2.2 Air Quality/Global Climate Change

Air quality impacts are addressed in Section 4.9 of the EOMSP Final EIR. The previously certified Final EIR indicated that the EOMSP may result in significant air quality impacts. The Final EIR concluded that air quality in the specific plan area would not be significantly affected by temporary and localized construction emissions; however, the specific plan would have significant impacts to regional air quality due to the traffic emissions generated during the EOMSP implementation and operation. Mitigation measures were required in the EOMSP Final EIR. The County determined in the *Environmental Review Update Checklist Form for Projects with Previously Approved Environmental Documents* for the proposed project that despite the implementation of prior measures (including best management practices), there would be a potentially significant impact on regional air quality related to fugitive dust and ozone precursors during project construction and operation. Since certification of the EOMSP Final EIR in 1994, the San Diego area has been classified as a nonattainment area under the California air quality standards for ozone and particulate matter, which is a changed circumstance from the prior EOMSP Final EIR.

Scientific Resources Associated (SRA) prepared a project-specific air quality technical report to evaluate the construction and operational emissions of the proposed project and cumulative air emissions (SRA 2009). SRA also completed a Global Climate Change Evaluation for the project to assess the potential impacts of project-related greenhouse gas (GHG) emissions (SRA 2010). The following subchapter summarizes information and data contained in these technical studies. Appendices D and E to this SEIR contain the air quality report and global climate change evaluation, respectively, in their entirety.

2.2.1 Discussion of Existing Conditions Relating to Air Quality

Climate and Meteorology

The proposed project site is located within the San Diego Air Basin (SDAB), which is a generally homogenous climatic zone that includes all of western San Diego County. The climate of the SDAB is dominated by a semi-permanent high-pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. The high-pressure cell also creates two types of temperature inversions that may act to degrade local air quality.

Subsidence inversions occur during the warmer months as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion — a radiant inversion — develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses also can trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce ozone (O_3), commonly known as smog.

Air Quality Regulatory Setting

Air quality is defined by ambient air concentrations of specified pollutants identified by the United States Environmental Protection Agency (USEPA) to be of concern with respect to the health and welfare of the general public. The USEPA is responsible for enforcing the federal Clean Air Act (CAA) of 1970 and its

1977 and 1990 amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several pollutants (called 'criteria pollutants'). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Table 2.2-2 presents a summary of the ambient air quality standards adopted by the federal and California Clean Air Acts.

The California Air Resources Board (CARB) is the state regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and California Ambient Air Quality Standards (CAAQS). The San Diego Air Pollution Control District (APCD) is the local agency responsible for the administration and enforcement of air quality regulations for San Diego County. The APCD and SANDAG are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB.

The CAA plan for San Diego County, Regional Air Quality Strategies (RAQS), was initially adopted in 1991 and is updated on a triennial basis. The RAQS was most recently updated in 2004 and outlines APCD plans and control measures designed to attain the state air quality standards for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of the County's General Plan. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS.

The APCD has also developed the air basin's input to the State Implementation Plan (SIP), which is required under the federal CAA for areas that are out of attainment of air quality standards. The latest SIP update was submitted by the CARB to the USEPA in 1998. The attainment schedule in the SIP called for the SDAB to attain the NAAQS for O_3 by 1999. The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by the APCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for O_3.

Attainment (long-term maintenance) of the standards is the goal of each air basin. As of July 28, 2003, the San Diego Air Basin has been reclassified as an attainment area for the 1-hour NAAQS for O_3. On April 15, 2004, the SDAB was designated a basic nonattainment area for the 8-hour NAAQS for O_3. The SDAB is in attainment for the NAAQS for all other criteria pollutants. The SDAB is currently classified as a nonattainment area under the CAAQS for O_3 and particulate matter less than or equal to 10 microns (PM_{10}).

Background Air Quality

The APCD operates a network of ambient air monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient

monitoring stations to the project site are the Otay Mesa-Paseo International station and the Chula Vista station (which is the nearest station that measures particulate matter less than or equal to 2.5 microns [$PM_{2.5}$]). Because the Otay Mesa monitoring station is located in areas where there is substantial traffic congestion and near the U.S.-Mexico International Border, it is likely that pollutant concentrations measured at those monitoring stations are slightly higher than concentrations that would be observed or measured in the project area, and would thus provide a conservative estimate of background ambient air quality. Ambient concentrations of pollutants over the last three years are presented in Table 2 of the Air Quality Technical Appendix (Appendix D).

Based on the monitoring data, air quality has shown improvement in the SDAB such that the 8-hour federal ozone standard has not been exceeded at the Otay Mesa monitoring station during the period from 2004 through 2006. Due to measured exceedances at other monitoring stations, however, the SDAB was classified as nonattainment for the 8-hour NAAQS for O_3. The Otay Mesa monitoring station regularly experiences exceedances of the 24-hour and annual CAAQS for PM_{10}. The data from the monitoring stations indicate that air quality is in attainment of all other standards.

Global Climate Change

Regulatory Framework

International and Federal Legislation

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess "the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation" (AEP 2007).

The United States joined other countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC was entered on March 21, 1994. Under the Convention, governments: gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change (AEP 2007).

The Kyoto Protocol is a treaty made under the UNFCCC. Countries can sign the treaty to demonstrate their commitment to reduce their emissions of GHGs or engage in emissions trading. More than 160 countries, 55 percent of global emissions, are under the protocol. United States Vice President, Al Gore, symbolically signed the Protocol in 1998. However, in order for the Protocol to be formally adopted, or ratified, it must be adopted by the U.S. Senate, which to date has not occurred.

The Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere — chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform — were to be phased out by 2000 (2005 for methyl chloroform).

In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50

initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in GHG emissions.

On April 17, 2009, USEPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA: the Endangerment Finding and the Cause or Contribute Finding. Under the Endangerment Finding, the Administrator found that the current and projected concentrations of the six key well-mixed GHGs — carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations. Under the Cause or Contribute Finding, the Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare. These findings do not themselves impose any requirements on industry or other entities; however, this action is a prerequisite to finalizing USEPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by USEPA and U.S. Department of Transportation's National Highway Safety Administration on September 15, 2009.

On March 10, 2009, USEPA proposed a rule that requires mandatory reporting of GHG emissions from large sources in the United States. The proposed rule would collect accurate and comprehensive emissions data to inform future policy decisions. USEPA proposes that suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions submit annual reports to USEPA. The gases covered by the proposed rule are CO_2, CH_4, N_2O, HFC, PFC, SF_6, and other fluorinated gases, including nitrogen trifluoride (NF_3) and hydrofluorinated ethers (HFEs).

The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, President Obama announced plans to increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 miles per gallon by 2016.

California Legislation

Although not originally intended to reduce GHG emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest amendments were made in October 2005. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency results in decreased GHG emissions.

California Assembly Bill (AB) 1493 (Pavley) enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030 (AEP 2007).

California Governor Arnold Schwarzenegger announced on June 1, 2005 through Executive Order S-3-05, GHG emission reduction targets as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. Some literature equates these reductions to 11 percent by 2010 and 25 percent by 2020.

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires the CARB, the State agency charged with regulating statewide air quality, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020. AB 32 establishes a multi-year timeline for the development and implementation of GHG reporting and mitigation policy. The first step is the development of so-called "early actions" measures by June 30, 2007. A draft version of these early action measures was circulated for public comment beginning on April 20, 2007, and finalized in May 2007. Measures included represent discrete opportunities to achieve GHG reductions that were proposed to take legal effect by January 1, 2010. At this time, regulations have been adopted for the nine early action measures that were identified, the most prominent of which is the Low Carbon Fuel Standard (LCFS; discussed below). Three of the nine sets of regulations are not yet in effect and are currently being reviewed by the Office of Administrative Law (California Legislative Analyst's Office 2010). As the policy making process continues, CARB considered a broader set of mitigation measures, including carbon sequestration projects and best management practices that are technologically feasible and cost-effective. GHGs as defined under AB 32 include: CO_2, CH_4, N_2O, HFC, PFC, and SF_6.

