over a period of approximately three months. Based on discussions with the project team, it is assumed that the following pieces of equipment will be utilized during this phase of construction:

Off-Site Construction Equipment		
Description	**Qty**	**Hours/day**
Excavators	2	8
Other General Equipment	1	8
Tractors/Loaders/Backhoes	1	8

Paving Exhaust Emissions

Paving activities include the movement of any remaining material as well as necessary curb and gutter work, road base material placement and blacktop. Paving activity is expected to take place following grading activity and concurrent with underground utility construction, off-site construction, building construction, and architectural coatings over a

period of approximately six months. A project of this size is anticipated to utilize the following pieces of equipment during this phase of construction:

Paving Equipment		
Description	**Qty**	**Hours/day**
Misc. Paving Equipment	2	8
Rollers	2	8
Pavers	1	8

Architectural Coatings

Emissions estimates for architectural coatings have been calculated using the URBEMIS 2007 model; worker trips during architectural coatings have also been included in calculations. The duration for architectural coatings (painting) is estimated to be 4 months or approximately 87 working-days of painting activity for each construction Phase.

4.1.2 Construction Worker VMTs

Emissions for construction worker vehicles traveling to and from the project site were estimated assuming the maximum projected workers at each location traveling to and from the site each weekday. URBEMIS 2007 model defaults were used as a "worst-case" scenario for worker trips based on the number/type of equipment used and amount of area disturbed based on discussion with the project team.

4.1.3 Construction Water Use

Emissions associated with water truck exhaust are included in the emissions estimates. There may also be indirect emissions associated with the amount of embodied energy required to deliver water to the site during construction activity, however this information is not readily available at this time thus quantifying indirect emissions from water use have not been included.

4.2 Operational GHG Emissions

4.2.1 Energy

Another substantial source of GHG emissions is the combustion of fossil fuels for electricity production and heating. While not released on-site, increased GHG emissions resulting from the added electrical demands of the project will be created, since electricity is often generated through the burning of coal, oil, or natural gas. Also, GHG will be released through project natural gas use.

4.2.1.1 Electricity

GHG emissions resulting from project energy use were calculated based on average annual energy usage rates published by the California Climate Action Registry General Reporting Protocol, Version 3.1, January 2009 – Table III.6.1 (Warehouse and Storage). Power generation emission factors were obtained from the California Climate Action Registry General Reporting Protocol, Version 3.1, January 2009 – Table C.2 (CAMX - eGRID)

4.2.1.2 Natural Gas

In order to forecast the GHG emissions resulting from natural gas combustion, usage estimates consistent with the South Coast Air Quality Management District's CEQA Handbook (1993). GHG emissions from natural gas usage were calculated based on U.S. EPA emission factors (Compilation of Air Pollutant Emission Factors, Volume 1, Chapter 1, External Combustion Sources—Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion, Table 1.4-2).

4.2.1.3 Water

Emissions of GHG will also occur as a result of project water consumption. Water use and energy consumption are closely linked, especially in Southern California, where water supplies are limited and a significant portion of the water supply must be imported. Large amounts of energy are required for the conveyance, treatment, distribution, and end use of water, as well as wastewater treatment. Water consumption estimates are based on water usage estimates

from the American Water Works Association – Estimating commercial, industrial and institutional water use on the basis of heated building area (June 2011)[7].

4.2.2 Transportation

Project operational (vehicular) impacts are dependent on both overall daily vehicle trip generation and the effect of the project on peak hour traffic volumes and traffic operations in the vicinity of the project. The project related operational GHG impact centers on a worst-case 6,923 net Passenger Car Equivalent (PCE) vehicle trips generated by the project for Phase I (2013) and 13,639 net Passenger Car Equivalent (PCE) vehicle trips generated by the project for Phase I & II (2014). Trip characteristics were available from the report, Traffic Impact Study for Hawano (Darnell & Associates, Inc., October, 2011).

From an GHG standpoint it is important to look at traffic generation in terms of actual vehicles rather than passenger car equivalents. The trip generation rate, as discussed in the traffic impact analysis, is reflective of a Passenger Car Equivalent (PCE) factor, thus the resulting number of "trips" is not necessarily the number of truck trips that will be generated by the project site. In order to derive the number of daily passenger car and truck trips from the PCE rates presented in the traffic study, fleet mix percentages were obtained from the study City of Fontana Truck Trip Generation Study (August 2003) for the light industrial land use category. Based on these fleet mix percentages, it is estimated that passenger vehicles would comprise approximately 78.6% of the vehicles visiting the site, and trucks would comprise approximately 21.4%. Of the number of trucks, 8% are assumed to be large two axle trucks, 3.9% are assumed to be three axle trucks, and 9.5% are assumed to have four or more axles. Thus it is estimated the project would result in 5,441 (Phase I) and 10,720 (Phase I & II) passenger vehicle trips and 1,482 (Phase I) 2,919 (Phase I & II) daily PCE truck trips. In order to adjust for actual trucks, this number is divided by the applicable PCE factor of 1.5 for two axle trucks, 2.0 for three axle trucks, and 3.0 for four or more axle trucks resulting in 724 (Phase I) and 1,425 (Phase I & II) daily truck trips. Thus the total number of trips in terms of actual vehicles by passenger cars and trucks is 6,165 (Phase I) and 12,145 (Phase I & II) daily vehicle trips. Applicable vehicle fleet characteristics are reflected in the URBEMIS 2007 model run.

[7] http://library.conservefloridawater.org/publications/JAWWA2011_Estimating%20CII_M%20Morales.pdf

Additionally, given the type and location of the project, the URBEMIS 2007 model default trip lengths have been adjusted to reflect a longer (more conservative) trip length. For passenger cars and trucks, the default URBEMIS 2007 model trip length is 14.7 one-way miles, for heavy trucks a more appropriate trip length distance is approximately 50 one-way miles. Therefore a separate emissions model runs for passenger cars and trucks and heavy trucks was utilized. Additionally, since emissions of methane and nitrous oxide are not output from the URBEMIS model, the California Climate Action Registry General Reporting Protocol, Version 3.1, January 2009 emission rates in grams per mile for methane and nitrous oxide are utilized. Detailed emissions calculations are provided in Appendix "A".

4.2.3 Solid Waste

GHG emissions will also occur as a result of municipal solid waste generated by the proposed project. Solid waste generated by the proposed project has the potential to be disposed of in a landfill, where it will emit methane gas as it decomposes. Solid waste generation rates were estimated utilizing data provided by the California Integrated Waste Management Board, and emissions of methane gas resulting from project generated solid waste were estimated utilizing data provided in the document Solid Waste Management and Greenhouse Gases (United States Environmental Protection Agency, September 2006).

4.2.4 Emissions Summaries

Table 3 presents total project greenhouse gas emissions per year for the Business as Usual (2006) scenario. Table 4 presents the total project greenhouse gas emissions per year for the 2020 scenario which also includes reductions achieved from regulatory requirements and reductions achieved from recommended mitigation measures.

TABLE 3

TOTAL PROJECT GREENHOUSE GAS EMISSIONS PER YEAR BUSINESS AS USUAL (2006)[a]

(METRIC TONS)

Project Buildout (Phase I & Phase II)					
Source	CO_2	N_2O		CH_4	
	mtpy[b]	mtpy	mtpy CO_2 EQ	mtpy	mtpy CO_2 EQ
Construction Emissions[a]	104.22	0.00267	0.83	0.00596	0.13

Mobile Source Emissions – Passenger Cars	18,479.60	0.41	128.11	0.73	15.35
Mobile Source Emissions – Trucks	23,625.90	0.11	33.06	0.11	2.38
Energy Use Emissions	2,127.87	0.02	6.20	0.09	1.89
Water Use Related Emissions	51.91	--	--	--	--
Natural Gas Emissions	1,614.66	0.03	9.30	0.03	0.63
Solid Waste Related Emissions				119.24	2,504.04
Total (metric tons per year)	46,004.20	0.57	177.5	120.21	2,524.42
Total (metric tons per year) CO2 Equivalent	***48,706.10***				

[a]Construction Emissions are amortized over a 30 year period

[b]mtpy = Metric Tons Per Year

TABLE 4

TOTAL PROJECT GREENHOUSE GAS EMISSIONS PER YEAR (2020)[a]

(METRIC TONS)