AB 32 required that by January 1, 2008, CARB determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. The CARB has estimated that the 1990 GHG emissions level was 427 million metric tons (MMtons) net carbon dioxide equivalent (CO_2 Eq.). (CARB 2007a). In 2004, the emissions were estimated at 480 MMtons net CO_2 Eq. (CARB 2007a). The CARB estimates that a reduction of 173 MMtons CO_2 Eq. emissions below business-as-usual would be required by 2020 to meet the 1990 levels (CARB 2007a). This amounts to a 15 percent reduction from today's levels, and a 30 percent reduction from projected business-as-usual levels in 2020 (CARB 2008).

Executive Order S-01-07 was enacted by the Governor on January 18, 2007. Essentially, the order mandates the following: 1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and 2) that a LCFS for transportation fuels be established for California.

Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. In compliance, the Governor's Office of Planning and Research published a technical advisory on CEQA and Climate Change on June 9, 2008 recommending that CEQA analysis include identification of GHG emissions, determine the level of significance, and mitigate impacts, and in April 2009 it proposed amendments to CEQA to incorporate GHG emissions. On December 30, 2009, the Natural Resources Agency adopted the proposed amendments, which became effective March 18, 2010.

Senate Bill 375 requires that regions which have a metropolitan planning organization must adopt a sustainable communities strategy designed to achieve certain goals for the reduction of GHG emissions as part of their regional transportation plans. The bill finds that GHG from autos and light trucks can be substantially reduced by new vehicle technology, but even so "it will be necessary to achieve significant additional GHG reductions from changed land use patterns and improved

transportation" in order to achieve the goals of AB 32. SB 375 requires the new CEQA provisions be enacted to "encourage developers to submit applications and local governments to make land use decisions that will help the state achieve its goals under AB 32" and that "current planning models and analytical techniques used for making transportation infrastructure decisions and for air quality planning should be able to assess the effects of policy choices, such as residential development patterns, expanded transit service and accessibility, the walkability of communities and the use of economic incentives and disincentives."

Local Regulations

The County is working to develop a comprehensive strategy that will enhance the sustainability of County business operations and communities, building on the many energy efficient and environmentally sound practices already in place in County departments. Additionally, the County is working on the General Plan Update. The General Plan Update will result in development of an implementation plan for GHG reduction measures which will include the following actions:

- Prepare a climate change action plan with a baseline inventory and emissions reduction targets for GHG emissions from all sources.

- Develop regulations and procedures to encourage the design and construction of new buildings in accordance with "green building" programs.

- Develop regulations that encourage the use of energy recovery, as well as photovoltaic and wind energy in appropriate areas.

2.2.2 Guidelines for the Determination of Significance

Air Quality

The following guidelines are based on the Guidelines for Determining Significance and Report Content Requirements for Air Quality, approved by DPLU on March 19, 2007.

The proposed project would have a significant impact on regional and local air quality if it would:

1) Conflict or obstruct the implementation of the San Diego RAQS or applicable portions of the SIP.

2) Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Create objectionable odors affecting a substantial number of people.

5) Expose sensitive receptors to an maximum incremental cancer risk that exceeds one in one million unless the project implements Toxics Best Available Control Technology (T-BACT), in

which case the significance threshold is 10 in one million, or a health hazard index of one or more.

6) Result in a cumulatively considerable net increase of PM_{10}, O_3 precursors, oxides of nitrogen (NO_X) and Volatile Organic Compounds (VOCs).

Greenhouse Gas Emissions

DPLU has developed its draft *Interim Approach to Addressing Climate Change in CEQA Documents* (County 2009a) that presents DPLU's initial draft to address global climate change in CEQA documents. The guidelines provide initial screening criteria for global climate change analyses, as well as draft guidance for the determination of significance.

The DPLU has indicated that project sizes estimated to emit more than 900 metric tons (Mtons) of GHGs would be required to conduct a GHG analysis. The 900-Mton screening threshold for determining when a GHG analysis is required was chosen based on available guidance from California Air Pollution Control Officers Association's (CAPCOA's) *CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (CAPCOA 2008). This White Paper references a 900-Mton guideline as a conservative threshold for requiring further analysis and mitigation.

DPLU's draft guideline for determining significance has been developed based on the goals of AB 32. The guideline addresses the potential cumulative impacts that a project's GHG emissions could have on global climate change. Since global climate change is a global phenomenon, no direct impact would be identified for an individual land development project. The following criterion is considered to establish a significance threshold for global climate change impacts:

1) The project cannot demonstrate a reduction in the project's operational and construction emissions to 28.3 percent below "business as usual."

Projects that meet the criterion for conducting a climate change analysis are required to conduct a GHG inventory and disclose GHG emissions associated with project implementation and operation under "business as usual." "Business as usual" is defined as the emissions that would have occurred in the absence of reductions mandated under AB 32. Based on the latest guidelines and baseline emission calculations, for energy efficiency, "business as usual" is considered to be the equivalent of the energy efficiencies required in Title 24 as of 2005.

For projects to demonstrate that they do not conflict with the goals and policies of AB 32, overall construction, operation, and vehicular emissions associated with a project must be reduced by 28.3 percent from "business as usual" emission levels. According to the San Diego County GHG Inventory (SDCGHGI) published by the School of Law Energy Policy Initiative Center (EPIC) at the University of San Diego (USD), a majority of the region's emissions are attributable to on-road transportation, with the next largest source of GHG emissions attributable to electricity generation. Similarly, a majority of the emissions resulting from land development projects will be attributable to on-road transportation emissions. According to the SDCGHGI study, the emission reductions for on-road transportation measures will be achieved in a variety of ways, including through regulation aimed at increasing fuel efficiency standards and decreasing vehicle emissions. These regulations are outside the control of project applicants.

2.2.3 Analysis of Project Effects and Determination as to Significance

The following analysis addresses the potential air quality impacts associated with construction and operation of an industrial park including short-term emissions of dust and heavy equipment exhaust during grading and construction, long-term regional emissions of vehicular exhaust from complete buildout of the proposed project, microscale accumulation of vehicular exhaust Carbon monoxide (CO) creating air pollution "hot spots," and toxic emissions. Project-related air quality impacts were addressed based on the above significance guidelines and using analysis guidance documents prepared by a wide variety of agencies (USEPA, CARB, Caltrans, APCD, etc.).

The proposed project involves the subdivision of the project site and site preparation through preliminary grading as described in Chapter 1.0 of this report. Individual tenants, land uses or specific building projects have not yet been identified and emissions associated with finish construction would, therefore, be evaluated on a project-specific basis at the time future project applicant(s) propose site plans and/or major use permits for the individual lots. No lots would be developed without such project-specific evaluation. For the purposes of the analysis, the nearest existing receptors were located from information in the noise assessment and from aerial photographs of the project area. Four individual receptors at two different locations were identified in the project vicinity: three receptors (homes) are located along Otay Mesa Road approximately 0.75 mile west of the project site and one residential receptor (home) is located approximately 1 mile to the north on Kuebler Ranch Road. See Figure 3.5-1 for an illustration of receptor locations. The localized air quality analysis focuses on potential impacts to these receptors.