Project Buildout (Phase I & Phase II)					
Source	CO_2	N_2O		CH_4	
	mtpy[b]	mtpy	mtpy CO_2 EQ	mtpy	mtpy CO_2 EQ
Construction Emissions[a]	104.22	0.00267	0.83	0.00596	0.13
Mobile Source Emissions – Passenger Cars[c]	12,664.90	0.33	101.21	0.58	12.13
Mobile Source Emissions – Trucks[d]	21,171.95	0.11	33.06	0.11	2.38
Energy Use Emissions[e,f]	1,166.91	0.016	5.07	0.073	1.55
Water Use Related Emissions	51.91	--	--	--	--
Natural Gas Emissions[f]	1,081.82	0.02	6.23	0.02	0.42
Solid Waste Related Emissions[g]				59.62	1,252.02
Total (metric tons per year)	36,241.70	0.48	146.40	60.41	1,268.63
Total (metric tons per year) CO2 Equivalent	***37,656.73***				
% Reduction from BAU	***22.69***				

[a]Construction Emissions are amortized over a 30 year period

[b]mtpy = Metric Tons Per Year

[c]Includes 21% reduction from Pavley and 10% reduction for LCFS (applied to CO2 only)

[d]Includes 10% reduction for LCFS (applied to CO2 only)

[e]Includes 33% reduction from Renewable Portfolio Standards (RPS)

[f]Includes 18.15% reduction in electricity related emissions and a 33% reduction in natural gas related emissions for 33% efficiency beyond Title 24 Requirements. Percentages based on the CAPCOA document *Quantifying Greenhouse Gas Mitigation Measures* which states that for every 10% above Title 24, the GHG reduction effectiveness is 5.5% for electricity related emissions and 10% for natural gas related emissions.

[g]Includes a 50% reduction in solid-waste generation due to recycling requirements.

5.0 SUMMARY OF RECOMMENDED PROJECT DESIGN FEATURES, IMPACTS AND MITIGATION MEASURES

PROJECT-SPECIFIC MITIGATION

M-GCC-1 **Operational GHG Impacts**

Intent: In order to mitigate for impacts related to on-site long-term GHG emissions, design measures shall be incorporated into future site plans to achieve the objectives of AB 32. **Description of Requirement:** Implementing Site Plans shall include design measures to reduce on-site long-term energy consumption, operational GHG emissions by 33% below Title 24 requirements (for natural gas and electricity). The Site Plans shall incorporate the following:

Prior to the approval of future Site Plans for any lots within TM 5566, the Project applicant shall prepare a subsequent Title 24 Compliance report to identify measures incorporated into the Site Plan's design to reduce emissions of area-source energy consumption. The report shall identify measures that are physically and economically feasible to implement in the Site Plan design in order to achieve a performance standard of at least a 33% reduction in energy consumption as compared to the 2005 Title 24 requirements.

The Title 24 Compliance report shall cite references that estimate energy consumption reductions associated with Site Plan design features, and shall provide reduction credits for those design features that result in quantifiable reductions in energy consumption.

Examples of measures that would serve to assist in achieving the 33% energy consumption reduction target / performance standard may include, but shall not be limited to, the following (it being understood that certain of the measures described in the bullets below may be adopted by the Project applicant, to the extent such measures are found to be physically and economically feasible, in order to achieve the reductions specified above, and that not all or any such measures need to be adopted, and that other feasible measures not listed below may be adopted, as long as the above performance standard is met):

- Design buildings to use natural systems to reduce energy use. Locate and orient buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.
- Design buildings to maximize water efficiency and reduce water use (excluding irrigation) beyond the Energy Policy Act of 1992 guidelines for fixture performance. This measure is expected to reduce GHG emissions associated with water conveyance by approximately 28-30%[8].
- Provide interior and exterior collection and storage areas for recyclables and green waste, in locations that are easily accessible to employees and visitors. The location of such storage areas shall be clearly labeled on future Site Plans. This will reduce the amount of waste generated by building occupants and hauled to and disposed of in landfills[9].
- For site lighting, the project's power density shall be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific site lighting elements proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.
- For warehouse lighting, use T5HO lighting fixtures providing that general lighting will be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific site lighting elements proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.
- Install motion sensors on office lighting so that efficiency will be more efficient than required by Title 24 as specified by LEED Energy & Atmosphere Credit 1. The amount of GHG reductions shall be calculated for the specific site lighting elements proposed as a part of future site plans pursuant to this standard, and shall be documented in the Title 24 Compliance Report.
- Install skylights and energy efficient lighting that exceeds California Title 24 standards where feasible, including electronic dimming ballasts and computer-controlled daylight sensors for office lighting.

[8] The use of HET and EPA Certified WaterSense labeled faucets will result in a 30% reduction in water use from BAU conditions. Based on the LEED ® for New Construction Reference Guide, the typical flowrate for a water closet is 1.6 gallons per flush, for a low-flow water closet the flowrate is 1.1 gallons per flush which is an approximate 30% reduction in water usage. Additionally, a conventional kitchen sink has a flowrate of 2.5 gallons per minute and a conventional shower has a flowrate of 2.5 gallons per minute; the low-flow kitchen sink has a flowrate of 1.8 gallons per minute and the low-flow shower has a flowrate of 1.8 gallons per minute this is an approximate 28% reduction in water usage.

[9] This measure is consistent with the County of San Diego's Recycling Ordinance (Section 68.501 et seq. of the San Diego County Code of Regulatory Ordinances). Since the County's Recycling Ordinance exceeds the requirements of Title 24, GHG emission reductions above and beyond Title 24 requirements may be credited towards the Project's requirement to achieve a 33% reduction in emissions.

- Install exterior signage, traffic, and other outdoor lighting that utilizes light-emitting diode (LED) lighting that is approximately 70 percent more efficient than fluorescent signage.
- Use light colored "cool" roofs, cool pavements, and strategically placed shade trees.
- Require orientation of buildings to maximize passive solar heating during cool seasons, avoid solar heat gain during hot periods, enhance natural ventilation, and promote effective use of daylight. Building orientation, wiring, and plumbing should optimize and facilitate opportunities for on-site solar generation and heating.
- Limit the hours of operation of outdoor lighting as specified to meet LEED Energy & Atmosphere Credit 1.
- Install the photovoltaic cells (solar panels) or "thin film" on roofs and parking lots (which can provide added benefits of shading vehicles) as specified by LEED Energy & Atmosphere Credit 2 to off-set the Project's energy consumption. If the energy conservation measures implemented do not reduce GHG emissions by 33%, solar panels shall be installed to fulfill the remainder of the 33% requirement.

The Title 24 Compliance report shall only give emission reduction credits to those design features that are depicted on Site Plans or where evidence of compliance can otherwise be provided to the County DPLU. Approval of future Site Plans and/or construction permits shall not occur until it can be assured that the design features described in the Title 24 Compliance report (or other measures meeting the performance criteria specified above) have been depicted on the Site Plan or construction drawings, or if it can otherwise be demonstrated that the design features will be incorporated into the proposed development.

Documentation: The applicant shall prepare the Site Plans pursuant to this mitigation measure and in accordance with DPLU Form #506, *Applicant's Guide to Site Plan*. The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with all applicable review fees and deposits, along with evidence of compliance with as the requirements specified above. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur. **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure.

M-GCC-2 **Operational GHG Impacts**

Intent: In order to mitigate for impacts related to trucks idling on-site. **Description of Requirement:** Strategies shall be incorporated to reduce idling time of trucks through alternative technologies such as IdleAire, electrification of truck parking, and alternative energy sources to allow diesel engines to be completely turned off. These strategies shall be placed on future site plans (e.g., location of electric truck parking locations and alternative energy sources).

Documentation: The applicant shall prepare the Site Plans pursuant to this mitigation measure and in accordance with DPLU Form #506, *Applicant's Guide to Site Plan*. The applicant shall submit the Site Plans to the Department of Planning and Land Use, along with all applicable review fees and deposits, along with evidence of compliance. **Timing:** Pursuant to Section 3.3.1 of the EOMSP, review for compliance with this mitigation measure shall occur. **Monitoring:** The Department of Planning and Land Use shall review the Site Plans for conformance with this mitigation measure.