2.2.3.1 *Construction Emissions Criteria Pollutants (Guidelines 1, 2 and 3)*

Emissions from site preparation through grading phase were evaluated based on the methodologies recommended in the CEQA Air Quality Handbook (South Coast Air Quality Management District [SCAQMD] 1993). Emission factors from the California Air Resources Board's OFFROAD model (CARB 2007b) were used to estimate emissions from heavy equipment. Emissions of fugitive dust were estimated based on methodologies recommended in the URBEMIS2007 model (Rimpo and Associates 2007) and CEQA Air Quality Handbook for earthmoving activities. Table 4 in the Air Quality Technical Appendix (Appendix D) presents a summary of the construction phases by unit and crew and equipment needs for the grading and site preparation activities defined by the project applicant.

To estimate emissions associated with construction worker commutes, the EMFAC2007 model (CARB 2007c) was used. Construction worker traffic was conservatively assumed to be comprised of light duty trucks (i.e., small trucks, sport utility vehicles [SUVs], and vans). For estimating emission factors associated with light duty trucks, it was assumed that these vehicles would be a mix of non-catalytic, catalytic, and diesel vehicles as indicated in the EMFAC2007 outputs. For conservative purposes, emission factors representing the vehicle mix for 2010 (i.e., the year Phase 1 grading is projected to commence) were used to estimate emissions; based on the results of the EMFAC2007 model for subsequent years, emissions would decrease on an annual basis from 2010 onward due to phase-out of higher polluting vehicles and implementation of more stringent emission standards that are taken into account in the EMFAC2007 model including requirements for use of low-sulfur diesel fuel. Vehicle speed and vehicle miles traveled assumptions are described in the Air Quality Technical Report (Appendix D).

To estimate fugitive dust emissions associated with site grading, it was assumed that 25 percent of the entire project area for each unit could be graded in a single day. Fugitive dust emissions were estimated using the emission factor for PM_{10} emissions from the URBEMIS2007 model of 10 pounds per acre per day (lbs/acre/day). Assuming a maximum of 40 acres would be graded in a single day, the maximum uncontrolled daily PM_{10} emissions would be as much as 400 lbs/day.

The most dominant portion of fugitive construction dust is within the very large diameter range that remains suspended in the air for only a few seconds. Such large particles rapidly settle out on horizontal surfaces such as parked cars, outdoor furniture, landscaping foliage, etc. The potential deposition distance is stated by the USEPA (AP-42, Section 13.2) to be less than 100 feet (USEPA 1995a). As this development is proposed on vacant land and there are no adjacent homes within 100 feet of the property, the dust-soiling nuisance potential during project construction would be minimal and less than significant.

In accordance with the San Diego County Grading Ordinance, Section 87.428, dust control measures must be implemented for all grading projects taking place in the County of San Diego. The EOMSP Final EIR also lists similar construction mitigation measures directed at controlling dust during Specific Plan buildout. BMPs to reduce the amount of fugitive dust generated from construction of the proposed project include the following:

- Multiple applications of water during grading between dozer/scraper passes (a minimum of three times per day)
- Paving, chip sealing or chemical stabilization of internal roadways after completion of grading
- Use of sweepers or water trucks to remove "track-out" at any point of public street access and termination of grading if winds exceed 25 mph
- Stabilization of dirt storage piles by chemical binders, tarps, fencing or other erosion control
- Halt grading during periods of high winds (greater than 25 mph)
- Stabilize graded areas (pave roads, hydroseed open areas, etc.) as soon as practical
- Limit vehicles speeds on unpaved surfaces to 10 mph
- Cover trucks hauling dirt for cut and fill operations

With the application of water at least three times daily, assuming a control efficiency of 61 percent, maximum daily emissions of fugitive dust during grading would be approximately 156 lbs/day. Daily emissions of $PM_{2.5}$ would be approximately 33 lbs/day. Implementation of the other BMPs would further lessen dust emissions during project grading operations.

To estimate maximum daily and total annual construction emissions, it was assumed that grading and site preparation for Units 1 through 3 could occur simultaneously, and that grading and site preparation for Units 4 and 5 would follow. A second grading scenario of all five units being graded at once is also analyzed. Under both scenarios, it was assumed that daily grading would affect up to 40 acres per day. It was also assumed, for both grading scenarios, that all of the construction activities defined for a given grading phase could occur simultaneously in different parts of the site (i.e., clearing and grubbing could occur in one portion of the site while mass excavation, removal and recompaction of overburden, rock removal, and finish grade could occur on other portions of the site). Table 2.2-3, *Maximum Daily Estimated Construction Emissions*, provides a summary of the emission estimates for each individual units of construction for the proposed project, regardless of which grading scenario is implemented.

During the maximum daily construction scenarios for the site grading and preparation phase, emissions of VOCs, NO_x, $PM_{2.5}$ and PM_{10} would be above the screening-level thresholds. Even with application of BMPs to control emissions of NO_x and fugitive dust, emissions of these pollutants would exceed the stated significance thresholds during construction. Because the construction phase of the project is short term in nature, criteria pollutants emissions during construction would constitute a significant but temporary impact on the ambient air quality. Temporary construction emission impacts would be considered significant because they would exceed Significance Guideline 3. **(AQI-1)**

2.2.3.2 *Construction Toxic Air Contaminants (Guidelines 3 and 5)*

To evaluate whether project construction could pose a significant impact to nearby sensitive receptors, an evaluation of diesel exhaust particulate matter was conducted. Diesel exhaust particulate matter is known to the state of California as carcinogenic compounds. The risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined in the California Office of Environmental Health Hazard Assessment (OEHHA) guidelines, "The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," as 24 hours per day, 7 days per week, 365 days per year, for 70 years. Diesel exhaust particulate matter would be emitted during construction due to the operation of heavy equipment at the site. Because diesel exhaust particulate matter is considered to be carcinogenic, long-term exposure to diesel exhaust emissions have the potential to result in adverse health impacts.

The USEPA's approved air dispersion model, ISCST3 (USEPA 1999) was used to estimate the downwind impacts at the three closest receptors (homes) to the proposed construction site. The model was run using data from the Marine Corps Air Station (MCAS) Miramar surface meteorological monitoring station and the MCAS Miramar upper air meteorological monitoring station for 1995. Based on air dispersion modeling by SRA, the maximum excess cancer risk predicted would be 0.00508 in a million, or 0.00000000508. This value is below the County of San Diego's significance threshold of 1 in 1 million (or 0.000001). The risk associated with exposure to diesel particulate from construction of the proposed project would, therefore, not be significant.

2.2.3.3 *Operational Emissions Criteria Pollutants (Guidelines 1, 2 and 3)*

Because specific tenants, buildings or uses are not known at this time, emissions associated with specific industrial park operations that would include stationary sources of emissions were not evaluated. Stationary emission sources associated with light and heavy industrial uses would be subject to the permitting requirements of the APCD and would be required during Site Plan review to comply with APCD Rules and Regulations governing the emissions of air contaminants. As such, these sources would not be allowed to emit pollutants that would cause a significant impact on ambient air quality. This analysis does address emissions from light industrial non-stationary sources, including site grading, construction, and mobile source emissions.

The main source of operational emissions associated with the Otay Crossings Commerce Park project would be traffic. Based on the traffic impact study by Darnell and Associates contained in Appendix B of this SEIR, the proposed project would generate 21,279 daily trips, as discussed in Subchapter 2.1, *Transportation/Circulation*, of this report. Once the SR-11 facility and federal POE are constructed, truck parking would be eliminated from those portions of the site and the project trip volume would drop to 18,768 daily trips. The Existing Plus Project Units 1-5 and Buildout traffic scenarios were

both analyzed for operational emissions since the first scenario represents the worst-case project-related operational air emissions, while the second scenario represents the long-term emissions after all project-related interim uses are removed from the site by the construction of SR-11 and the POE. The Buildout scenario incorporates emissions generated by all cumulative projects in the project vicinity, including the full implementation of SR-11 and the new Otay Mesa East POE.

To estimate emissions associated with project-related traffic, the EMFAC2007 model (CARB 2007c) was used. The model is the latest version of the Caltrans emission factor model for on-road traffic. To be conservative, emission factors representing the vehicle mix for 2012 were used to estimate emissions for the Existing Plus Project Units 1-5 traffic scenario since vehicular emissions rates for subsequent years would decrease on an annual basis as higher polluting vehicles are phased out and more stringent emission standards are implemented. The results of the emission calculations combined with area sources are summarized in Tables 2.2-4 (Existing Plus Project Units 1-5 scenario) and 2.2-5 (Buildout) and are compared to the significance guidelines cited above.

Based on the estimates of the emissions associated with proposed project operations, the emissions of carbon monoxide (CO), NO_x, and VOCs would be above the screening-level thresholds contained in Significance Guideline 2 during the Existing Plus Project Units 1-5 scenario, resulting in a significant impact. **(AQI-2)** Operations emissions of CO and VOC for the Buildout traffic condition would be above screening-level thresholds contained in Significance Guideline 2, resulting in a significant impact. (**AQI-3**)

The project-level emissions are generally consistent with the overall vehicle trips projected in the EOMSP for the project site because the proposed industrial land use is generally consistent with the EOMSP land use plan (see Figures 1-5 and 1-6). Therefore, although operational project emissions would exceed the screening criteria for CO and VOC, they have been accounted for in the RAQS and the SIP because the proposed project would implement the property's industrial land use designation, which is the basis of the emissions forecasts for the region. Project emissions would be consistent with the previous analysis and would not represent a significant increase over projected emissions. In addition, vehicular emissions would decrease over time with phase-out of older vehicles and the implementation of stringent emissions controls.

2.2.3.4 *CO "Hot Spots" (Guideline 3)*

To further evaluate whether the project would result in a significant impact, an assessment to evaluate whether emissions of CO would cause a ground-level exceedance of the NAAQS or CAAQS was conducted. Projects involving traffic impacts may result in the formation of locally high concentrations of CO, known as CO "hot spots." To verify that the proposed project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO "hot spots" was conducted based on the data from the project traffic study.

Degradations in intersection LOS were predicted for the Existing Plus Project Units 1-5 and Buildout traffic scenarios. The analysis in the EOMSP Final EIR concluded that long-term CO emissions during build out of the Specific Plan would not be significant since the Circulation Element of the EOMSP would provide for the addition of travel lanes which would improve LOS. The EOMSP Final EIR concluded that no ambient air quality impacts would be expected. According to the land use plan for the EOMSP, the area to the north of Otay Mesa Road west of Alta Road, in which three residences currently exist, is designated for development as a technology business park. Thus, the

three sensitive receptors that are currently located along the road would not likely be present in the future conditions. Therefore, modeling to evaluate the potential for CO "hot spots" would not be required in accordance with the Caltrans protocol. Traffic mitigation measures described in Subchapter 2.1 of this report would be implemented by the project applicant and all impacted intersections would operate acceptably at Buildout. Because intersection LOS would be acceptable for the Buildout conditions and as there are no existing or planned sensitive receptors that would be affected by CO "hot spots", the air quality impacts associated with traffic would not change from those impacts evaluated in the prior Final EIR, and no new significant impacts are identified for the Otay Crossings Commerce Park project.

2.2.3.5 *Operational Toxic Air Contaminants (Guidelines 3 and 5)*

In addition to criteria pollutants, vehicular traffic may result in emissions of toxic air contaminants (TACs). Based on the County of San Diego's requirements, a quantitative evaluation of the potential for risks associated with exposure to diesel particulate emissions generated by vehicles accessing the site was performed. Emissions of diesel particulate matter from medium- and heavy-duty trucks were evaluated based on EMFAC2007 outputs for the Buildout traffic scenario only since it represents the long-term emissions exposure. The risk assessment evaluated impacts from traffic traveling along the major routes to and from the site, including Otay Mesa Road, the future SR-11, Airway Road, Siempre Viva Road, and Alta Road.

Potential impacts to existing sensitive receptors were evaluated based on the "Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions" (SCAQMD 2002). According to the Guidance, the ISCST3 model was used to estimate impacts associated with diesel particulate exhaust emissions from heavy duty vehicles. HARP (OEHHA 2003b) was used to estimate the high-end incremental cancer risks associated with exposure to diesel particulate from trucks. The high-end excess cancer risk was calculated based on guidance from the Office of Environmental Health Hazard Assessment (OEHHA 2003a), using the residential exposure scenario at the nearest sensitive receptor (located at Kuebler Ranch Road). The maximum incremental residential cancer risk associated with exposure to diesel particulate from project-generated truck trips was estimated to be 0.798 in a million at the nearest sensitive receptor, which is below the County threshold of 1 in a million, resulting in a less-than-significant impact.

When added to the risk associated with heavy-duty vehicles, the maximum incremental worker cancer risk level of 3.76 in a million would be below the County's significant risk threshold of 10 in a million with implementation of T-BACT. The project requirement that ten percent of the construction fleet use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters and/or CARB certified Tier I, II, or III equipment, is considered to be T-BACT. With use of ten percent of the construction fleet retrofitted and/or re-powered, the project would reduce emissions from heavy equipment to the extent feasible. The emissions would be further reduced by the use of low-sulfur diesel fuels (mandated in 2007) and compliance with future diesel emissions standards being contemplated by CARB. Furthermore, impacts that are farther from the roadway would be lower as concentrations decrease with increasing distance from the roads. Additionally, the land within the EOMSP adjacent to the roads is planned for industrial development, which would not contain sensitive receptors. Thus, the exposure scenario would be lower than calculated based on 70 years of exposure; according to OEHHA guidance; a maximum scenario for worker exposure would be 8 hours per day, 5 days per week, for 40 years. Given that the worker scenario risk would be approximately 13.6 percent of residential risks, the worker risk at the maximum point of impact would be estimated at 0.51 in a million, which would be

below the County's significant risk threshold without T-BACT. Therefore, implementation of the project would not result in a significant impact due to cancer risk associated with exposure to diesel particulate from project-generated traffic.

2.2.3.6 *Odors (Guideline 4)*

During construction, diesel equipment operating at the site could generate some nuisance odors; however, due to the distance from existing sensitive receptors to the project site that would increase as grading progresses south and east and the temporary nature of construction, odors associated with project construction would not be significant.

Because specific tenants, buildings or uses are not known at this time, odors associated with specific industrial park operations cannot be determined. Therefore, no new odor sources would arise from the proposed project. Each future site plan and/or major use permit would be required to demonstrate that substantial odors would not be produced. Operational odor impacts would not be significant.

2.2.3.7 *Global Climate Change (Guideline 7)*

This section presents an assessment of potential global climate change impacts associated with the proposed project. The evaluation addresses the potential for GHG emissions during construction and after full buildout of the project. GHG emissions have been calculated for "business as usual" conditions and for conditions after the implementation of GHG emission reduction measures proposed as project design features by the applicant. The project has been evaluated as to whether it would meet the goals of AB 32.

Construction Impacts

Construction GHG emissions associated with the proposed project were estimated using the same approaches as criteria pollutants, using the EMFAC2007 and OFFROAD models. The project includes construction-related GHG emission reduction features, including the use of ARB-certified construction equipment and recycling of construction waste (refer to Chapter 8.0). According to the CAPCOA White Paper, emission reductions associated with these measures are not quantifiable; however, to estimate emission reductions associated with construction mitigation measures, it was assumed that construction emissions would be reduced by five percent through implementation of these measures. Total GHG emissions associated with construction are summarized in Table 2.2-6 and are estimated to be 2,261 Mtons of CO_2 Eq. total for the duration of construction, with the five percent reduction from "business as usual." Therefore, amortizing the construction emissions associated with construction over a 30-year period would indicate that the project emissions would contribute 75.3 Mtons per year.