DETERMINATION OF SIGNIFICANCE

Significant Cumulative Impact GCC-1: There are currently no thresholds in place for evaluating the significance of GHG emissions in terms of their contribution to global climate change (GCC). The San Diego County DPLU has issued interim guidance for addressing GHG impacts. More specifically, the guideline states that a project is less than significant if it can achieve the GHG reduction mandates of AB 32, compliance with AB 32 requires an overall reduction by 33% of the Project's aggregate GHG emissions (including emissions from construction sources, operational sources, and mobile sources). Mitigation Measure M-GCC-1 requires the Project Applicant or Master Developer to prepare a subsequent Title 24 Compliance Report to demonstrate that the proposed Project would achieve a minimum 33% reduction from 2005 Title 24 standards. Mitigation Measure M-GCC-2 would further assist in achieving the required GHG reductions by limiting the amount of truck idling that would occur on-site under long-term operating conditions. These requirements would be enforced pursuant to Section 3.3.1 which states that development within the East Otay Mesa Specific Plan (EOMSP) area shall be subject to the approval of a Site Plan in conformance with Section 7150 of the County Zoning Ordinance. Implementation of Mitigation Measures M-GCC-1 and M-GCC-2, as well as mandatory compliance with AB 1493 and the LCFS, would reduce the Project's aggregate GHG emissions by 22.69%, as shown in Table 5, *Total Project Greenhouse Gas Emissions Per Year (2020) (Metric Tons)*. This level of reduction would notsatisfy the County's required reduction of 33% of aggregate GHG emissions. Since the majority (88.2%) of the Project's pre-mitigated emission levels would occur as a result of mobile source emissions, the only way to achieve the required reduction would be through

mitigation addressing mobile source emissions. However, additional mitigation measures are not available to reduce the Project's mobile source-related GHG emissions, as the Proejct applicant cannot feasibly control the length of VMTs or require additional pollution reduction measures in vehicles that would serve the site under either near-term construction or long-term operating conditions. Accordingly, the proposed Project's aggregate GHG emission would not be reduced to less than significant levels, and would represent a significant and unavoidable cumulative impact of Project development.

Although implementation of the proposed Project would result in cumulative impacts due to greenhouse gas emissions that would remain significant and unavoidable following mitigation, the Project is still being proposed without an alternative design because it would not be possible to develop 79.6 acres of light industrial land uses without resulting in significant impacts due to GHG emissions. The proposed Proejct merely implements the County's General Plan and EOMSP, both of which designate the 79.6-acre site for development with light industrial uses.

TABLE 5

TOTAL PROJECT GREENHOUSE GAS EMISSIONS PER YEAR (2020)[a]

(METRIC TONS)

Project Buildout (Phase I & Phase II)					
Source	CO_2	N_2O		CH_4	
	mtpy[b]	mtpy	mtpy CO_2 EQ	mtpy	mtpy CO_2 EQ
Construction Emissions[a]	104.22	0.00267	0.83	0.00596	0.13
Mobile Source Emissions – Passenger Cars[c]	12,664.90	0.33	101.21	0.58	12.13
Mobile Source Emissions – Trucks[d]	21,171.95	0.11	33.06	0.11	2.38
Energy Use Emissions[e,f]	1,166.91	0.016	5.07	0.073	1.55
Water Use Related Emissions	51.91	--	--	--	--
Natural Gas Emissions[f]	1,081.82	0.02	6.23	0.02	0.42
Solid Waste Related Emissions[g]				59.62	1,252.02
Total (metric tons per year)	36,241.70	0.48	146.40	60.41	1,268.63
Total (metric tons per year) CO2 Equivalent	***37,656.73***				
% Reduction from BAU	***22.69***				

[a]Construction Emissions are amortized over a 30 year period

[b]mtpy = Metric Tons Per Year

[c]Includes 21% reduction from Pavley and 10% reduction for LCFS (applied to CO2 only)

[d]Includes 10% reduction for LCFS (applied to CO2 only)

[e]Includes 33% reduction from Renewable Portfolio Standards (RPS)

[f]Includes 18.15% reduction in electricity related emissions and a 33% reduction in natural gas related emissions for 33% efficiency beyond Title 24 Requirements. Percentages based on the CAPCOA document *Quantifying Greenhouse Gas Mitigation Measures* which states that for every 10% above Title 24, the GHG reduction effectiveness is 5.5% for electricity related emissions and 10% for natural gas related emissions.