The proposed project would also remove existing vegetation from the site that temporarily stores carbon (i.e., carbon capture) as part of the terrestrial carbon cycle. Over time, landscaping and soils may increase carbon storage compared to predevelopment conditions; however, these gains may be offset by vegetation and soil storage lost to more extensive impervious surface areas, such as pavement and buildings. It is difficult to predict the net change in carbon stores, but it is expected to be relatively small.

Operational Impacts

While the project does not include the construction of buildings or operation of industrial uses, the project is considered to be a light industrial use without stationary source air emissions. Pursuant to the County's Interim Guidance for GHG Analysis for Industrial Use in EOMSP, subsequent projects that include light industrial, non-stationary source uses consistent with the analysis in this SEIR may rely on this CEQA document during the site plan review process. The analysis in this SEIR assumes the site would include development of 2.3 to 2.5 million s.f., which would be comprised of 80 percent distribution, 10 percent retail uses, and 10 percent light industrial uses (Otay Mesa Industrial Market Study, Grubb and Ellis 2009). The project includes several environmental design considerations that would reduce GHG emissions relative to "business as usual" (refer to Chapter 8.0). Such environmental design considerations would provide more efficient energy and water use, as well as reduce vehicle miles traveled. Project operational GHG emissions include those from energy use, water use, and traffic. The results from the inventory of project-level operational GHG emissions are discussed below in detail.

Energy Use Emissions

Energy use generates GHG through emissions from power plants that generate electricity, as well as emissions from natural gas usage at the facility itself. "Business as usual" electricity and natural gas use was estimated based on the assumption that future site plans and development at the Otay Crossings Commerce Park would meet the requirements of Title 24 as of 2005.

The SDCGHGI indicated that the necessary emission reductions for electricity generation will be achieved in a variety of ways, including through implementation of the renewable portfolio standard, cleaner electricity purchases by San Diego Gas and Electric, replacement of the Boardman Contract (which allows the purchase of electricity from coal-fired power plants), and implementation of 400 megawatts of photovoltaics. These measures are outside the control of project applicants. The SDCGHGI indicates that reduction in electricity consumption by 10 percent would contribute to the required reduction in GHG emissions required to reduce emissions to 1990 levels by 2020.

The assumed "business as usual" annual electricity usage rates for light industrial and retail space (including warehouse distribution uses) were 12.95 kilowatt-hours (kWh) per s.f. and 13.55 kWh per s.f., respectively (SCAQMD 1993). Likewise, natural gas "business as usual" usage was estimated based on the consumption of 2.0 cubic feet of gas per s.f. per month for the light industrial space, and 2.9 cubic feet of gas per s.f. per month for the retail space (SCAQMD 1993). GHG emissions were calculated using emission factors from the California Climate Action Registry General Reporting Protocol (CCAR 2008), which provide an estimate of pounds of emissions for a given amount of annual electricity usage.

The project would include environmental design considerations (refer to Chapter 8.0) to reduce electricity and gas use on site. These environmental design considerations would be implemented at the time of future review and approval of site plans. These measures include exceedance of Title 24 energy efficiency standards (as of 2005) by 15 percent, which would result in an electricity- and natural gas-related GHG emissions reduction of 15 percent. The future development also would achieve LEED certification standards to further reduce energy use-related GHG emissions by five percent.

In addition to the environmental design considerations identified in Chapter 8.0, indirect emissions from electricity use would be further reduced due to implementation of the renewable portfolio standard. Based on the SDCGHGI, these measures would reduce GHG emissions from electricity use by 13 percent.

Water Use Emissions

Water use and energy use are often closely linked. The provision of potable water to commercial users (which includes distribution, light industrial, and retail uses) consumes large amounts of energy associated with five stages: source and conveyance, treatment, distribution, end use, and wastewater treatment. This inventory estimated that delivered water for the project would have an embodied energy of 3,519 kWh per acre-foot or 0.0108 kWh per gallon (Wilkinson and Wolfe 2005). Water usage was estimated from the landscape design, as well as for building water use. "Business as usual" water usage, without water management strategies implemented, is estimated at 0.264 million gallons per day (mgd) for the project. GHG emissions were then estimated based on the embodied energy of water, using the emission factors from the California Climate Action Registry General Reporting Protocol (CCAR 2008). Approximately 0.034 mgd of recycled water would also be used on site. As a conservative estimate, it was assumed the recycled water would have the same embodied energy as potable water.

The project includes environmental design considerations that reduce water usage, as indicated in Chapter 8.0. These environmental design considerations include installing water-saving irrigation systems, use of drought-resistant plants, and use of recycled water, where feasible. These environmental design considerations would result in a 10 percent water use reduction, which is equivalent to a 10 percent water use-related GHG emission reduction.

Transportation Emissions

The main source of operational greenhouse gas emissions associated with the Otay Crossings Commerce Park project would be vehicular emissions. On-road vehicle emissions account for 46 percent of existing GHG emissions in San Diego County. Traffic estimates have been made based on anticipated development based on acres of developable area. Overall, Units 1 through 5 of the proposed project would generate 21,279 ADT. Emissions from vehicles under "business as usual" conditions were calculated using the EMFAC2007 model, which does not take into account any of the GHG reduction measures proposed by the state or federal government.

As discussed above, the Governor of California has signed Executive Order S-01-07, calling for a 10 percent reduction in carbon content in fuels in California, by 2020. The U.S. Congress has recently adopted legislation to require CAFE standards to reach 35 miles per gallon (mpg) by 2020; the default EMFAC2007 average mpg for vehicles traveling at 45 miles per hour is 27 mpg; other speeds are less efficient and mpg decreases. Therefore, the new CAFE standards would lead to approximately 23 percent greater fuel efficiency, which would lower GHG emissions. The SDCGHGI assumed a 26-percent reduction in vehicle emissions due to implementation of the CAFE standards and the LCFS, not including reductions that would be realized through other programs such as the Pavley emission standards and vehicle hybridization.

In addition to the reduction in vehicular emissions associated with federal and state GHG reduction programs, Otay Crossings Commerce Park would provide plug-ins for transport refrigeration units,

which operate on diesel fuel. This measure would also reduce emissions of GHGs from trucks utilizing the development. GHG emissions associated with transportation also would be reduced by three percent because the project would mix industrial, retail, and open space uses.

Conclusion

The results of the project-level GHG inventory for emissions for "business as usual" are shown in Table 2.2-7 and the project-level GHG inventory with implementation of GHG environmental design considerations are presented in Table 2.2-8. In addition, Table 2.2-9 provides a summary of GHG-reduction measures and their contribution to reductions for the proposed project. As shown in these tables, project operational GHG emissions would meet the guideline to reduce operational emissions by 30.25 percent overall. The project would, therefore, be consistent with the goals of AB 32 within San Diego County, and would result in a less than considerable contribution to cumulative impacts to global climate change. A further discussion of cumulative impacts is provided below in Subsection 2.2.4 of this report.

Global Climate Change Impacts on the Project

Global climate change may in turn affect the project by potentially increasing the risk of wildfire hazard and affecting water supply reliability. The Climate Scenarios Report (CCCC 2006), uses a range of emissions scenarios developed by the IPCC to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century. Three warming ranges were identified: Lower warming range (3.0 to 5.5 degrees Fahrenheit [°F]); medium warming range (5.5 to 8.0 °F); and higher warming range (8.0 to 10.5 °F). The Climate Scenarios report then presents an analysis of the future projected climate changes in California under each warming range scenario.

Specifically, global warming is expected to increase the risk of wildfire and alter the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the State. Because the project site is located near natural vegetation, wildfire risk is a probable effect; however, the project will implement fire protection measures contained in the Fire Protection Plan contained in Appendix M of this report to minimize the risk to properties on site.

Water availability is another probable effect on the proposed project. Based on the Climate Scenarios Report, a vast network of reservoirs and aqueducts capture and transport water throughout the State from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada mountain snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages. In addition, if temperatures continue to rise more precipitation would fall as rain instead of snow, further reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. The State's water resources are also at risk from rising sea levels. An influx of seawater would degrade California's estuaries, wetlands, and groundwater aquifers. The OWD approved a Water Supply Assessment for the proposed project which addressed their ability to service the project during drought conditions. In addition, water conservation

measures such as climate-sensitive irrigation controls would be utilized to minimize the project's demand for potable water. See Appendix I of this report for details on the water availability decision reached by OWD.

The project could be subjected to increased wildfire and decreased water availability as a result of climate change; however, fire protection measures and water conservation strategies would be integrated into the project to minimize such effects. Therefore, global climate change impacts to the project would be less than significant.

2.2.4 Cumulative Impact Analysis

In analyzing cumulative impacts from a proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants. Based on the San Diego air basin not being in attainment for PM_{10} and ozone precursors, a project that has a significant impact on air quality with regard to emissions of PM_{10}, NO_x and/or VOCs as determined by the screening criteria outlined above would have a significant cumulative effect. With regard to criteria pollutants, the cumulative study area analyzed here is the entire San Diego Air Basin covered by the RAQS and SIP. Impacts associated with fugitive dust from construction are generally localized, so the cumulative study area for fugitive dust is within a one-quarter-mile radius of the project site.

As noted under Subchapter 2.2.3.3 of this SEIR, the proposed project's operational emissions were evaluated and considered within the EOMSP Final EIR, and the overall growth associated with the proposed project has been accounted for in the RAQS and SIP. Most of the ozone precursors emissions associated with the Otay Crossings Commerce Park project are accounted for and considered in the emissions budget for the EOMSP Area. Although, operational emissions generated by the proposed project would be consistent with the RAQS, its contribution to cumulative emissions of ozone precursors would be considerable in light of the non-attainment status of the SDAB and cumulatively significant and unavoidable impacts on the ambient air quality are identified because Significance Guideline 6 would be met. **(AQI-4)**

It is estimated that California produces about 7 percent of U.S. GHG emissions with about 41 percent of those emissions related to transportation and about 22 percent related to electricity usage. The CARB has recently completed a state-wide emissions inventory and projection as part of its GHG Inventory Forecast. The state produced approximately 468.8 MMtons of CO_2 Eq. emissions in 2002-03 and is forecasted to produce 596.4 MMtons of CO_2 Eq. emissions by 2020 (CARB 2008). Within San Diego County, 43 MMtons of net CO_2 Eq. are predicted by 2020 under "business as usual" conditions. The project's long-term "business as usual" contribution to cumulative GHG emissions would be 0.00008 percent of the state's projected total and 0.0009 percent of the County's projected total, assuming an operational total of 36,914 Mtons per year under "business as usual" conditions. The project would be consistent with the goals of AB 32 to reduce emissions of GHG, and projected GHG reductions would exceed AB 32 guidelines by providing reductions greater than 28.3 percent below "business as usual." The project would implement all feasible energy and water conservation measures, such as those outlined in Chapter 8.0 of this document, to reduce GHG emissions to the extent possible. The project would also comply with any state-mandated requirements resulting from AB 32 and the statewide emissions inventory, as well as any County requirements resulting from the General Plan update process. Project-specific reductions below the AB 32 guidelines and compliance with future statewide and County programs would avoid cumulatively substantial effects and its contribution of GHG emissions would not be considerable.

2.2.5 Mitigation Measures Proposed to Minimize the Significant Effects

Construction Emissions

Best management practices to reduce fugitive dust during construction include multiple water applications; paving, chip sealing or chemical stabilization of internal roadways; use of sweepers or water trucks; termination of grading if winds exceed 25 mph; and stabilization of dirt storage piles. In addition, measures to minimize equipment emissions during construction include use of low pollutant emitting construction equipment; minimization of simultaneous operation of multiple construction units; use of electrical construction equipment; use of catalytic reduction for gasoline-powered equipment; and use of injection timing retard for diesel-powered equipment.

Minimization of idling times would be included as a requirement in the construction contract, taking into account the idling requirements for startup of heavy equipment as well as idle time at midday for 30 minutes while mechanics check all equipment for liquid level as per engine manufacturer's requirements. This measure would reduce emissions of criteria pollutants but would not reduce emissions to less than significant levels.

The CARB has implemented a program under Title 13, California Code of Regulations, Sections 2281-2285 and Title 17, California Code of Regulations, Section 93114 that requires sellers of diesel fuel to meet a 15 ppm sulfur limit for all[1] vehicular diesel sold in California starting in 2007, including diesel for use in construction equipment. The proposed project would be constructed using low-sulfur diesel fuel because construction would commence after the date that low sulfur diesel fuel is required. This requirement would reduce project emissions of particulate matter, but would not reduce project emissions of fugitive dust generated during grading or NO_x below significant levels.

In accordance with County requirements, ten percent of the construction fleet will be required to use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters and/or CARB certified Tier I, II, or III equipment. It has been determined that ten percent of the fleet would be a reasonable requirement based on the number of contractors whose fleets have already been retrofitted and engines re-powered as a result of local and neighboring Carl Moyer Program contracts[2]. **(AQM-1)** With use of a ten percent retrofitted and/or re-powered construction fleet, the proposed project would reduce emissions from heavy equipment to the maximum extent feasible.

Specifically, replacing Tier I equipment with Tier II equipment would result in an average reduction in non-methane hydrocarbon and NO_x of 25.74 percent, an average reduction in CO of 30.69 percent, and an average reduction in PM of 48.59 percent. Assuming that a minimum of 10 percent of the equipment would meet these standards, the associated reduction in emissions would be 2.57 percent for NO_x, 3.07 percent for CO, and 4.86 percent for PM_{10}. Other measures may achieve different average reductions in emissions; however, these values represent a conservative estimate of the emission reductions that would be achieved through implementation of Mitigation Measure AQM-1. Table 2.2-10 presents estimated reductions in construction emissions that would be achieved. As shown in this table, NO_x emissions during construction of the proposed project would be 1,132.83 pounds per day (compared to 1,162.35

[1] This requirement also applies to non-vehicular diesel fuel with the exception of locomotive and marine vessel fuels, which are regulated by other requirements. The low-sulfur diesel fuel requirement will reduce emissions of particulate matter from all diesel sources.

[2] The Carl Moyer Memorial Air Quality Standards Attainment Program is designed to achieve near-term reductions in emissions of NO_x, PM, and reactive organic gas (ROG) to meet clean air commitments under the SIP and local transportation conformity plans. The Program provides incentive funds for the incremental cost of cleaner-than-required engines, vehicles and equipment.

pounds per day without the mitigation measure), which equates to 4.5 times over the screening-level threshold of 250 pounds per day.

Use of alternatively-fueled or catalyst-equipped diesel construction equipment and minimization of idling times would not reduce the emissions of NO_x below the screening-level threshold as shown in Table 2.2-10. Implementing the mitigation from the EOMSP Final EIR would also not result in a substantial reduction of NO_x emissions because they are similar measures.