[g]Includes a 50% reduction in solid-waste generation due to recycling requirements.

6.0 REFERENCES

REFERENCES

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7.0 LIST OF PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

HASEEB QURESHI—SENIOR AIR QUALITY SPECIALIST

ARIC EVATT—PRINCIPAL

APPENDIX A

Greenhouse Gas Emissions Calculations

	Grams/Mile	
	N2O	CH4
Passenger Cars	0.0079	0.0147
Light Duty Trucks	0.0101	0.0157

Total VMT	48906138.3	(From URBEMIS x 365)
% VMT Passenger Cars	36679603.73	
% VMT Light Duty Trucks	12226534.58	

Grams/Year	
N2O	CH4
413256.8686	731146.7676

Metric Tons/Year	
N2O	CH4
0.413256869	0.731146768
N2O (CO2e)	CH4 (CO2e)
128.1096293	15.35408212

	Grams/Mile	
	N2O	CH4
Heavy Diesel Trucks	0.0048	0.0051

Total VMT	22214914.7	(From URBEMIS x 365)

Grams/Year	
N2O	CH4
106631.5906	113296.065

Metric Tons/Year	
N2O	CH4
0.11	0.11
N2O (CO2e)	CH4 (CO2e)
33.06	2.38

	kg/gallon		kg/gallon
	N2O	CH4	CO2
Diesel Fuel	0.00026	0.00058	10.15
Ratio	2.56158E-05	5.71429E-05	

	Metric Tons	
	N2O	CH4
CO2 (From Urbemis) x Ratio	0.00267	0.00596
	N2O (CO2e)	CH4 (CO2e)
	0.82760	0.12506

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Combined Annual Emissions Reports (Tons/Year)

File Name: U:\UcJobs_06600-07000\06900\06979\URBEMIS\Revised\Mass Grading Only.urb924

Project Name: Hawano Mass Grading Only

Project Location: California State-wide

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2011 TOTALS (tons/year unmitigated)	149.42
2011 TOTALS (tons/year mitigated)	149.42
Percent Reduction	0.00
2012 TOTALS (tons/year unmitigated)	863.33
2012 TOTALS (tons/year mitigated)	863.33
Percent Reduction	0.00

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: U:\UcJobs_06600-07000\06900\06979\URBEMIS\Revised\Phase 1 Construction.urb924

Project Name: Hawano Phase 1 Construction

Project Location: California State-wide

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2012 TOTALS (tons/year unmitigated)	1,138.65
2012 TOTALS (tons/year mitigated)	1,138.65
Percent Reduction	0.00
2013 TOTALS (tons/year unmitigated)	8.18
2013 TOTALS (tons/year mitigated)	8.18
Percent Reduction	0.00

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: U:\UcJobs_06600-07000\06900\06979\URBEMIS\Revised\Phase 2 Construction.urb924

Project Name: Hawano Phase 2 Construction

Project Location: California State-wide

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	CO2
2013 TOTALS (tons/year unmitigated)	1,128.78
2013 TOTALS (tons/year mitigated)	1,128.78
Percent Reduction	0.00
2014 TOTALS (tons/year unmitigated)	8.04
2014 TOTALS (tons/year mitigated)	8.04
Percent Reduction	0.00

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: U:\UcJobs_06600-07000\06900\06979\URBEMIS\Revised\Phase 1 & 2 Operations Trucks.urb924

Project Name: Hawano Operations Phase I and II Trucks

Project Location: California State-wide

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Industrial park	26,043.06
TOTALS (tons/year, unmitigated)	26,043.06

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2006 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Industrial park		1.68	1000 sq ft	852.42	1,432.07	60,862.78
					1,432.07	60,862.78

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.8	93.6	4.6
Light Truck 3751-5750 lbs	0.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	50.9	0.0	42.9	57.1
Med-Heavy Truck 14,001-33,000 lbs	18.9	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	30.2	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	54.3	45.7	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	16.8	7.1	7.9	50.0	50.0	50.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Industrial park				41.5	20.8	37.8

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: U:\UcJobs_06600-07000\06900\06979\URBEMIS\Revised\Phase 1 & 2 Operations Trucks.urb924