The above best management practices and emission-reducing measures would reduce construction equipment impacts. However, beyond the required measures contained within the San Diego County Grading Ordinance, Section 87.428 and Mitigation Measure 9A from the EOMSP Final EIR discussed above, no feasible project-specific mitigation can be implemented to reduce fugitive dust and ozone precursors during construction identified in **AQI-1** to below stated significance guidelines. For instance, the amount of grading and heavy construction equipment operations conducted on a daily basis would have to be reduced four-fold to 10 acres per day and 2 hours per day, respectively, to not cause **AQI-1**, which is not reasonable because the construction schedule would be substantially increased, which would result in economic infeasibility for the project on the basis that balanced grading would take one year to complete, rather than four months.

Operational Emissions

Facilities measures including bike storage facilities and shuttle services would be implemented during long-term project operations. In addition, transportation measures including transit funding, transportation control measures, and travel reduction programs would be incorporated into future site plans. However, beyond the implementation of transportation demand management measures contained in Mitigation Measure 9C from the EOMSP Final EIR on an individual site plan level, no feasible project-specific mitigation measures exist in the Existing Plus Project Units 1-5 and Buildout traffic condition to reduce the operational emissions identified in **AQI-2, AQI-3** and **AQI-4** to below County significance guidelines.

2.2.6 Conclusion

The proposed project would result in emissions of air pollutants for both the construction phase and operational phase of the project. Maximum daily and total annual construction emissions would be above the significance guidelines for VOC, NO_x, $PM_{2.5}$ and PM_{10} and would pose a significant, but temporary, impact on the ambient air quality during construction, at both the project and cumulative levels. Beyond the mitigation measures required by the County and contained in the Final EIR for the EOMSP[3] and other best management practices, no feasible mitigation exists to further reduce construction emissions; therefore, the impact would be temporary but not mitigated to less than significant levels. Emissions of diesel particulate matter during construction would not exceed the County's health risk threshold of 1 in 1 million; therefore, impacts would be less than significant.

[3] The mitigation measures required in the Final EIR for the EOMSP include multiple water applications; paving, chip sealing or chemical stabilization of internal roadways; use of sweepers or water trucks; termination of grading if winds exceed 25 mph; stabilization of dirt storage piles; stabilizing graded areas (pave roads, hydroseed open areas, etc.); limiting vehicles speeds on unpaved surfaces; and covering trucks hauling dirt for cut and fill operations.

Operational emissions of CO and VOCs associated with traffic and other sources would be above the screening-level thresholds during the Existing Plus Project Units 1-5 traffic condition. Because emissions are mainly associated with project-related traffic, reductions in traffic would naturally occur when interim uses are removed from 33.1 acres of the site by the construction of SR-11, and the proposed project would be consistent with the land use plan for the EOMSP, so no long-term degradation of regional air quality would occur. Additionally, operational emissions of CO and VOC associated with traffic and other sources would be above the screening-level thresholds during the Buildout condition, which incorporates all cumulative projects in the vicinity, including full implementation of SR-11 and the new POE. Implementation of transportation reduction measures outlined in the EOMSP Final EIR (Mitigation Measure 9C) would reduce project-related traffic emissions; however, the operational emissions associated with the project would be considered significant and unmitigated on both a project and cumulative level. Because T-BACT would be in effect and the County health risk guideline would not be exceeded, no significant TAC impacts would arise from long-term vehicular emissions.

The proposed project would not interfere with California's ability to achieve GHG reduction goals and strategies as identified in AB 32 and Executive Order S-01-07 because the project would include GHG emissions reduction environmental design considerations. Therefore, project climate change impacts would not be cumulatively considerable and no mitigation would be required. Future industrial lot owners would be required to comply with any state-mandated requirements resulting from AB 32 or future local requirements. The project could be subjected to increase wildfire and decreased water availability as a result of climate change; however, fire protection measures and water conservation strategies would be integrated into the project to minimize those effects.

Table 2.2-1
COUNTY SIGNIFICANCE GUIDELINES FOR AIR QUALITY

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

Source: Guidelines for Determining Significance and Report Content Requirements for Air Quality, March 19, 2007.

Table 2.2-2
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
		Concentration	Primary	Secondary
Ozone (O_3)	1-Hour	0.09 ppm (180 $\mu g/m^3$)	0.12 ppm (235 $\mu g/m^3$)	Same as Primary Standard
	8-Hour	0.070 ppm (137 $\mu g/m^3$)	0.075 ppm (147 $\mu g/m^3$)	
Respirable Particulate Matter (PM_{10})	24-Hour	50 $\mu g/m^3$	150 $\mu g/m^3$	Same as Primary Standard
	Annual Arithmetic Mean	20 $\mu g/m^3$	---	
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard	35 $\mu g/m^3$	Same as Primary Standard
	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)	None
	1-Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	

Table 2.2-2 (cont.)
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
		Concentration	Primary	Secondary
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm (56 $\mu g/m^3$)	0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard
	1-Hour	0.18 ppm (338 $\mu g/m^3$)	---	
Lead	30-Day Average	1.5 $\mu g/m^3$	---	---
	Calendar Quarter	---	1.5 $\mu g/m^3$	Same as Primary Standard
Sulfur Dioxide (SO_2)	Annual Average	---	0.03 ppm (80 $\mu g/m^3$)	---
	24-Hour	0.04 ppm (105 $\mu g/m^3$)	0.14 ppm (365 $\mu g/m^3$)	---
	3-Hour	---	---	0.5 ppm (1300 $\mu g/m^3$)
	1-Hour	0.25 ppm (655 $\mu g/m^3$)	---	---
Sulfates	24-Hour	25 $\mu g/m^3$	---	---
Hydrogen Sulfide Vinyl Chloride	24-Hour	0.010 ppm (26 $\mu g/m^3$)	---	---

Source: CARB, July 2008.
ppm=parts per million
mg/m^3=milligrams per cubic meter
$\mu g/m^3$=micrograms per cubic meter

Table 2.2-3
MAXIMUM DAILY ESTIMATED CONSTRUCTION EMISSIONS
(Grading and Site Preparation)

Emission Source	CO	VOCs	NO_x	SO_x	PM_{10}	$PM_{2.5}$
lbs/day						
Grading Phase 1 and Development Unit 1						
Fugitive Dust – Mass Grading	-	-	-	-	156.00	32.76
Heavy Equipment Exhaust	365.64	94.92	900.33	0.76	24.05	21.40
Worker Travel – Vehicle Emissions	14.45	0.64	1.33	0.02	0.17	0.09
TOTAL	**380.09**	**95.56**	**901.66**	**0.78**	**180.22**	**54.25**
Screening-Level Thresholds	550	75	250	250	100	55
Above Thresholds?	*No*	*Yes*	*Yes*	*No*	*Yes*	*No*
Development Unit 2						
Heavy Equipment Exhaust	37.31	12.90	129.02	0.14	4.83	4.30
Worker Travel – Vehicle Emissions	14.45	0.64	1.33	0.02	0.17	0.09
TOTAL	**51.76**	**13.54**	**130.35**	**0.16**	**5.00**	**4.39**

Table 2.2-3 (cont.)
MAXIMUM DAILY ESTIMATED CONSTRUCTION EMISSIONS
(Grading and Site Preparation)

Emission Source	CO	VOCs	NO_x	SO_x	PM_{10}	$PM_{2.5}$
			lbs/day			
Grading Phase 1 and Development Unit 1 (cont.)						
Screening-Level Thresholds	550	75	250	250	100	55
Above Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Development Unit 3						
Heavy Equipment Exhaust	37.31	12.90	129.02	0.14	4.83	4.30
Worker Travel – Vehicle Emissions	14.45	0.64	1.33	0.02	0.17	0.09
TOTAL	**51.76**	**13.54**	**130.35**	**0.16**	**5.00**	**4.39**
Screening-Level Thresholds	550	75	250	250	100	55
Above Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Grading Phase 2 and Development Unit 4						
Fugitive Dust - Grading	-	-	-	-	128.27	26.94
Heavy Equipment Exhaust	162.28	43.33	414.04	0.42	16.37	14.57
Worker Travel – Vehicle Emissions	14.45	0.64	1.33	0.02	0.17	0.09
TOTAL	**176.73**	**43.97**	**415.37**	**0.44**	**144.81**	**31.60**
Screening-Level Thresholds	550	75	250	250	100	55
Above Thresholds?	*No*	*No*	*Yes*	*No*	*Yes*	*No*
Development Unit 5						
Heavy Equipment Exhaust	37.31	12.90	129.02	0.14	4.83	4.30
Worker Travel – Vehicle Emissions	14.45	0.64	1.33	0.02	0.17	0.09
TOTAL	**51.76**	**13.54**	**130.35**	**0.16**	**5.00**	**4.39**
Screening-Level Thresholds	550	75	250	250	100	55
Above Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
Maximum Daily Construction, Grading Phase 1 (Units 1 through 3)						
Fugitive Dust - Grading	-	-	-	-	156.00	32.76
Heavy Equipment Exhaust	440.16	120.71	1158.36	0.99	45.44	40.45
Worker Travel – Vehicle Emissions	43.35	1.92	3.99	0.06	0.51	0.27
TOTAL	**483.51**	**122.63**	**1162.35**	**1.05**	**201.95**	**73.48**
Screening-Level Thresholds	550	75	250	250	100	55
Above Thresholds?	*No*	*Yes*	*Yes*	*No*	*Yes*	*Yes*

Source: SRA 2009.

Table 2.2-4
TOTAL OPERATIONAL EMISSIONS
(Existing Plus Project Units 1-5 [Interim] Traffic Scenario)

	CO	VOC	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Lbs/day						
Energy Use	0.68	0.06	0.81	-	0.00	0.00
Vehicular Emissions	1436.86	169.68	243.26	1.25	15.12	10.28
TOTAL	**1437.54**	**169.74**	**244.47**	**1.25**	**15.12**	**10.28**
Screening-Level Thresholds	550	75	250	250	100	55
Above Thresholds?	*Yes*	*Yes*	*No*	*No*	*No*	*No*
Tons/year						
Energy Use	0.12	0.01	0.15	-	0.00	0.00
Vehicular Emissions	262.23	31.02	44.39	0.22	2.76	1.88
TOTAL	**262.35**	**31.03**	**44.54**	**0.22**	**2.76**	**1.88**
Screening-Level Thresholds	100	10	40	100	15	10
Above Thresholds?	*Yes*	*Yes*	*Yes*	*No*	*No*	*No*

Source: SRA 2009.

Table 2.2-5
TOTAL OPERATIONAL EMISSIONS
(Buildout Traffic Scenario)

	CO	VOC	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Lbs/day						
Energy Use	0.68	0.06	0.81	-	0.00	0.00
Vehicular Emissions	576.48	86.35	85.48	1.22	13.47	8.63
TOTAL	**577.16**	**86.41**	**86.29**	**1.22**	**13.47**	**8.63**
Screening-Level Thresholds	550	75	250	250	100	55
Above Thresholds?	*Yes*	*Yes*	*No*	*No*	*No*	*No*
Tons/year						
Energy Use	0.64	0.01	0.15	-	0.00	0.00
Vehicular Emissions	105.21	15.76	15.60	0.22	2.46	1.58
TOTAL	**105.85**	**15.77**	**15.75**	**0.22**	**2.46**	**1.58**
Screening-Level Thresholds	100	10	40	100	15	10
Above Thresholds?	*Yes*	*Yes*	*No*	*No*	*No*	*No*

Source: SRA 2009.

Table 2.2-6
ESTIMATED CONSTRUCTION GHG EMISSIONS

Construction Phase	CO_2 Emissions, Mtons	CH_4 Emissions, Mtons
Business as Usual		
Phase 1	1,585	0.15
Phase 2	795	0.07
TOTAL CO_2 Eq. Emissions	2,380	0.22
With GHG Reduction Measures[1]		
Phase 1	1,506	0.14
Phase 2	755	0.07
TOTAL CO_2 Eq. Emissions	2,261	0.21

Source: SRA 2010.
[1] GHG reduction measures were estimated to reduce construction-related GHG emissions by five percent.

Table 2.2-7
ESTIMATED OPERATIONAL GHG EMISSIONS
"BUSINESS AS USUAL" SCENARIO

Emission Source	Annual Emissions (Mtons/year)		
	CO_2	CH_4	N_2O
Electricity Use Emissions	12,963	0.099	0.055
Natural Gas Use Emissions	1,539	0.017	0.003
Water Usage	469	0.0032	0.0020
Vehicle Emissions	20,660	1.71	3.70
Amortized Construction Emissions	79	-	-
Total	35,710	1.83	4.76
Global Warming Potential Factor	1	21	310
CO_2 Eq. Emissions	35,710	38	1.166
TOTAL CO_2 Eq. Emissions	36,914		

Source: SRA 2010.

Table 2.2-8
ESTIMATED OPERATIONAL GHG EMISSIONS
WITH GHG REDUCTION MEASURES

Emission Source	Annual Emissions (Mtons/year)		
	CO_2	CH_4	N_2O
Electricity Use Emissions	8,651	0.066	0.036
Natural Gas Use Emissions	1,406	0.16	0.0027
Water Usage	308	0.0023	0.0013
Vehicle Emissions	14,462	1.20	2.59
Amortized Construction Emissions	75	-	-
Total	24,902	1.43	2.63
Global Warming Potential Factor	1	21	310
CO_2 Eq. Emissions	24,902	30	815
TOTAL CO_2 Eq. Emissions	**25,747**		
Percent Reduction from "Business as Usual"	30.25%		

Source: SRA 2011.

Table 2.2-9
SUMMARY OF EMISSION REDUCTIONS WITH IMPLEMENTATION OF GHG REDUCTION MEASURES

Transportation Emissions		
Business as Usual (CO_2 Eq.)		21,843
Reductions due to Statewide Measures		
Measure	**Percent Reduction**	**Emissions Reduction**
Pavley Motor Vehicle Standards	20%	4,369
Low Carbon Fuel Standard	10%	2,184
Total Reductions		**6,553**
Net Transportation Emissions		**15,290**
Operational Emissions		
Business as Usual (CO_2 Eq.)		14,996
Reductions due to Project Design Features and Statewide Measures		
Measure	**Percent Reduction**	**Emissions Reduction**
Renewable Portfolio Standard (33% renewables)	27% (electricity and embodied energy of water)	3,633
Meet 2008 Title 24 Standards	15% (electricity and natural gas)	948
Reduce water usage by 10%	10% (water use)	34
Total Reductions		**4,615**
Net Operational Emissions		**10,381**

Source: SRA 2011.

Table 2.2-10
MAXIMUM DAILY CONSTRUCTION EMISSIONS
WITH IMPLEMENTATION OF MITIGATION
(Lbs/day)

Activity	CO	VOCs	NO_x	SO_x	PM_{10}
Fugitive Dust – Grading	-	-	-	-	156.00
Heavy Equipment Exhaust	426.65	117.61	1,128.84	0.99	43.23
Worker Travel – Vehicle Emissions	43.35	1.92	3.99	0.06	0.51
TOTAL	**470.00**	**119.53**	**1,132.83**	**1.05**	**199.74**
Screening-Level Thresholds	550	75	250	250	100
Above Thresholds?	*No*	*Yes*	*Yes*	*No*	*Yes*

Source: SRA 2011.

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