Project Name: Hawano Operations Phase I and II Trucks

Project Location: California State-wide

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	CO2
Industrial park	25,931.20
TOTALS (tons/year, unmitigated)	25,931.20

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Industrial park		1.68	1000 sq ft	852.42	1,432.07	60,862.78
					1,432.07	60,862.78

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	0.0	0.6	99.2	0.2
Light Truck < 3750 lbs	0.0	1.8	93.6	4.6
Light Truck 3751-5750 lbs	0.0	0.5	99.5	0.0
Med Truck 5751-8500 lbs	0.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	0.0	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	50.9	0.0	42.9	57.1
Med-Heavy Truck 14,001-33,000 lbs	18.9	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	30.2	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	100.0
Motorcycle	0.0	54.3	45.7	0.0
School Bus	0.0	0.0	0.0	100.0
Motor Home	0.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	16.8	7.1	7.9	50.0	50.0	50.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Industrial park				41.5	20.8	37.8

GREENHOUSE GAS EMISSIONS RESULTING FROM ELECTRICITY USE

Input	852,426	SF Industrial Space	6,478,438	Annual Energy Usage (kWh)
	7.60	Avg Annual Energy Usage Rate (kWh/SF)[1]		
Output	2,127.87	CO2 Emissions (mtpy)	0.72412	CO2 produced per kWh (lbs)[2]
	0.02	N2O Emissions (mtpy)	0.0000081	N2O produced per kWh (lbs)[2]
	0.09	CH4 Emissions (mtpy)	0.0000302	CH4 produced per kWh (lbs)[2]

1Source: California Climate Action Registry General Reporting Protocol, Version 3.1, Jan. 2009, Table III.6.1

2Source: Emission factors for electricity use from California Climate Action Registry General Reporting Protocol Jan 2009 Version 3.1

mtpy= metric tons per year

GREENHOUSE GAS EMISSIONS RESULTING FROM NATURAL GAS USE

Input	852,426	SF Retail Space	29,664,425	Annual NG Usage (CF)	
	2.90	Avg Monthly NG Rate (CF/SF)[1]	NG Emission Factors		
			CO2:	0.12	lb/CF
			N2O:	2.2E-06	lb/CF
Output	1,614.66	CO2 Emissions (mtpy)	CH4:	2.3E-06	lb/CF
	0.03	N2O Emissions (mtpy)			
	0.03	CH4 Emissions (mtpy)			

[1]Source: SCAQMD CEQA Handbook, 1993
mtpy= metric tons per year

GREENHOUSE GAS EMISSIONS RESULTING FROM WATER USE

Input	852,426	Square Feet Retail Space	12,445,420	Annual Water Usage (gal)
	14.60	Avg Annual Water Usage Rate (gal/SF)[1]	158,057	Resulting Electricity Use (kWh)
			0.0127	Water Embodied Energy (kWh/gal)[3]
Output	51.91	CO2 Emissions (mtpy)	0.72412	CO2 produced per kWh (lbs)[2]
	0.00	N2O Emissions (mtpy)	0.0000081	N2O produced per kWh (lbs)[2]
	0.00	CH4 Emissions (mtpy)	0.0000302	CH4 produced per kWh (lbs)[2]

[1]Source: American Water Works Association. Estimated Average water use coefficients and associated statistics for CII sectors (Warehouse, distribution - 75th percentile) 0.046 gallons per square foot per day

[2]Emission factors for electricity use from California Climate Action Registry General Reporting Protocol April 2009 Version 3.1

[3]California Energy Commission. 2005, November. California's Water-Energy Relationship. CEC-700.2005-011-SF. Table 1-3

mtpy= metric tons per year

GREENHOUSE GAS EMISSIONS RESULTING FROM MUNICIPAL SOLID WASTE (MSW) GENERATION

Input	852,426	Square Feet (SF)	9,206	Annual MSW Generation (tons)
	0.0108	Avg. MSW generation factor (tons/SF/yr)[1]		
Output	119.24	CH4 Emissions (mtpy)	0.0129523	CH4 produced per ton MSW (metric tons)[2]

[1] Source: California Integrated Waste Management Board

[2] Source: United States Environmental Protection Agency: Solid Waste Management and Greenhouse Gases